



FREDERICK COUNTY GOVERNMENT
OFFICE OF THE COUNTY EXECUTIVE

Jan H. Gardner
County Executive

To: Bud Otis, President, and Members of the Frederick County Council

From: Jan Gardner, County Executive 

Date: December 1, 2017

Subject: Impact Fee Study Transmittal

ISSUE:

L. Carson Bise, AICP, from TischlerBise, Inc. will present the 2017 Impact Fee Study which is attached. This is an informational item scheduled for the December 12, 2017, meeting of the County Council.

BACKGROUND:

In the spring of 2017, TischlerBise, Inc. was contracted to perform an Impact Fee Study for Frederick County. Staff members from the County's planning and budget departments, Frederick County Public Schools, and the Frederick County Public Library assisted in the data gathering. Staff met several times to discuss and review the impact fee study. The Impact Fee Study was previously updated in 2007 and 2014.

In April 2016, the County Council adopted Bill 16-04 relating to impact fees. This bill contains a provision that, on or before January 15th of each year, the County Executive "shall provide to the County Council a report which proposes an annual adjustment to the public school development impact fee based on the most recent data from the State of Maryland School Construction Cost Index" and "an annual adjustment to the library development impact fee, based on the most recent 20 City Annual National Average Data from the Engineering News Record (ENR) Construction Cost Index". The submittal of the Impact Fee Study is intended to fulfill this requirement. Legislation in the spirit of these recommendations will be forthcoming in the near future.

RECOMMENDATION:

This item is presented to the County Council for information only. Mr. Bise and staff will be available to respond to questions.

Attachment

**DRAFT-Frederick County Impact Fee Update Study
School and Library**

Prepared for:
Frederick County, Maryland

November 28, 2017

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FISCAL | ECONOMIC | PLANNING

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EXECUTIVE SUMMARY

Frederick County retained TischlerBise to update its school and library 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 proportionate share of capital facility needs. Impact fees do have limitations, and should not be regarded as the total solution for infrastructure funding needs. Rather, they are one component of a comprehensive portfolio to ensure provision of adequate facilities (schools and libraries) needed to serve new development. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies.

FREDERICK COUNTY IMPACT FEE OVERVIEW

Frederick County has seen significant residential growth over the past several years and with it increased enrollment in schools as well as increased usage of the library system. This growth is expected to continue in the future. Appendix A provides detail on land use and demographic assumptions and projections.

Frederick County school impact fees are derived using the incremental approach. This approach determines current level of service standards for school buildings (i.e., elementary, middle, and high), land for school sites, and buses.

1. School buildings: Square feet per student by type of school
2. Land: Acres per student by type of school
3. Buses: Buses per student

Frederick County library impact fees are derived using the incremental approach. This approach determines current level of service standards for infrastructure (square footage of libraries) and collection materials.

1. Library buildings: Square feet per person
2. Collection Material: Collection material per person

A credit is included in the impact fee to account for outstanding debt on school improvements and for projected revenue generated by new development. Further detail on the approach, levels of service, costs, and credits is provided in the body of this report.

GENERAL LEGAL FRAMEWORK

Both state and federal courts have recognized the imposition of impact fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety,

and welfare by ensuring that development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive community input, with stakeholder meetings, work sessions, and public hearings provide opportunity for comments and refinements to the impact fees.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an “essential nexus” between the exaction and the interest being protected (see *Nollan v. California Coastal Commission*, 1987). In a more recent case (*Dolan v. City of Tigard, OR*, 1994), the Court ruled that an exaction also must be “roughly proportional” to the burden created by development. However, the *Dolan* decision appeared to set a higher standard of review for mandatory dedications of land than for monetary exactions such as development impact fees.

There are three reasonable relationship requirements for impact fees that are closely related to “rational nexus” or “reasonable relationship” requirements enunciated by a number of state courts. Although the term “dual rational nexus” is often used to characterize the standard by which courts evaluate the validity of impact fees under the U.S. Constitution, we prefer a more rigorous formulation that recognizes three elements: “need,” “benefit,” and “proportionality.” The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the *Dolan* case. Individual elements of the nexus standard are discussed further in the following paragraphs.

All new development in a community creates additional demands on some, or all, public facilities provided by local government, in this case schools and libraries. If the capacity of schools and libraries are not increased to satisfy that additional demand, the quality or availability of services for the entire community will deteriorate. Impact fees may be used to recover the cost of development-related schools or libraries, but only to the extent that the need for school or libraries is a consequence of development that is subject to the fees. The *Nollan* decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle clearly applies to impact fees. In this study, the impact of development on infrastructure needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific schools and libraries, based on applicable level-of-service standards.

The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case (although the relevance of that decision to impact fees has been debated) and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related school and library costs, and in the methods used to calculate impact fees for various types of schools and libraries and categories of development. The demand for schools and libraries are measured in terms of relevant and measurable attributes of development (e.g. a typical housing unit’s average number of persons).

