



**BOARD OF EDUCATION OF HOWARD COUNTY
MEETING AGENDA ITEM**

TITLE: 2015 Feasibility Study Update **DATE:** November 5, 2015

PRESENTER(S): Joel Gallihue, Manager of School Planning

VISION 2018 GOAL: ☒ Students ☒ Staff ☒ Families and Community ☒ Organization

OVERVIEW:

The Board of Education reviews long-term capital planning options and redistricting scenarios through the annual Feasibility Study, last presented on June 11, 2015. This report included housing growth associated with the previously approved Downtown Columbia Plan permitting 5,500 multi-family residential units. Now 1,250 new housing units are proposed by Howard Hughes Corporation and are under discussion. The effect of these units on school capacity has been evaluated by the Office of School Planning in a memorandum. A fiscal impact study being prepared by a consultant for Department of Planning and Zoning (DPZ) will also examine capacity impact. Our analysis of the entire impact shows a need that exceeds one new elementary school, requiring at least one middle school addition, and some high school capacity.

Present requirements of Downtown Columbia call for the developer to provide future school sites if needed but do not require funding from the developer to offset capital needs. Capital funding is expected to come from the additional tax revenue assessed on the new development. The fiscal impact study will show that there will be adequate additional tax revenue to offset the capital and operating expenses needed to accommodate Downtown Development. The HCPSS Office of School Planning will continue to collaborate with the Howard County DPZ to monitor and evaluate this project for capital planning needs. A more detailed update follows with relevant attachments from the Feasibility Study, Columbia Town Center Study, and our memorandum on this topic. The fiscal study for DPZ will be issued early next month.

RECOMMENDATION/FUTURE DIRECTION:

To monitor development and ensure that future capital budgets account for growth. Incorporate any approved changes in the June 2016 Feasibility Study.

SUBMITTED BY: _____ **APPROVAL/CONCURRENCE:** _____
Joel Gallihue
Manager of School
Planning

Renee A. Foose, Ed.D.
Superintendent

Camille B. Jones
Chief Operating Officer

Bruce Gist
Executive Director
Facilities, Planning and

Introduction

The 2015 Feasibility Study was presented on June 11, 2015 with a new projection which included housing growth associated with the previously approved Downtown Columbia Plan permitting 5,500 multi-family residential units. (Attachment 1) An additional 1,250 new housing units are now proposed by Howard Hughes Corporation and the proposal is in discussion. The proposed change to the plan would allow a range of affordable and market rate housing units and represents an increase of approximately 23 percent over the originally approved 5,500 new units in this area. Students living in the Town Center are presently assigned to Running Brook Elementary, Wilde Lake Middle, and Wilde Lake High schools. Our currently projected school capacity levels would be insufficient to accommodate the additional student enrollment that would result from the total 6,750 new housing units. Preliminary analysis of the new proposal has been conducted and this document provides an update of the 2015 Feasibility Study. A list of key terms is listed on page 5 of this 2015 Feasibility Study Update.

History

Feasibility Study

The Feasibility Study is an annual report to inform the Board of the long term planning process and facilitate discussion of decisions that may lay ahead. The annual Feasibility Study was presented to the Board on June 11, 2015. The document, and the underlying projection in particular, predate any announcement of an idea to increase the residential units in Downtown Columbia. The pages of the 2015 Feasibility Study which are relevant to this matter are attached and are pages 19, 25, 31 and 40. (Attachment 1) The decision on this development change will not be known for several months so changes to these pages will be contained in the 2016 Feasibility Study.

Projection Methods

Future enrollment may be projected in different ways. The HCPSS projection method is based upon cohort survival or grade succession model with other factors, including birth data, new construction and existing residential housing. The Department of Planning and Zoning (DPZ) housing projection is included in the student enrollment projection model by school attendance area. Housing is divided into single-family attached, single-family detached and multi-family residential units for calculation of yield rates for each new unit type. The number future residential of units, estimated in an absorption schedule, is multiplied by historical pupil yield rates for each future year. The historical yield rates are calculated from the existing attending area or countywide averages if there is very little or no history in the past five years.

In the memo to the DPZ (Attachment 3), staff used the average standing yield rate (2007-2011) for the existing 741 apartments in Downtown Columbia to calculate the effect of new housing. This rate was then multiplied by the estimated absorption schedule for each future year. This was done because there is evidence documented in the Columbia Schools Study that different types of multi-family have different pupil yields. The HCPSS projection method typically combines all multi-family units including all rental apartments and condominiums of all heights. Changes in height, number of bedrooms, age and location are all actually factors which can alter the standing yield for any type of housing, including

multi-family. Future Downtown Columbia development is expected to have a lower pupil yield because it is anticipated to have taller and more expensive multi-family units with fewer bedrooms than the typical multi-family units already existing in Howard County.

No projection method is perfect and longer planning horizons are more difficult to project. The HCPSS method serves school system needs with accurate annual projections and accurate estimates for the ten year Long-Range Master Plan in the capital budget. There is evidence that the second decade of the projection is less reliable. One theory is that since there is no adjustment in the projection for changes in grade succession ratios over time, any positive ratio will continuously increase beyond a likely outcome. Additional assumptions could be built into the model to control for this effect, but since the school system makes an annual projection, changes in trends are taken into account, facilitating adjustments to long range plans.

