School Impact Fee Study

Submitted to:

Harford County, Maryland

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Prepared by:

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EXECUTIVE SUMMARY

Harford County, Maryland, retained TischlerBise, Inc. to update the school impact fees imposed on new residential development to meet the new demands generated for additional classroom space in the County. Harford County established school impact fees in 2005. This study presents the methodology and calculations used to generate current levels of service and update maximum supportable school impact fees.

Impact fees are one-time payments used to construct system improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs. By law, impact fees can only be used for capital improvements, not operating or maintenance costs. Impact fees are subject to legal standards, which require fulfillment of three key elements: need, benefit, and proportionality.

1. First, to justify a fee for public facilities, it must be demonstrated that new development will create a need for capital improvements.

2. Second, new development must derive a benefit from the payment of the fees (i.e., in the form of public facilities constructed within a reasonable timeframe).

3. Third, the fee paid by a particular type of development should not exceed its proportional share of the capital cost for system improvements.

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for the levels of service and fees. Local demographic data and improvement costs were used to identify specific capital costs attributable to growth. This report includes summary tables indicating the specific factors, referred to as level-of-service standards, used to derive the school impact fees.

LEGAL BACKGROUND

Authorizing Legislation

During the 2004 Legislative Session, the Maryland General Assembly amended Article 24, Section 9-10 A-01 of the Annotated Code of Maryland by enacting the Harford County School Construction Act of 2004. In general, the Act provides enabling Legislation for the Harford County Council to fix, impose and collect by ordinance, a School Development Impact Fee. The authorizing legislation also stipulates that Harford County cannot charge a school impact fee higher than $10,000.

Impact Fee Districts and Benefits

Planning practice generally includes impact fee districts from which impact fees are collected and spent, based on the geography of the benefits that result from the expansion of the particular infrastructure category. These districts define where impact fee revenue collected in the district can be used to ensure that the person who pays the fee receives a proportionate benefit and may include the entirety of a jurisdiction or a portion thereof. Indeed, the *Dabbs* court noted "[t]he County has been divided into impact fee districts and impact fees generally must be used for capital improvements within the 'district from which they are collected.'" *Dabbs v. Anne Arundel County*, 157 A.3d 381, 384 (Md. App. 2017).

However, at least one court cited the failure to identify benefited properties sufficiently as a deficiency in Anne Arundel County's practice, noting when it had extended certain expenditure periods the County "failed to identify the properties that would be directly benefitted by the planned improvements, as required by AACC § 17-11-210(e). The County issued similar extension decisions with the same deficiencies in the years following." *Halle Development, Inc. v. Anne Arundel County* at 5 (Md. App. 2017) (unreported).

In *Herron v. Mayor and City Council of Annapolis*, 388 F.Supp.2d 565 (D. Md. 2005), a case regarding the collection of Anne Arundel County's impact fees in the City of Annapolis, the court addressed a property owner's claim that an allocation of school impact fees collected within the City was impermissible where it was used for three different high school feeder systems in the County system (out of seven school impact fee districts in Anne Arundel County), which included some, but not exclusively all, of the students in the City. The court analyzed the district allocations as follows:

> Although impact fees from Annapolis residents may have been spent outside the Annapolis High Feeder System-and only some Annapolis residents attend the schools benefitted-such an arrangement may be reasonable. The County must have some flexibility in the administration of its school system and, the decision to spend funds to benefit three feeder systems does not appear to offend the Constitutional requirement of "rough proportionality."

Id. at 571. Therefore, as with eligible expenditures, it appears the courts will leave it to the discretion of local government to establish appropriate impact fee districts, based on the nature of the public facility and its operational range of benefit.

Rational Nexus/Rough Proportionality

The impact fee practice and the cases addressing it, have established a two-pronged "test" to ensure those paying fees bear no more than their proportionate share of the burden their development puts on infrastructure and, conversely, receive a proportionate benefit from the expansion of infrastructure resulting from impact fee expenditures. This framework is referred to by many names, including dual rational nexus, proportionality, fair share, and others.

It appears Harford County has followed this framework as well, through its Ordinance, in part by maintaining earmarked County funds and defined impact fee districts. The court have interpreted these connections to be within the authority of the enabling legislation, as discussed in the section on Impact Fee Funds, above. *See Dabbs v. Anne Arundel County*, 157 A.3d 381 (Md. App. 2017).

Nonetheless, a line of cases in Maryland have referred to impact fees as "impact taxes," which may implicate the outer limits of authority to adopt an impact fee framework. In any case, it certainly introduces a lack of clarity for the established impact fee practitioner. That discussion follows.