A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the school or library for which the fees were charged. Impact fees must be expended

in a timely manner and the schools or libraries funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the state enabling legislation requires that schools or libraries funded with fee revenues be available *exclusively* to development paying the fees. In other words, benefit may extend to a general area including multiple real estate developments. All of these procedural as well as substantive issues are intended to ensure that new development benefits from the impact fees they are required to pay. The authority and procedures to implement impact fees is separate from and complementary to the authority to require improvements as part of subdivision or zoning review.

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 jurisdiction (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 demand units for each unit of development. The second step in the impact fee formula is to determine infrastructure units per demand unit, typically called level-of-service (LOS) standards. The third step in the impact fee formula is the cost of various infrastructure units.

The school impact fee methodology is based on current public school student generation rates, local costs, and infrastructure standards. The basic formula used to derive the impact fee is to multiply student generation rates by the net capital cost of public schools per student. To avoid potential double payment for schools, credits for future principal payments are deducted from the impact fee per housing unit. Impact fees are limited to the cost of school buildings, including the capital cost of school sites, and vehicles.

The library impact fee methodology is based on person per housing unit (PPHU), local costs, and infrastructure standards. The basic formula to derive the impact fee is to multiply the PPHU by the net capital cost of the library. Impact fees are conservatively limited to the cost of the library building, excluding the capital cost of the library site, and the collection materials.

GENERAL METHODOLOGIES

There are three general methods for calculating impact fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

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 impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for schools or libraries within the designated service area. The following paragraphs discuss three basic methods for calculating impact fees and how those methods can be applied.

Cost Recovery (Past Improvements)

The rationale for recoupment, often called cost recovery, 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 utility systems that must provide adequate capacity before new development can take place.

Incremental Expansion (Concurrent Improvements)

The incremental expansion method documents current level-of-service (LOS) standards for each type of public facility, using both quantitative and qualitative measures. 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. 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 increment to keep pace with development, and is the methodology used for this school impact fee calculation.

Plan-Based Fee (Future Improvements)

The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

Credits

Regardless of the methodology, a consideration of “credits” is integral to the development of a legally defensible impact fee methodology. There are two types of “credits” with specific characteristics, both of which should be addressed in impact fee studies and ordinances.

- First, a revenue credit might be necessary if there is a double payment situation and other revenues are contributing to the capital costs of infrastructure to be funded by impact fees. This type of credit is integrated into the impact fee calculation, thus reducing the fee amount.
- Second, a site-specific credit or developer reimbursement might be necessary for dedication of land or construction of system improvements funded by impact fees. This type of credit is addressed in the administration and implementation of the impact fee program.

PROPOSED IMPACT FEE SCHEDULE

Impact fees are proportionate and reasonably related to capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from County School staff, TischlerBise determined demand indicators for each type of capital facility to allocate costs to new development. This report documents the formulas and input variables used to calculate the impact fees for each type of facility. Impact fee methodologies also identify the extent to which new

development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

Figure 1 summarizes the methods and cost components for each type of infrastructure included in Frederick County’s impact fee update. Schools and Libraries have a countywide service area.

Figure 1: Proposed Methodology

| Type of Fee | Service Area | Cost Recovery (past) | Incremental Expansion (present) | Plan-Based (future) |
|----------------|--------------|----------------------|--|---------------------|
| Public Schools | Countywide | N/A | Elementary, Middle, and High School Seats, Cost of Land, Buses | N/A |
| Library | Countywide | N/A | Buildings and Collection Materials | NA |

Figure 2 provides the proposed total impact fees for School and Library. For a single family unit, the maximum supportable fee amounts are \$14,819 per unit; for a townhouse / duplex, the maximum fee amount is \$16,875 per unit; and for a multi-family unit the maximum fee amount is \$7,363 per unit.

The School and Library impact fees are applied only to residential development and are per housing unit, reflecting the proportionate demand by type of unit. The amounts shown are “maximum supportable” amounts based on the methodologies, levels of service, and costs for the capital improvements identified herein. The fees represent the highest amount feasible for each type of applicable development, which represent new growth’s fair share of the capital costs as detailed in this report. The County can adopt amounts that are lower than the maximum amounts shown; however, a reduction in fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in the County’s levels of service for Schools and Libraries.

Figure 2: Maximum Supportable Impact Fees

| Residential (per housing unit) | Public Schools | Library | Proposed Fees | Current Fees | \$ Change | % Change |
|--------------------------------|----------------|---------|-----------------|--------------|-----------|----------|
| Single Family | \$14,132 | \$687 | \$14,819 | \$15,515 | (\$696) | -4% |
| Townhouse / Duplex | \$16,248 | \$627 | \$16,875 | \$15,697 | \$1,178 | 8% |
| Multi-family | \$6,974 | \$389 | \$7,363 | \$6,676 | \$687 | 10% |

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using one, two, and three digit places, 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).

STUDENT GENERATION RATES

Demand for additional school capacity will come from new residential development. To determine the level of this demand, student generation rates are used. The term “student generation rate” refers to the number of public school students per housing unit in Frederick County. Public school students are a subset of school-aged children, which includes students in private schools and home-schooled children. Student generation rates are important demographic factors that help account for variations in demand for schools by type of housing. Students per housing unit are held constant over the projection period since the impact fees represent a “snapshot approach” of current levels of service and costs.