MuniCap, Inc. is a finance consulting firm that specializes in the public finance aspects of redevelopment. MuniCap is under contract with the DPZ and is preparing a relevant fiscal study for the County Council. A study by MuniCap will model enrollment with a standing yield projection, which will not include the cohort survival projection methodology. Selected standing yield rates are multiplied by the total future units to create low, medium and high scenarios. Their study will use actual measured rates from Howard County and Montgomery County to model future enrollment.

The standing yield method used by the consultant will not include any increasing factors like grade succession ratios. Standing yields may actually change depending upon many factors like an aging building becoming more affordable over time, but evidence in the region does not indicate the yields would produce twenty year outcomes as high as those estimated by the HCPSS method. A more detailed study of multi-family yields is possible but, given the short timing, the consultant includes multiple ranges of scenarios. This helps capture any unforeseen changes in yields for this project. This seems to be the best approach in evaluating the long range impact of a specific project. Ongoing school system planning will continue to use the present cohort model, but the Office of School Planning also has standing yield models at its disposal for long range planning.

Recent Evaluations

The Columbia School Study was initiated as a result of the original Downtown Columbia Plan approval and was an attachment to the June 2014 Feasibility Study. (Attachment 2) In light of the pending application for additional residential units and a recent County Council work session discussing the same, the HCPSS Office of School Planning collaborated with the Department of Planning and Zoning to update the Columbia School Study in a memorandum dated October 8, 2015. (Attachment 3) The memorandum gave a preliminary determination of the school accommodations that would be required based on the projected additional growth.

A draft of MuniCap's fiscal study indicates the fiscal impact of the proposal will be found to be a net positive and, even under a high student yield scenario, the study finds there will be adequate additional tax revenue to offset the capital and operating expenses needed to accommodate downtown development. The MuniCap study finds that future school capacity is needed at a lower rate than the HCPSS analysis indicates. The variation results from different but valid enrollment projection methods. Under either scenario, school sites and capital funding will be needed. A final report is expected from MuniCap sometime in November.

Update to 2015 Feasibility Study

Analysis - Elementary

One additional 600-seat elementary school is included in the approved FY 2016-2025 Long-Range Master Plan. We believe this will accommodate the 5,500 new units already approved for Downtown Columbia development. The FY 2017 proposed capital budget has New ES #44 planned to open in 2027.

The preliminary enrollment analysis of the impact based on the new proposal (attachment 3) shows this school may be needed as early as 2024. An opening this early seems unlikely since the capital funding horizon is constrained by other projects and systemic needs.

The 2015 Feasibility Study notes that the completed addition at Running Brook ES, a planned addition at Swansfield ES, and redistricting including these schools, as well as Bryant Woods ES, Longfellow ES, and Clemens Crossing ES, are an interim capacity solution prior to the opening of a new elementary school. The Swansfield ES renovation completion is scheduled for August 2018, the same time as completion of New ES #42, which will require redistricting. As a result, it may be possible to implement this interim capacity solution in 2018 and provide relief for a number of years.

The HCPSS model indicates we may need a second 600-seat elementary school beyond New ES #44, but the model shows these conditions in the second decade of the projection. The standing yield model will show a more gradual growing enrollment and will not call for a second future elementary school. Conditions should be monitored to watch for stronger trends but our present capital plan and feasible redistricting serve the likely impact of the new proposal. Experience has shown that having a variety of viable sites in the land bank is extremely important since land will only grow more scarce and expensive. The HCPSS model's indication for a second school can be supported by the addition of a property sized for an elementary school to the land bank. The Columbia School Study recommends the site in Clary's Forest.

Analysis – Middle

Replacement of Wilde Lake MS, a project that is scheduled to open in 2017, is identified by the feasibility study as a key feature of the capital improvement plan. The new school is planned to be 293 seats larger than the existing one, and will stay within target utilization until 2024, based on the current projection. The Feasibility Study identified intermittent crowding at Harper's Choice MS but only in the latter years and suggested monitoring for future relocatable classroom consideration.

The preliminary enrollment analysis of the impact based on the new proposal (attachment 3) shows crowding of the Wilde Lake MS replacement after 2024. The FY 2017 proposed capital budget shows systemic renovation of Harper's Choice MS starting in FY 2022 which suggests the project would complete in August of 2023. It is not uncommon to include swing space in renovations. Since program area will be needed and construction will be phased, some additional classrooms can facilitate the project and provide additional capacity. If Harper's Choice MS were expanded in a renovation and if Wilde Lake MS replacement school were overcrowded, the capacity could facilitate redistricting. Other capacity may still remain at Clarksville MS at that time.

Analysis – High

The Columbia West Region high school is Wilde Lake HS. The projection for this school remains (with the approved 5,500 units) remains between 90–110 percent utilization until 2027. This projection models the effect of the Columbia Town Center development. The preliminary enrollment analysis of the impact based on the new proposal (attachment 3) shows Wilde Lake HS will exceed 110% utilization after 2020. The school was replaced in 1996 and does not yet qualify for systemic renovation where additional capacity could be included in the project. The interim measure would be installation of temporary capacity.