Rational Nexus / Rough Proportionality Analysis

In *Dabbs v. Anne Arundel County*, 182 A.3d 798 (Md. 2018), the Maryland Court of Appeals held that the rough proportionality/rational nexus standards did not apply to the Anne Arundel County Impact Fee Ordinance. The court's holding, however, reflected an ongoing inconsistency among the courts nationally

regarding impact fees and exactions, in general. While it is important to monitor and be aware of this developing aspect of takings law, a conservative impact fee practitioner would prepare a Maryland impact fee study with the rough proportionality/rational nexus standards in mind.

In general, many exactions are subject to what is commonly referred to as the "rational nexus/rough proportionality" test adopted in a line of Supreme Court cases, including *Dolan v. City of Tigard* , 512 U.S. 374 (1994) and *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987), which dealt with exactions of property made as a condition of individual development application approvals. Then, in 2013, in *Koontz v. St. Johns River Water Management. District*, 570 U.S. 595 (2013), the U.S. Supreme Court appeared to expand this level of review to monetary exactions, again in the context of a particular, "ad hoc" development approval.

In fact, in *Dabbs*, the court held *Koontz (*and *Nollan/Dolan)* did not apply to Anne Arundel County's impact fees since they are adopted and imposed legislatively, not *ad hoc* as a discretionary condition of development approval. 182 A.3d at 807-14. Therefore, the court distinguished the Anne Arundel County Impact Fee Ordinance because it "applied on a generalized district-wide basis, making no determination as to whether an actual permit will issue to a payor individual with a property interest," 182 A.3d at 811, and stated: "[w]e re-affirm our holding in *Waters Landing*, and, thus, conclude that *Koontz* is inapplicable to the Impact Fee Ordinance in this case. Impact fees imposed by legislation applicable on an area-wide basis are *not* subject to *Nollan* and *Dolan* scrutiny. *Id.* at 812-13 (emphasis in original). In the same case, the Special Court of Appeals reached a similar conclusion for similar reasons. *See Dabbs v. Anne Arundel County*, 157 A.3d 381 (Md. App. 2017).

Nonetheless, in the *Herron* case, 388 F.Supp.2d 565 (D. Md. 2005), which preceded this holding in *Dabbs*, the court found that Anne Arundel County's school impact fee did meet the rough proportionality test, established in the *Nollan* and *Dolan* cases. This illustrates not only the "judicial confusion" the cases since *Nollan* have created, but perhaps too the reality that the principles of proportionality applicable to *ad hoc* and legislative exactions conflate and in practice are the same.

Unfortunately, the purported distinctions between these two approval processes has been further muddied by inconsistent decisions and rationales in the "tax versus fee" line of cases.

LEGAL CONCLUSION AND KEY POINTS

Based on Maryland litigation, TischlerBise can distill some relatively straightforward guidance.

- Harford County is authorized to define what it means by eligible expenditures, within the bounds of the authorizing legislation and the principles of proportionality. The courts appear reluctant to second guess local government on these determinations.

- Similarly, within the bounds of the authorizing legislation and proportionality principles, the County appears to also have reasonable discretion to establish appropriate development impact fee collection and expenditure districts, based on geographical extent and the operational nature of the particular public facility category and its capital improvement plans. Again, it appears that a transparent and logical rationale, consistent with general development impact fee practice, is unlikely to be second guessed by the court.

- While the "rough proportionality" standards of *Nollan*, *Dolan*, and *Koontz*, appear not to apply to legislatively adopted and generally applicable development impact fees, generally-accepted standards of proportionality developed in the development impact fee practice over the last 40 years provide clear guides for an development impact fee ordinance. The cases interpreting a Development Impact Fee Ordinance generally recognize the proportionality concepts that are included in it, and these standards should continue to be applied in updating Harford County's school impact fees. In other words, the applicability of proportionality would apply to development impact fee calculations in Maryland regardless of the applicability of *Nollan, Dolan,* and *Koontz*.

- The mechanism for "encumbering" impact fees collected within the timeframes set forth by the Ordinance should include, at a minimum, a codified definition of the term, consistent with GAAP guidelines and adopted County procedures to a "purchase order or contract [ ] effective as an executory contract," or similar commitment of funds by the County.

- The Impact Fee Ordinance may provide for an administrative appeal procedure, including as to refunds, based on the *Halle Development* Court's holding. Such a procedure would provide an administrative remedy that an application would have to follow before seeking relief from a court.

- The applicable interest rates for refunds of impact fees should be set out clearly by ordinance and be consistent with County accounting protocols. Where relevant and logical to do so, consistency between the study and the implementing ordinance in this respect would be recommended, too.

- The Ordinance should specify categories of persons who may apply for impact fee refunds, and the County should be able to implement refund procedures consistent with and documented through its accounting records.

- Credits (a.k.a. offsets) against development impact fee obligations should be expressly addressed by Ordinance to clarify the conditions and procedures through which credits will and will not be awarded.

CONCEPTUAL IMPACT FEE CALCULATION

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for schools is population growth and the increase in school age children. The second step in the impact fee formula is to determine infrastructure improvement units per service unit, typically called level-of-service (LOS) standards. In keeping with the school example, a common LOS standard is square footage per student. The third step in the impact fee formula is the cost of various infrastructure units. To complete the school example, this part of the formula would establish a cost per square foot for school construction.

METHODOLOGIES AND CREDITS

Impact fees can be calculated by any one of several legitimate methods. The choice of a particular method depends primarily on the service characteristics and planning requirements for each facility type. Each method has advantages and disadvantages in a particular situation, and to some extent can be interchangeable, because each method allocates facility costs in proportion to the needs created by new development.

Reduced to its simplest terms, the process of calculating impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of development impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities. The following paragraphs discuss three basic methods for calculating development impact fees, and how each method can be applied.

Plan-Based Fee Method. The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Facility plans identify needed improvements, and land use plans identify development. In this method, the total cost of relevant facilities is divided by total demand to calculate a cost per unit of demand. Then, the cost per unit of demand is multiplied by the amount of demand per unit of development (e.g., housing units or square feet of building area) in each category to arrive at a cost per specific unit of development (e.g., single family detached unit).

Cost Recovery or Buy-In Fee Method. The rationale for the cost recovery method is that new development is paying for its share of the useful life and remaining capacity of facilities already built or land already purchased from which new growth will benefit. This methodology is often used for systems that were oversized such as sewer and water facilities.

Incremental Expansion Fee Method. The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as square feet per student). This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. The level-of-service standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, the fee revenues would not be for renewal and/or replacement of existing facilities. Rather, revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community.

Credits. Regardless of the methodology, a consideration of credits is integral to the development of a legally valid impact fee methodology. There are two types of credits, each with specific and distinct characteristics, but both of which should be addressed in the calculation of impact fees. The first is a credit due to possible double payment situations. This could occur when contributions are made by the property owner toward the capital costs of the public facility covered by the impact fee. This type of credit is integrated into the impact fee calculation, thus reducing the fee amount. The second is a credit toward

the payment of a fee for dedication of public sites or improvements provided by the developer and for which the facility fee is imposed. This type of credit is addressed in the administration and implementation of an impact fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

IMPACT FEE COMPONENTS

Shown below, Figure 1 summarizes service areas, methodologies, and cost allocation for each infrastructure component.

Figure 1: Proposed Impact Fee Methodologies

Infrastructure Category	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Schools	Harford County	N/A	School Facilities, School Land	N/A	Public School Students

Calculations throughout this report are based on an analysis conducted using Excel software. Results are discussed using one- and two-decimal places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

MAXIMUM SUPPORTABLE IMPACT FEES

Shown below, Figure 2 includes the maximum supportable development impact fees by unit type. These fees represent the highest amount supportable for each residential size threshold. Harford County may adopt fees that are less than the amounts shown. However, a reduction in development impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in levels of service.

Figure 2: Maximum Supportable Residential Impact Fees

Residential Development Impact Fees			
Housing Type	Maximum Supportable	Current Fees	Difference
Single-Family Detached	$12,819	$6,000	$6,819
Townhome	$13,692	$4,200	$9,492
Multifamily	$7,989	$1,200	$6,789
Mobile Home	$10,683	$1,200	$9,483

STUDENT GENERATION RATES AND GROWTH PROJECTIONS

Student Generation Rates

The number of public school students by housing unit type is the best indicator of demand for school facilities. Housing types have varying numbers of public school students and, consequently, a varying demand on school infrastructure and services. Thus, it is important to differentiate between housing types. Harford County provided student generation rates calculated for the following housing types: single family, townhouse, multi-family, and mobile homes. Figure S1 displays the service units for residential land uses. The school impact fees are calculated on a per public school student basis and then converted to public school students per housing unit by type of unit.

Student generation rates are shown with three decimal places, but it is often easier to understand the rates based on the expected number of students from 100 housing units. For example, Harford County Public Schools should expect 100 new townhome housing units to generate approximately 41 public school students (100 units X 0.411 public school students per unit). Continuing the example, those 100 townhome housing units are expected to generate approximately 19 elementary school students (100 units X 0.186 elementary school students per unit), approximately nine middle school students (100 units X 0.93 middle school students per unit), and approximately 13 high school students (100 units X 0.132 high school students per unit).