Conclusion

Projected school capacity levels would be insufficient to accommodate the additional student enrollment that would result from the total 6,750 new housing units. At the elementary level, the HCPSS model indicates we may need a second new 600-seat elementary school. Funding for this school is not presently budgeted. At the middle school level, capacity is needed above and beyond the larger capacity of the replacement Wilde Lake MS. Funding additional capacity along with the with the renovation of Harper's Choice MS, a likely way to provide this capacity, is not presently budgeted. At the high school level, capacity is needed above and beyond the present capacity of Wilde Lake HS. Funding an addition is not presently budgeted. The HCPSS model shows most of these conditions in the second decade of the projection.

With another model showing more modest growth, conditions should be monitored and viable sites should be added to the land bank. The development agreements of Downtown Columbia only offer land as an option and the available sites are smaller than a middle or high school site. The original study evaluated alternatives like the provision of office or programmatic space within Downtown Columbia. The Board may continue to pursue alternatives in light of the proposed development.

Key Terms

Some terms in the discussion of this proposal may not be familiar so they are defined below:

Absorption schedule – An estimate of the number of residential units that will be constructed per year. This is based upon an estimate of how the local housing market can absorb the proposed development from a separate market study. The schedule has been used to model enrollment scenarios.

CEPPA - Timed or triggered commitments made with Downtown Columbia approval called Community Enhancements, Programs, and Public Amenities (CEPPAs). The CEPPA relevant to the school system is #17 which states, "GGP shall, if deemed necessary by the Board of Education, reserve an adequate school site or provide an equivalent location within Downtown Columbia." This CEPPA must be satisfied by the Downtown Columbia developer prior to the approval of the site development plan for the 1,375th new residential unit (25 percent of the total 5,500 units).

Cohort Survival Projection – An enrollment projection that factors the succession of cohorts through the grades. Measured historical ratios for the succession each grade to the next model increase or decrease the cohort. The HCPSS model uses this method with other components.

Housing Projection – The HCPSS enrollment projection depends upon an annual projection of housing by the Department of Planning and Zoning. Regulatory factors like the Adequate Public Facility Ordinance are also a factor.

Pupil Yield Rate – A rate calculated from the actual number of students coming from a type of housing. Yield rates can be K-12 or broken out by level.

Residential Units – Dwelling units. Commonly referred to homes, apartments or condominiums.

- a. **High rise residential** – Multi-family residential structures more than four stories in height.
- b. **Low rise residential** – Multi-family residential structures up to four stories in height.
- c. **Multi-family residential** – A residential building with multiple units which are either rented or owned as condominiums. The HCPSS enrollment projection groups all apartments and condominiums together for yield calculations.
- d. **Single-family residential** – One family residential units, either detached or townhouse. Pupil yield rates are often higher from groups of this type of home than multi-family residential units. None of these types of units are proposed in Downtown Columbia.

Standing Yield Projection – An enrollment projection made by multiplying an anticipated standing yield by the number of anticipated units. This method has been used by a consultant to the DPZ.

Standing Yield Rate – A pupil yield rate for a specific type of housing (for example, high rise multi-family). The Office of School Planning measures standing yield rates for existing housing by school attendance area and countywide. Average rates are used as a component of the enrollment projection.



**FAIRFAX COUNTY
PUBLIC SCHOOLS**

Department of Facilities and Transportation Services

8115 Gatehouse Road, Suite 3400
Falls Church, Virginia 22042-1203

November 20, 2014

TO: Peter F. Murphy, Chairman
Fairfax County Planning Commission

Fred Selden, Director
Fairfax County Department of Planning and Zoning

Barbara C. Berlin, Director
Fairfax County Zoning Evaluation Division, DPZ

FROM: Jeffrey Platenberg, Assistant Superintendent
Fairfax County Public Schools

SUBJECT: School Impact Proffer Formula and Student Yield Ratio Update

Periodically, the Office of Facilities Planning Services reviews and updates the suggested per student proffer contribution and student yield ratios. The per student proffer contribution is based on the FCPS Public Facilities Impact Formula and the related implementation of the Fairfax County Comprehensive Plan, Public Facilities Residential Development Criterion, that became effective on January 7, 2003. Pursuant to the implementation of the Public Facilities Criterion, it was anticipated that periodic updates and adjustments to the methodology be provided in order to reflect changes in student yield ratios by unit type and changes in capital construction costs. This includes changes to school capacity, changes in construction costs for elementary, middle, and high school buildings and modular construction costs. The methodology does exclude costs associated with land, fees, and equipment.

Using the adopted methodology, the suggested per student proffer contribution has increased from \$10,825 to \$11,749. The increase is primarily attributable to increasing construction costs. FCPS recommends that the new proffer amount of \$11,749 become effective for all residential rezoning applications accepted on or after December 1, 2014. For ease of reference, the proffer formula and calculations are attached.