Figure S1: Student Generation Rates

	Housing Unit Type			
	Single Family	Townhome	Apartment	Mobile Home
Elementary	0.172	0.186	0.127	0.155
Middle	0.090	0.093	0.052	0.070
High	0.123	0.132	0.065	0.097
Total	**0.385**	**0.411**	**0.244**	**0.323**

Source: Harford County Department of Planning and Zoning

Projected Enrollment

TischlerBise calculated projected enrollment using housing unit projections and the student generation rates provided by County staff in Figure S1. Shown below in Figure S2, data provided by County staff indicates that Harford County will add 7,068 housing units in the next 10 years. Of these, 3,354 are expected to be single family housing units, 2,662 are expected to be townhomes, and 1,052 are expected to be multifamily units.

Figure S2: Projected Housing Unit Growth

Additional	23-24	24-25	25-26	26-27	27-28	28-29	33-34	10-Year
Housing Units	Base	1	2	3	4	5	10	Increase
Single Family	0	335	671	1,006	1,342	1,677	3,354	3,354
Townhouse	0	266	532	799	1,065	1,331	2,662	2,662
Multi-Family	0	105	210	316	421	526	1,052	1,052
Total	0	707	1,414	2,120	2,827	3,534	7,068	7,068

As shown below, applying the County's student generation rates to this increase in housing units enrollment increases from 38,106 students in the 2023-2024 school year to 40,749 students in the 2033-2034 school year. This increase of 2,643 students includes 1,205 elementary school students, 605 middle school students, and 833 high school students.

Figure S3: Projected Enrollment

School Level	23-24	24-25	25-26	26-27	27-28	28-29	33-34	10-Year
	Base	1	2	3	4	5	10	Increase
Elementary	17,858	17,979	18,099	18,220	18,340	18,461	19,063	1,205
Middle	8,493	8,553	8,614	8,674	8,735	8,795	9,098	605
High	11,755	11,838	11,922	12,005	12,088	12,171	12,588	833
Total	38,106	38,370	38,635	38,899	39,163	39,427	40,749	2,643

SCHOOL IMPACT FEES

METHODOLOGY

The school impact fees include components for school facilities and school land. The incremental expansion methodology is used for all components.

SERVICE AREA

Harford County Public Schools provide access to public schools throughout the county; therefore, the service area for school impact fees is Harford County.

PROPORTIONATE SHARE

The capital costs for school impact fees are allocated 100 percent to residential development.

LEVEL OF SERVICE AND COST ANALYSIS

This section details the level of service and capital cost per demand unit for each school level.

Elementary School Facilities

The inventory and current levels of service for elementary schools are shown in Figure S4. Harford County Public Schools currently provide 2,335,755 square feet of elementary school space on 662.56 acres of land. Total enrollment in all elementary schools for the 2023-2024 school year is 17,756 students and capacity includes 19,513 student stations. Overall, elementary schools are operating at 91 percent of capacity for the 2023-2024 school year.

Since elementary schools overall are currently operating below capacity, *the level of service standard on which the impact fees are based is calculated using student capacity.* This ensures future development is not charged for a higher level of service than what is currently provided or what is planned to be provided. Using a level of service that is based on student capacity represents the level of service the County currently provides.

Levels of service are shown for elementary school facilities and land at the bottom of Figure S4. Levels of service are calculated by dividing the amount of infrastructure by total capacity. For elementary schools, the existing level of service is 119.70 square feet per student (2,335,755 square feet divided by 19,513 student stations) and 0.034 acres per student (662.56 acres divided by 19,513 student stations).

Figure S4: Existing Level of Service: Elementary Schools

Elementary School	Building Square Feet	Acres	SY 23/24 Enrollment	Total Capacity	Capacity Utilization
Abingdon	91,229	28.70	674	863	78%
Bakerfield	65,691	10.00	452	500	90%
Bel Air	49,748	6.25	514	486	106%
Church Creek	85,801	20.51	722	819	88%
Churchville	52,360	6.46	376	411	91%
Darlington	24,237	7.89	92	157	59%
Deerfield	103,200	20.73	714	788	91%
Dublin	44,385	24.69	216	294	73%
Edgewood	67,341	34.44	415	461	90%
Emmorton	63,000	10.57	556	570	98%
Forest Hill	64,722	8.44	475	530	90%
Forest Lakes	68,971	20.67	420	530	79%
Fountain Green	60,000	12.77	456	548	83%
G. Lisby at Hillsdale	56,295	20.01	516	473	109%
Hall's Cross Roads	63,082	12.73	443	552	80%
Havre de Grace	65,085	11.22	603	542	111%
Hickory	77,958	23.04	664	668	99%
Homestead/Wakefield	115,458	11.57	1,057	920	115%
Jarrettsville	61,275	32.43	476	525	91%
Joppatowne	89,985	16.87	495	663	75%
Magnolia	59,900	43.05	527	561	94%
Meadowvale	69,000	13.26	544	568	96%
Norrisville	37,417	15.00	213	274	78%
North Bend	60,221	18.23	448	498	90%
North Harford	49,703	20.00	404	500	81%
Old Post	112,417	46.00	892	984	91%
Prospect Mill	75,538	26.77	592	611	97%
Red Pump	100,573	23.52	753	737	102%
Ring Factory	59,132	34.02	544	548	99%
Riverside	55,711	13.18	465	588	79%
Roye-Williams	78,126	28.36	449	703	64%
Wm S. James	58,500	15.00	475	521	91%
Youth's Benefit	149,694	26.18	1,114	1,120	99%
Total	2,335,755	662.56	17,756	19,513	91%

Elementary School Level of Service	Building Square Feet	Acres
per Student (enrollment)	131.55	0.037
per Student (capacity)	119.70	0.034

Source: Harford County Public Schools

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Middle School Facilities

The inventory and current levels of service for middle schools are shown in Figure S5. Harford County Public Schools currently provide 1,397,834 square feet of middle school space on 356.93 acres of land. Total enrollment in all middle schools for the 2023-2024 school year is 8,331 students and capacity includes 10,421 student stations. Overall, middle schools are operating at 80 percent of capacity for the 2023-2024 school year.

Since middle schools overall are currently operating below capacity, *the level of service standard on which the impact fees are based is calculated using student capacity.* This ensures future development is not charged for a higher level of service than what is currently provided or what is planned to be provided. Using a level of service that is based on student capacity represents the level of service the County currently provides.

Levels of service are shown for middle school facilities and land at the bottom of Figure S5. Levels of service are calculated by dividing the amount of infrastructure by total capacity. For middle schools, the existing level of service is 134.14 square feet per student (1,397,834 square feet divided by 10,421 student stations) and 0.034 acres per student (356.93 acres divided by 10,421 student stations).

Figure S5: Existing Level of Service: Middle Schools

Middle School	Building Square Feet	Acres	SY 23/24 Enrollment	Total Capacity	Capacity Utilization
Aberdeen	196,800	43.82	1,058	1,624	65%
Bel Air	164,900	49.52	1,080	1,243	87%
Edgewood	166,530	34.83	994	1,295	77%
Fallston	130,284	49.44	1,060	1,104	96%
Magnolia	149,100	43.05	724	1,028	70%
North Harford	173,728	40.00	867	1,210	72%
Southampton	188,134	35.99	1,194	1,444	83%
Havre de Grace MS	100,765	23.04	587	643	91%
Patterson Mill MS	127,593	37.24	767	830	92%
Total	1,397,834	356.93	8,331	10,421	80%

Middle School Level of Service	Building Square Feet	Acres
per Student (enrollment)	167.79	0.043
per Student (capacity)	134.14	0.034

Source: Harford County Public Schools

High School Facilities

The inventory and current levels of service for high schools are shown in Figure S6. Harford County Public Schools currently provide 2,149,638 square feet of high school space on 485.47 acres of land. Total enrollment in all high schools for the 2023-2024 school year is 11,391 students and state rated capacity includes 13,966 student stations. Overall, high schools are operating at 82 percent of capacity for the 2023-2024 school year.

Since high schools overall are currently operating below capacity, *the level of service standard on which the impact fees are based is calculated using student capacity.* This ensures future development is not charged for a higher level of service than what is currently provided or what is planned to be provided. Using a level of service that is based on student capacity represents the level of service the County currently provides.

Levels of service are shown for high school facilities and land at the bottom of Figure S6. Levels of service are calculated by dividing the amount of infrastructure by total capacity. For high schools, the existing level of service is 153.92 square feet per student (2,149,638 square feet divided by 13,966 student stations) and 0.035 acres per student (485.47 acres divided by 13,966 student stations).