In addition to the change in the suggested per student proffer contribution, the student yield ratios used to calculate the suggested proffer contribution have changed. This change reflects the current ratios generated by matching September 30, 2013, student data to 2013 housing counts by unit type. These updated ratios will be used to calculate the potential student yield for new residential development and the suggested school cash proffer amount beginning December 1, 2014.

The updated countywide student yield ratios from 2013-14 are as follows:

Single Family Detached	.270 Elementary	Low-rise Multi-family (≤ 4 stories)	.194 Elementary
	.085 Middle		.046 Middle
	<u>.175 High</u>		<u>.085 High</u>
	.530 Total		.325 Total
Single Family Attached (Townhouse)	.252 Elementary	Mid/High-rise Multi-family (> 4 stories)	.056 Elementary
	.062 Middle		.016 Middle
	<u>.127 High</u>		<u>.028 High</u>
	.441 Total		.100 Total

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To generate the new student yield ratios for school year 2013-14, housing information was obtained from the Integrated Parcel Life-Cycle System (IPLS) data layers that contain housing information by unit type from Fairfax County's Department of Neighborhood and Community Services. The City of Fairfax also provided GIS parcel data along with associated dwelling information. Similarly, Fort Belvoir's GIS Division provided housing data for the residential villages on post. Individual student addresses from the FCPS student information system were then matched to specific dwelling types. The 2013-14 student yield ratios for Low-rise Multi-family saw the biggest change over the 2012-13 ratios. For reference, historic student yield ratios are attached.

Since the methodology used to derive the proffer contribution is based, in part, on current construction costs, and that actual development and construction may not begin for some period of time after rezoning approval, FCPS continues to recommend that an escalation clause be included as part of any monetary school proffer contribution. Many developers have provided appropriate proffer language to address the potential changes in the adopted proffer formula so that when the proffer trigger is reached, the developer contribution is based on the then current student yield ratios and/or contribution formula and suggested proffer amount, whichever is the greater.

If you have any questions, please feel free to contact Kevin Sneed, Special Projects Administrator, Capital Projects and Planning, 571-423-2280.

JP/ks/gjb

Attachments (Proffer Calculation, Historic Proffer and Ratio Trends, Ratios by School Level)

cc: Edward Long, County Executive, Fairfax County
Karen Garza, Superintendent, FCPS
FCPS School Board Members
Susan Quinn, Chief Operating Officer
Kevin Sneed, Special Projects Administrator, Capital Projects and Planning
Warren Jenkins, Director, Administrative Services
Aimee Holleb, Assistant Director, Facilities Planning Services

Attachment 1: Proffer Contribution Calculation (November 2014)

Building Construction Costs

Construction costs for ES, MS & HS:

$\frac{\$207 \times 99,937 \text{ sf}}{975 \text{ capacity}} = \$21,217 \text{ cost per ES student}$

$\frac{\$213 \times 176,824 \text{ sf}}{1,250 \text{ capacity}} = \$30,130 \text{ cost per MS student}$

$\frac{\$222 \times 377,457 \text{ sf}}{2,500 \text{ capacity}} = \$33,518 \text{ cost per HS student}$

Weighted average = **\$24,040** cost per student

Adjustment - Modular Construction Cost

Construction cost offset by modular:

\$24,040 (Weighted average)
 $\times 0.041$ (School capacity provided by modular multiplier)
 = **\$985**

Construction cost of modular:

\$985 (Construction cost offset by modular)
 $\times 0.45$ (Cost of modular multiplier)
 = **\$443**

Cost per student after modular adjustment:

\$24,040 (weighted average)
 - **\$985** (Construction cost offset by modular)
 + **\$443** (Construction cost of modular)
 = **\$23,498**

Adjustment - Level of Service

Cost per student after level of service adjustment:

\$23,498 (Cost per student after modular adjustment)
 $\times 0.5$ (LOS multiplier)
 = **\$11,749 (Recommended Contribution)**

Explanation for "Weighted average":

	Cost per student		# of schools	Total
ES	\$21,217	x	140	2,970,380
MS	\$30,130	x	26	783,380
HS	\$33,518	x	25	837,950
Total			191	4,591,710

$4,591,710 / 191 = \mathbf{24,040}$ weighted average cost per student

Explanation for "School capacity provided by modular multiplier":

Total Program Capacity

ES, MS, HS	185,756
Modular	7,697

$7,697 / 185,756 = \mathbf{0.041}$ Modular Capacity Multiplier

Explanation for "Cost of modular multiplier":

Cost of modular construction is 45% of what permanent construction costs = **0.45**

Explanation for "LOS multiplier":

Average age of buildings/Life expectancy of buildings.
 $25/50 = \mathbf{0.5}$

Attachment 2: Historic County-wide Student Yield Ratios and Proffer Contribution (Updated November, 2014)