Figure S6: Existing Level of Service: High Schools

High School	Building Square Feet	Acres	SY 23/24 Enrollment	Total Capacity	Capacity Utilization
Aberdeen	230,134	47.30	1,465	1,720	85%
Bel Air	262,454	31.09	1,419	1,768	80%
C. Milton Wright	220,910	69.50	1,302	1,613	81%
Edgewood	268,354	44.32	1,417	1,716	83%
Fallston	233,500	49.44	1,047	1,573	67%
Harford Technical	218,225	26.78	983	1,135	87%
Joppatowne	184,070	69.33	900	1,056	85%
North Harford	245,238	73.45	1,162	1,538	76%
Havre de Grace HS	149,346	34.15	870	954	91%
Patterson Mill HS	137,407	40.11	826	893	92%
Total	2,149,638	485.47	11,391	13,966	82%

High School Level of Service	Building Square Feet	Acres
per Student (enrollment)	188.71	0.043
per Student (capacity)	153.92	0.035

CAPITAL COST FACTORS

School Facilities Construction Costs

Shown below, Figure S7 contains the estimated construction costs used in this analysis. Based on costs from the Maryland Interagency Commission on School Construction (IAC) and additional cost estimates provided by County School staff, the construction cost is $668 per square foot. The State cost share estimate from the IAC is then applied to this estimate to get an adjusted cost per square foot of $281.

Figure S7: School Facilities Construction Cost

School Construction Cost	
Cost per Square Foot	$668
State Cost Share	58%
Adjusted Cost per Square Foot	**$281**

Source: Harford County Public Schools, Maryland Interagency Commission on School Construction (IAC)

Land

Harford County Public Schools anticipate the need to purchase land for future school facilities to accommodate school capital needs brought about by future development in the County. Based on recent land acquisitions, Harford County Public Schools expect to acquire land for $177,000 per acre.

Figure S8: Land Cost

School	Cost	Acres	Cost per Acre
Bel Air Site	$8,000,000	45.21	$177,000
Total	$8,000,000	45.21	$177,000

Source: Harford County Public Schools

PROJECTED CAPACITY UTILIZATION

The analysis calculates growth-related demand for capital improvements using the levels of service and cost factors for the infrastructure components in the previous section. Growth-related demand is a projection of future capital improvements and estimated costs over a specified amount of time and a specified level of service to serve new development.

Existing Permanent Capacity Utilization

Harford County Public Schools currently provide 43,900 permanent student stations. By school type, permanent capacity is as follows: 19,513 permanent elementary school student stations; 10,421 permanent middle school student stations; and 11,391 permanent high school student stations. Based on 2023-2024 school year enrollment, current permanent capacity utilization is 91 percent for elementary schools, 80 percent for middle schools, and 82 percent for high schools.

Figure S9: Existing Enrollment and Permanent Capacity Utilization

School Level	Building Square Feet	Acres	SY 23/24 Enrollment	Permanent Capacity	Capacity Utilization
Elementary	2,335,755	662.56	17,756	19,513	91%
Middle	1,397,834	356.93	8,331	10,421	80%
High	2,149,638	485.47	11,391	13,966	82%
Total	5,883,227	1,504.96	37,478	43,900	85%

Source: Harford County Public Schools

Projected Permanent Capacity Utilization

Elementary Schools

As shown in Figure S10, without any additional elementary school capacity, permanent capacity utilization will equal 98 percent by the end of the study period.

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Figure S10: Elementary School Permanent Capacity Utilization

Elementary Schools			
School Year	Projected Enrollment	Total Capacity	Capacity Utilization
2023-2024	17,858	19,513	92%
2024-2025	17,979	19,513	92%
2025-2026	18,099	19,513	93%
2026-2027	18,220	19,513	93%
2027-2028	18,340	19,513	94%
2028-2029	18,461	19,513	95%
2029-2030	18,581	19,513	95%
2030-2031	18,702	19,513	96%
2031-2032	18,822	19,513	96%
2032-2033	18,943	19,513	97%
2033-2034	19,063	19,513	98%
10-Yr Change	1,205	0	6%
Utilization Without Additional Permanent Capacity			98%

Middle Schools

As shown in Figure S11, without any additional middle school capacity, permanent capacity utilization will equal 87 percent by the end of the study period.

Figure S11: Middle School Permanent Capacity Utilization

Middle Schools			
School Year	Projected Enrollment	Total Capacity	Capacity Utilization
2023-2024	8,493	10,421	81%
2024-2025	8,553	10,421	82%
2025-2026	8,614	10,421	83%
2026-2027	8,674	10,421	83%
2027-2028	8,735	10,421	84%
2028-2029	8,795	10,421	84%
2029-2030	8,856	10,421	85%
2030-2031	8,916	10,421	86%
2031-2032	8,977	10,421	86%
2032-2033	9,037	10,421	87%
2033-2034	9,098	10,421	87%
10-Yr Change	605	0	6%
Utilization Without Additional Permanent Capacity			87%

High Schools

As shown in Figure S12, without any additional high school capacity, permanent capacity utilization will equal 90 percent by the end of the study period.