Letter Date	School Year Student Data	Effective Date	Proffer (1)	SFD Ratio (2)	SFA Ratio (2)	MF(LR) Ratio (2)	MF(MR/HR) Ratio (2)	Notes
June 13, 2002	2001-2002	January 7, 2003	\$ 7,500	0.473	0.372	0.227	0.102	Baseline for Public Facilities Res. Dev. Criteria
May 22, 2006	2005-2006	June 1, 2006	\$ 11,630	0.479	0.356	0.199	0.076	
June 28, 2007	2006-2007	July 1, 2007	\$ 12,400	0.480	0.348	0.193	0.078	
October 15, 2008	2007-2008	November 1, 2008	\$ 11,548	No Change to Ratios (Transition from DIT to FTS)				
July 22, 2009	2008-2009	September 1, 2009	\$ 9,378	0.531	0.379	0.234	0.087	Facilities Planning Begins Calculation of Ratios
August 24, 2012	2011-2012	September 1, 2012	\$ 10,488	0.531	0.440	0.291	0.110	
September 18, 2013	2012-2013	September 1, 2013	\$ 10,825	0.536	0.430	0.302	0.106	
November 20, 2014	2013-2014	December 1, 2014	\$ 11,749	0.530	0.441	0.325	0.100	

1) Proffer is per-student contribution recommendation

2) Ratios are county-wide averages

Attachment 3: Comparison of Student Yield Ratios By School Level (Updated November, 2014)

	2001-02	2005-06	2006-07	2008-09	2011-12	2012-13	2013-14
Single Family Detached							
Elementary	0.244	0.239	0.239	0.266	0.268	0.273	0.270
Middle	0.070	0.070	0.069	0.084	0.085	0.086	0.085
High	0.159	0.170	0.172	0.181	0.178	0.177	0.175
Total	0.473	0.479	0.480	0.531	0.531	0.536	0.530
Single Family Attached (townhouse)							
Elementary	0.210	0.194	0.190	0.204	0.249	0.243	0.252
Middle	0.053	0.052	0.050	0.057	0.063	0.060	0.062
High	0.109	0.110	0.108	0.118	0.128	0.127	0.127
Total	0.372	0.356	0.348	0.379	0.440	0.430	0.441
Low Rise Multi-family (≤ 4 stories)							
Elementary	0.137	0.114	0.109	0.136	0.173	0.181	0.194
Middle	0.030	0.026	0.025	0.032	0.040	0.042	0.046
High	0.060	0.059	0.059	0.066	0.078	0.079	0.085
Total	0.227	0.199	0.193	0.234	0.291	0.302	0.325
Mid/High-rise Multi-family (> 4 stories)							
Elementary	0.063	0.042	0.043	0.047	0.059	0.059	0.056
Middle	0.011	0.010	0.011	0.013	0.019	0.017	0.016
High	0.028	0.024	0.024	0.027	0.032	0.030	0.028
Total	0.102	0.076	0.078	0.087	0.110	0.106	0.100

Source Data for 2013-14:

Fairfax County GIS Department: January 1st 2013 Housing Unit Data (IPLS)

Fairfax City GIS Office: January 1st 2011 Housing Unit Data

FCPS DIT: September 30th 2013 Student Data (SIS)

Updated: 7/30/2014

Montgomery County Student Generation Rates for Housing Types

December 6, 2013

NORTH				
Housing Type	Factors (number of students generated per unit)			
	Elementary	Middle	High	Total K-12
Single Family	0.416	0.175	0.213	0.804
Townhouse	0.242	0.091	0.122	0.455
Multi-Family Low to Mid-rise (4 or fewer floors)	0.160	0.057	0.081	0.298
Multi-Family High-rise (5 or more floors)	0.077	0.030	0.038	0.145
SOUTHWEST				
Housing Type	Factors (number of students generated per unit)			
	Elementary	Middle	High	Total K-12
Single Family	0.323	0.132	0.153	0.608
Townhouse	0.166	0.072	0.099	0.337
Multi-Family Low to Mid-rise (4 or fewer floors)	0.075	0.031	0.047	0.153
Multi-Family High-rise (5 or more floors)	0.042	0.017	0.023	0.082
EAST				
Housing Type	Factors (number of students generated per unit)			
	Elementary	Middle	High	Total K-12
Single Family	0.233	0.124	0.196	0.553
Townhouse	0.178	0.062	0.101	0.341
Multi-Family Low to Mid-rise (4 or fewer floors)	0.175	0.068	0.090	0.333
Multi-Family High-rise (5 or more floors)	0.074	0.032	0.043	0.149
COUNTYWIDE HOUSING STUDENT YIELD FACTORS				
Housing Type	Factors (number of students generated per unit)			
	Elementary	Middle	High	Total K-12
Single Family	0.357	0.153	0.190	0.700
Townhouse	0.214	0.082	0.113	0.409
Multi-Family Low to Mid-rise (4 or fewer floors)	0.146	0.055	0.077	0.278
Multi-Family High-rise (5 or more floors)	0.060	0.025	0.033	0.118

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

NORTH includes general "upcounty" areas including: Clarksburg, Damascus, Gaithersburg, Magruder, Northwest, Poolesville, Quince Orchard, Seneca Valley, Sherwood, and Watkins Mill clusters.

SOUTHWEST includes: Bethesda-Chevy Chase, Churchill, Walter Johnson, Richard Montgomery, Rockville, Whitman, and Wootton clusters.