Figure S12: High School Permanent Capacity Utilization

High Schools			
School Year	Projected Enrollment	Total Capacity	Capacity Utilization
2023-2024	11,755	13,966	84%
2024-2025	11,838	13,966	85%
2025-2026	11,922	13,966	85%
2026-2027	12,005	13,966	86%
2027-2028	12,088	13,966	87%
2028-2029	12,171	13,966	87%
2029-2030	12,255	13,966	88%
2030-2031	12,338	13,966	88%
2031-2032	12,421	13,966	89%
2032-2033	12,505	13,966	90%
2033-2034	12,588	13,966	90%
10-Yr Change	833	0	6%
Utilization Without Additional Permanent Capacity			90%

CREDIT EVALUATION

Existing Debt Service

The school impact fees include a credit for existing debt service. A credit is necessary since new residential development will pay the school impact fee and will also generate property tax revenue used to repay existing debt service. As shown in Figure S13, the principal portion of existing debt service equals $262,031,565 over the next 21 years. Annual principal payments are divided by projected student enrollment in each year to estimate the principal payment per student. To account for the time value of money, annual principal payments per student are discounted using a net present value formula based on the interest rate of 2.0 percent. The total net present value of future principal payments is $5,745 per student. This amount is subtracted from the gross capital cost per student to derive a net capital cost per student.

Figure S13: Existing Debt Service Credit

Year	Principal Payment	Total Student Enrollment	Payment per Student
24-25	$25,459,792	38,370	$663.53
25-26	$24,852,619	38,635	$643.27
26-27	$23,899,788	38,899	$614.41
27-28	$23,521,263	39,163	$600.60
28-29	$22,482,180	39,427	$570.22
29-30	$22,467,863	39,692	$566.06
30-31	$18,444,543	39,956	$461.62
31-32	$12,471,683	40,220	$310.09
32-33	$11,709,488	40,484	$289.23
33-34	$11,372,856	40,749	$279.10
34-35	$11,054,076	41,013	$269.53
35-36	$10,463,159	41,277	$253.49
36-37	$9,944,338	41,541	$239.38
37-38	$8,595,047	41,806	$205.60
38-39	$6,934,765	42,070	$164.84
39-40	$6,146,744	42,334	$145.20
40-41	$5,432,817	42,598	$127.54
41-42	$3,950,417	42,863	$92.16
42-43	$1,912,226	43,127	$44.34
43-44	$915,900	43,391	$21.11
Total	$262,031,565		$6,561.32
Discount Rate			2.0%
Credit per Student			$5,745

Source: Harford County Public Schools

Future Debt Service

Harford County Public Schools plans on issuing debt through to fund future school construction. Because future school construction plans have not been finalized at the time of this Impact Fee Study, TischlerBise has estimated what the principal payments would be based on the projected increase in students. Costs are calculated by multiplying the projected increase in students by the gross capital cost per student. For example, the increase of 121 elementary school students in 2024 is multiplied by the gross capital cost per elementary school student ($39,614), which results in a total growth-related cost of $4,773,974. The total amount of projected capital costs is $230,560,352

Figure S14: Projection of Future Debt Costs

Year		Increase in Elemtary Students	Elementary Student Cost	Increase in Middle School Students	Middle School Student Cost	Increase in High School Students	High School Student Cost	Total Payment
1	2024	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
2	2025	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
3	2026	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
4	2027	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
5	2028	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
6	2029	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
7	2030	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
8	2031	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
9	2032	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
10	2033	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
11	2034	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
12	2035	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
13	2036	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
14	2037	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
15	2038	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
16	2039	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
17	2040	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
18	2041	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
19	2042	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
20	2042	121	$4,773,974	60	$2,640,408	83	$4,113,635	$11,528,018
Total		2,410	$95,479,484	1,209	$52,808,162	1,666	$82,272,705	$230,560,352

To ensure that new development does not "double pay" through the impact fee and again through future property tax payments, a credit is included for estimated principal payments on this future debt. A credit is not necessary for interest payments because interest costs are not included in the impact fee. As shown in Figure S15, projected future debt from school capacity expansion projects estimated at approximately $230 million. Projected annual principal payments are divided by student enrollment in each year to determine a credit per student. For example, in the 2026-2027 school year, the total projected principal ($11,528,018) is divided by projected enrollment of 38,899 for a payment per student of $296.36. To account for the time value of money, annual payments per student are discounted using a net present value formula based on the projected interest rate of 2.0 percent. The total net present value of future principal payments per student is $5,647.68. This amount is subtracted from the gross capital cost per student to derive a net capital cost per student.

Figure S15: Future Debt Service Credit

Year	Principal Payment	Total Student Enrollment	Payment per Student
2024-2025	$11,528,018	38,370	$300.44
2025-2026	$11,528,018	38,635	$298.39
2026-2027	$11,528,018	38,899	$296.36
2027-2028	$11,528,018	39,163	$294.36
2028-2029	$11,528,018	39,427	$292.39
2029-2030	$11,528,018	39,692	$290.44
2030-2031	$11,528,018	39,956	$288.52
2031-2032	$11,528,018	40,220	$286.62
2032-2033	$11,528,018	40,484	$284.75
2033-2034	$11,528,018	40,749	$282.91
2034-2035	$11,528,018	41,013	$281.08
2035-2036	$11,528,018	41,277	$279.28
2036-2037	$11,528,018	41,541	$277.51
2037-2038	$11,528,018	41,806	$275.75
2038-2039	$11,528,018	42,070	$274.02
2039-2040	$11,528,018	42,334	$272.31
2040-2041	$11,528,018	42,598	$270.62
2041-2042	$11,528,018	42,863	$268.95
2042-2043	$11,528,018	43,127	$267.30
2043-2044	$11,528,018	43,391	$265.68
Total	$230,560,352		$5,647.68
Discount Rate			2.0%
Credit per Student			$4,637

MAXIMUM SUPPORTABLE IMPACT FEES

Gross Capital Cost

The gross capital cost per student is the sum of the cost per student for each fee component. For example, for elementary school students, the calculation is as follows: $33,596 (school facilities) + $6,018 (school land) = $39,614 gross capital cost per elementary school student.

Net Capital Cost

The net capital cost per student is the sum of the gross capital cost per student and the proposed credits. Continuing with elementary schools, the calculation is as follows: $39,614 (gross capital cost per student) - $5,745 (existing debt service) - $4,637 (future debt service) = $29,232 net capital cost per elementary school student. The same approach is followed for middle school and high school students.

Figure S16: Net Capital Cost per Student

Level-of-Service Standards			
Fee Component	**Elementary**	**Middle**	**High**
School Facilities			
Square Feet per Student	119.70	134.14	153.92
Cost per Square Foot	$281	$281	$281
Cost per Student	**$33,596**	**$37,648**	**$43,200**
School Facilities Land			
Acres per Student	0.034	0.034	0.035
Cost per Acre	$177,000	$177,000	$177,000
Cost per Student	**$6,018**	**$6,018**	**$6,195**

Capital Cost per Student			
Fee Component	**Elementary**	**Middle**	**High**
School Facilities	$33,596	$37,648	$43,200
School Facilities Land	$6,018	$6,018	$6,195
Gross Capital Cost per Student	$39,614	$43,666	$49,395
Credit: Existing Debt Service	($5,745)	($5,745)	($5,745)
Credit: Future Debt Service	($4,637)	($4,637)	($4,637)
Net Capital Cost per Student	**$29,232**	**$33,284**	**$39,013**

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Maximum Supportable School Impact Fees

Shown below, Figure S17 provides a summary of the input variables (described in the previous sections) used to calculate the maximum supportable school impact fees. The net capital cost is $29,232 per elementary school student, $33,284 per middle school student, and $39,013 per high school student. School impact fees are assessed to residential development according to the number of public school students per dwelling unit.

For a single-family detached unit, the elementary school portion of the fee is $5,029 (0.172 elementary school students per single-family unit X $29,232 net capital cost per elementary school student), the middle school portion of the fee is $3,005 (0.090 middle school students per single-family unit X $33,284 net capital cost per middle school student), and the high school portion of the fee is $4,786 (0.123 high school students per single-family unit X $39,013 net capital cost per high school student). The maximum supportable school impact fee for a single-family unit is $12,819.

Figure S17: Maximum Supportable School Impact Fees

Net Capital Cost	Elementary (K-5)	Middle (6-8)	High (9-12)
Per Student	$29,232	$33,284	$39,013

Harford County Public School Students per Housing Unit				
Housing Type	Elementary (K-5)	Middle (6-8)	High (9-12)	Total
Single-Family Detached	0.172	0.090	0.123	0.385
Townhome	0.186	0.093	0.132	0.411
Multifamily	0.127	0.052	0.065	0.244
Mobile Home	0.155	0.070	0.097	0.323

Residential Development Impact Fees						
Housing Type	Elementary (K-5)	Middle (6-8)	High (9-12)	Maximum Supportable	Current Fees	Difference
Single-Family Detached	$5,029	$3,005	$4,786	$12,819	$6,000	$6,819
Townhome	$5,435	$3,091	$5,166	$13,692	$4,200	$9,492
Multifamily	$3,703	$1,731	$2,555	$7,989	$1,200	$6,789
Mobile Home	$4,539	$2,342	$3,802	$10,683	$1,200	$9,483