EAST includes: Downcounty Consortium (Blair, Einstein, Kennedy, Northwood, and Wheaton, and Northeast Consortium (Blake, Paint Branch and Springbrook), clusters.



Howard County

Memorandum

DEPARTMENT OF PLANNING AND ZONING

To: Howard County Council

From: Jeff Bronow, Chief of Research Division, DPZ

Date: November 2, 2015

Subject: Updated Student Yield Scenarios for Fiscal Impact Analysis of Downtown Columbia Joint Housing Recommendations

A question was raised on the difference between the total number of students projected as a result of future development in Downtown Columbia shown in the fiscal study conducted by MuniCap dated September 17, 2015 and in the October 9, 2015 memorandum prepared by the Howard County Public School System (HCPSS). Both of these items were presented during the October 13th County Council work session. The County Council has also requested that a range of student yields be tested. This memorandum responds to the question raised and outlines the scenarios to be tested.

The yields used in both studies (MuniCap's fiscal and the HCPSS memorandum) were based on recent data for the existing apartment units in Downtown Columbia shown in the table on the top of the next page—0.057 for elementary school, 0.028 for middle school, and 0.036 for high school, for a total of 0.121 students per unit. These standing yields were provided to MuniCap from the DPZ Research Division in consultation with the HCPSS Office of Planning, who agreed that these yields were reasonable given they reflect actual yields from apartments in Downtown Columbia now.

It was also stated during the October 13th work session that these yields are *conservative* given that high-rise apartment buildings 5-stories and above to be built in Downtown Columbia (with higher average rents and many studio and 1-bedroom units) will likely generate fewer numbers of students than the existing garden-style apartments. It was stated that the original fiscal impact study conducted on the original Downtown Columbia Plan in 2009 tested a low and high scenario—the low scenario used 0.085 total students per unit (all grades) and a high of 0.167 total students per unit (all grades). This low scenario of 0.085 was based on existing yields in Downtown Columbia at that time *including* condominiums (which generally generate lower yields). That fiscal study assumed 40% condos and 60% rental apartments, so including condos in the yield determination was deemed reasonable. In addition, at that time planners at Fairfax County Schools were contacted to see what they used for yield estimates for buildings 5-stories and above—they used a yield of 0.087, very similar to the existing yields in Downtown Columbia. The high scenario using 0.167 was based on countywide averages for newly constructed rental and condo units in Howard County. Having low and high scenarios is helpful to provide a range of fiscal impacts given the uncertainty of what future yields will actually be. Note that the 0.121 used in MuniCap's recent fiscal study is just about right in the middle of the 0.085 to 0.167 range that had been used in the 2009 fiscal study for the proposed Downtown Columbia Plan.

Columbia Town Center - Standing Student Yields (5 year averages)

Name/Description	Type	Units	Year	Students				Yields			
				ES	MS	HS	Total	ES	MS	HS	Overall
Archstone <u>Rentals</u>	Rental Apt	531	9/30/07	30	14	13	57	0.056	0.026	0.024	0.107
		531	9/30/08	31	11	15	57	0.058	0.021	0.028	0.107
		531	9/30/09	39	16	21	76	0.073	0.030	0.040	0.143
		531	9/30/10	43	19	27	89	0.081	0.036	0.051	0.168
		531	9/30/11	31	19	27	77	0.058	0.036	0.051	0.145
			Average	35	16	21	71	0.066	0.030	0.039	0.134
Gramercy <u>Rentals</u>	Rental Apt	210	9/30/07	12	5	2	19	0.057	0.024	0.010	0.090
		210	9/30/08	5	5	4	14	0.024	0.024	0.019	0.067
		210	9/30/09	5	5	8	18	0.024	0.024	0.038	0.086
		210	9/30/10	8	3	7	18	0.038	0.014	0.033	0.086
		210	9/30/11	9	6	10	25	0.043	0.029	0.048	0.119
			Average	8	5	6	19	0.037	0.023	0.030	0.090
TOTAL RENTALS		741	9/30/07	42	19	15	76	0.057	0.026	0.020	0.103
		741	9/30/08	36	16	19	71	0.049	0.022	0.026	0.096
		741	9/30/09	44	21	29	94	0.059	0.028	0.039	0.127
		741	9/30/10	51	22	34	107	0.069	0.030	0.046	0.144
		741	9/30/11	40	25	37	102	0.054	0.034	0.050	0.138
			Average	43	21	27	90	0.057	0.028	0.036	0.121
Whitney Town Center <u>Condos</u>	Condo Apt	108	9/30/07	1	1	0	2	0.009	0.009	0.000	0.019
		108	9/30/08	1	1	1	3	0.009	0.009	0.009	0.028
		108	9/30/09	0	1	3	4	0.000	0.009	0.028	0.037
		108	9/30/10	0	2	2	4	0.000	0.019	0.019	0.037
		108	9/30/11	0	2	5	7	0.000	0.019	0.046	0.065
			Average	0	1	2	4	0.004	0.013	0.020	0.037
Lakeside Town Center <u>Condos</u> (New Ryland Condos)	Condo Apt	48	9/30/07	0	0	1	1	0.000	0.000	0.021	0.021
		48	9/30/08	1	0	1	2	0.021	0.000	0.021	0.042
		48	9/30/09	0	0	1	1	0.000	0.000	0.021	0.021
		48	9/30/10	2	0	1	3	0.042	0.000	0.021	0.063
		48	9/30/11	0	0	1	1	0.000	0.000	0.021	0.021
			Average	1	0	1	2	0.013	0.000	0.021	0.033
TOTAL CONDOS		156	9/30/07	1	1	1	3	0.006	0.006	0.006	0.019
		156	9/30/08	2	1	2	5	0.013	0.006	0.013	0.032
		156	9/30/09	0	1	4	5	0.000	0.006	0.026	0.032
		156	9/30/10	2	2	3	7	0.013	0.013	0.019	0.045
		156	9/30/11	0	2	6	8	0.000	0.013	0.038	0.051
			Average	1	1	3	6	0.006	0.009	0.021	0.036
TOTAL CONDOS AND RENTALS		897	9/30/07	43	20	16	79	0.048	0.022	0.018	0.088
		897	9/30/08	38	17	21	76	0.042	0.019	0.023	0.085
		897	9/30/09	44	22	33	99	0.049	0.025	0.037	0.110
		897	9/30/10	53	24	37	114	0.059	0.027	0.041	0.127
		897	9/30/11	40	27	43	110	0.045	0.030	0.048	0.123
			Average	44	22	30	96	0.049	0.025	0.033	0.107

Source: Howard County Public School System - official September 30 student counts.

The table below summarizes the number of students projected using the 0.121 yield rate (0.057 for elementary, 0.028 for middle, and 0.036 for high) in MuniCap's September 17, 2015 fiscal study for the total 6,750 new housing units projected in Downtown Columbia assuming buildout of the joint housing recommendation (5,500 original units in the Downtown Columbia Plan plus the 1,250 addition units resulting from the joint housing recommendation including the Columbia Flier building) compared to the total students projected in the October 9, 2015 memorandum from the HCPSS.

	Total Students at Buildout	
	Fiscal Study (1)	HCPSS (2)
Elementary School	349	890
Middle School	171	600
High School	221	710
Total	741	2,200

- (1) September 17, 2015 fiscal study (MuniCap). Note that MuniCap applied yields to a 90% occupancy rate for the rental units.
- (2) Determined from charts in October 9, 2015 HCPSS memorandum subtracting buildout student totals from the existing base student totals.

The same yields were used in both studies, so why the large discrepancy? The reason is due to the fact that the HCPSS did not maintain the standing yield of 0.121 students per housing unit over time for the new units projected in Downtown Columbia. Rather they used their typical model for feasibility planning that includes the following components: new construction yields (which they applied the standing yield rate to), cohort survival ratios, apartment turnover impacts, birth to kindergarten ratios, estimated preschool move-ins, and net out-of-district impacts. Their model also included existing development already on the ground. This methodology using all these components is currently used by HCPSS for all school districts in the county and is useful to account for existing neighborhood housing turnover—that is, in neighborhoods where there may not be a lot of new construction relative to existing housing, which is typically the norm. Furthermore, it tends to work better for short-term (1 to 2 years) to mid-term (3 to 5 years) capital budget-related impacts. It doesn't work as well when trying to analyze the direct impacts due to a single large development over a longer time-frame, such as what is proposed in Downtown Columbia. For that type of analysis it is best to utilize a standing yield methodology. After observing the results of the two methodologies and further discussions with DPZ planning staff and MuniCap, HCPSS planning staff agreed that the standing yield methodology is the more appropriate methodology to use for the Downtown Columbia analysis.

As suggested by Council members during the October 13th County Council work session it would be prudent to evaluate a range of yields for fiscal impact sensitivity testing. As indicated in the original 2009 fiscal analysis for the Downtown Columbia Plan, studying a range of yields is important because:

...the economy, societal preferences, and trends can certainly change...For example, it can be argued that as the housing supply becomes more limited as the County approaches “build-out,” more pressure will be put on existing and new housing (including multi-family housing) to hold more students given the excellent reputation of the HCPSS. Thus, testing a scenario with higher student yields is prudent, particularly given education takes such a large portion of the operating and capital budgets in Howard County.

The table below summarizes the range of yields to be tested in MuniCap's revised fiscal impact analysis utilizing a standing yield methodology. The expected scenario is based on recent student yield data acquired from Montgomery County. (Please see attached memo from Montgomery County.) Note that the 0.118 countywide average yield rate for multi-family high-rise buildings (5-stories and above) is within 2% of the 0.121 that had been used in MuniCap's September 17th fiscal impact analysis. Since Howard County does not currently have much in the way of high-rise multi-family buildings (5-stories and above), Montgomery County yields were used as a proxy. For a higher yield scenario Howard Countywide 5-year average yields for newly constructed multi-family units were used.

	Student Yields	
	Expected (1)	County Avg (2)
Elementary School	0.060	0.101
Middle School	0.025	0.045
High School	0.033	0.036
Total	0.118	0.182

(1) Based on Montgomery County student generation rates for multi-family high-rise units 5-stories or more, 2013 analysis. (rental and condo apts.)

(2) Based on 2009 to 2014 average Howard Countywide yields from newly constructed multi-family units. (rental and condo apts.)

As another point of reference, Fairfax County Public Schools were also contacted to learn what yield rates they use. (See attached memo from Fairfax County.) Yield rates in Fairfax for multi-family buildings 5-stories and above are slightly less than those in Montgomery County, ranging from 0.087 to 0.110 students per unit over a seven year sample, with the most recent year being 2013-2014. These yields in Fairfax are used to determine per student proffer dollar contributions that are commonly collected from developers as a condition of rezoning approval. Such proffers are a common practice in Virginia.

It is important to note that the expected yield scenario in this case should be considered the *likely* outcome given the type of housing planned in Downtown Columbia, and the countywide average yield scenario should be considered a high end-point for fiscal impact sensitivity testing—that is, a risk assessment to help garner an understanding of how higher yields may impact the fiscal results. The units in Downtown Columbia will likely consist of a large proportion of studio and one-bedroom units in high-rise buildings, and current empirical evidence shows that this generates lower yields as seen in both Montgomery and Fairfax Counties. The table below shows the expected mix of future units based on recent information provided by Howard Hughes. This unit mix, with 50% of the total planned to be studio and 1-bedroom units and another 40% 2-bedroom units. Only 10% are expected to be 3-bedroom units.

Unit Type	Percent Mix
Studio	15%
1-bedroom	35%
2-bedroom	40%
3-bedroom	10%

Source: Howard Hughes

The tables below summarize the total students generated from the original Downtown Columbia plan of 5,500 units and the joint housing recommendation that would result in 6,750 units for both the expected and the countywide average yield scenarios. These same scenarios will be incorporated into MuniCap's model to test the fiscal impacts of this range.

	Student Totals - 5,500 units	
	Expected	County Avg
Elementary School	330	556
Middle School	138	248
High School	182	198
Total Students	649	1,001

	Student Totals - 6,750 units	
	Expected	County Avg
Elementary School	405	682
Middle School	169	304
High School	223	243
Total Students	797	1,229



Howard County

Memorandum

DEPARTMENT OF PLANNING AND ZONING

To: Howard County Council, Carl Delorenzo

From: Jeff Bronow, Chief of Research Division, DPZ

Date: July 25, 2016

Subject: Updated Student Yield Estimates with 6,400 Total Units in Downtown

The tables below summarize estimated number of new students resulting from 6,750 new housing units in Downtown. This came from the November 2, 2015 memo to the County Council for a work session on the Joint Recommendations held at that time. At that time, the Joint Recommendations were considering 6,750 total units (1,250 units over the 5,500). This number had been revised down to only 900 additional units bringing the total to 6,400 units. The table on the top of the next page shows the expected students results assuming 6,400 units. The 350 less units (1,250 minus 900) is expected to yield 42 less students. (797 minus 755).

	Student Yields	
	Expected (1)	County Avg (2)
Elementary School	0.060	0.101
Middle School	0.025	0.045
High School	0.033	0.036
Total	0.118	0.182

- (1) Based on Montgomery County student generation rates for multi-family high-rise units 5-stories or more, 2013 analysis. (rental and condo apts.)
- (2) Based on 2009 to 2014 average Howard Countywide yields from newly constructed multi-family units. (rental and condo apts.)

	Student Totals - 5,500 units	
	Expected	County Avg
Elementary School	330	556
Middle School	138	248
High School	182	198
Total Students	649	1,001

	Student Totals - 6,750 units	
	Expected	County Avg
Elementary School	405	682
Middle School	169	304
High School	223	243
Total Students	797	1,229

	Student Totals - 5,500 units	
	Expected	County Avg
Elementary School	330	556
Middle School	138	248
High School	182	198
Total Students	649	1,001

	Student Totals - 6,400 units	
	Expected	County Avg
Elementary School	384	646
Middle School	160	288
High School	211	230
Total Students	755	1,165

As additional information, DPZ also received the following from the HCPSS on May 25, 2016 in response to a question of how many students are currently in the 418 unit Metropolitan, which is fully occupied (less normal expected apartment vacancy rates). The total yield for all school levels is .03 students per unit. This is significantly lower—almost 3.5 times lower— than the Expected Yield used in the analysis above.

Having said that, the Metropolitan was only recently built and leased up. It is likely that more students from this apartment complex will attend the HCPSS this fall, as many families may have moved in mid-school year last year. These yields will be reviewed again once the HCPSS's 2016 September 30 enrollment counts are released. Any updated empirical yield findings can be used to update the Downtown Columbia Schools Feasibility study as called for in the Downtown Plan.

Student Yield from the Metropolitan in Downtown Columbia

Total Apartment Units:	380		
	Students	Yield	
Elementary Students	5	0.0132	
Middle Students	2	0.0053	
High Students	6	0.0158	
Total	13	0.0342	

Source: HCPSS, May 25, 2016