Student generation rates for Frederick County were provided by the Division of Planning and Permitting and Frederick County Public Schools (FCPS). Figure 3 compares student generation rates by housing type in Frederick County in 2012 and 2017. Because the data are shown with two decimal places, it is often easier to understand the rates as an indication of the expected number of public school students per 1,000 housing units. For example, the top left cell in the table indicates a rate of 0.21 elementary school students from a single detached house in 2012. Therefore, for every 1,000 single detached dwellings, Frederick County anticipated an average of 210 elementary students in public schools back in 2012. In comparison, the updated 2017 rate is 200 elementary students per 1,000 single detached housing units. The column charts shown below graphically compare the past and current student generation rates by type of housing and school level.

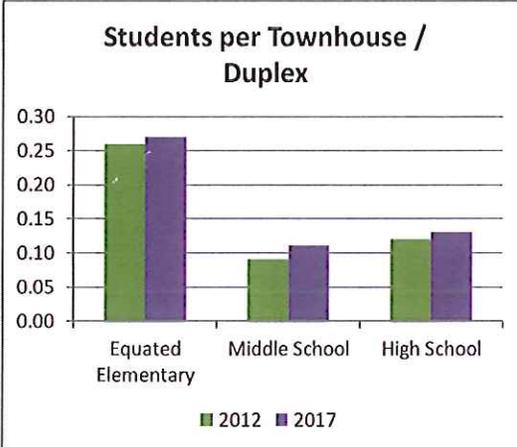
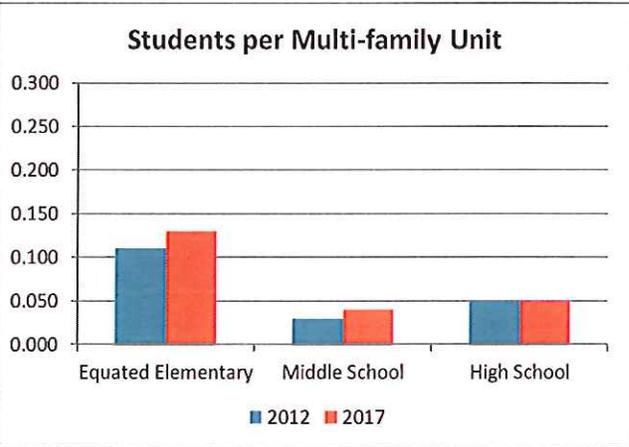
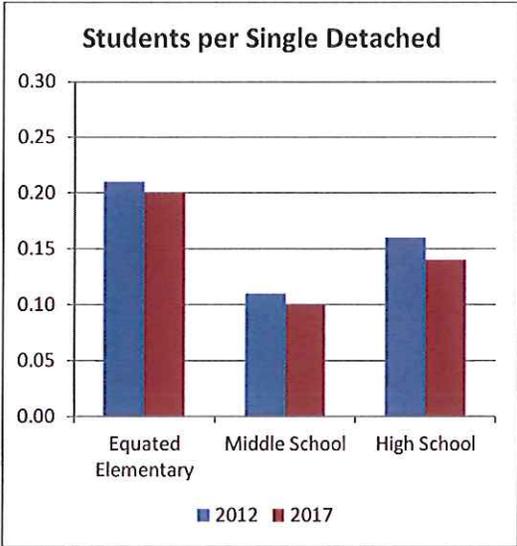
Figure 3: Current and Proposed Student Generation Rates (countywide averages for Frederick County)

| Single Family | Elementary | Middle School | High School |
|---------------|------------|---------------|-------------|
| 2012 | 0.21 | 0.11 | 0.16 |
| 2017 | 0.20 | 0.10 | 0.14 |
| Difference | (0.01) | (0.01) | (0.02) |

| Townhouse / Duplex | Elementary | Middle School | High School |
|--------------------|------------|---------------|-------------|
| 2012 | 0.26 | 0.09 | 0.12 |
| 2017 | 0.27 | 0.11 | 0.13 |
| Difference | 0.01 | 0.02 | 0.01 |

| Multi-Family | Elementary | Middle School | High School |
|--------------|------------|---------------|-------------|
| 2012 | 0.110 | 0.030 | 0.050 |
| 2017 | 0.130 | 0.040 | 0.050 |
| Difference | 0.02 | 0.01 | 0.00 |

Based on Frederick County Pupil Yield Study, DPP, IITD, & FCPS, June 2017.



SUMMARY OF GROWTH INDICATORS

Housing unit projections through 2027 are summarized in Figure 4. TischlerBise derived housing units by using yearly building permits for 2013-2016 based on an estimate of total housing units in 2012 and average yearly building permits for the last five years for 2017 to 2025. Over the past five calendar years, Frederick County added an average of 1,395 housing units per year, more detail can be found in Appendix A.

Figure 4: Housing Units 2017-2027

| | 2016 | FY17-18 2017 | FY18-19 2018 | FY19-20 2019 | FY20-21 2020 | FY21-22 2021 | FY22-23 2022 | FY23-24 2023 | FY24-25 2024 | FY25-26 2025 | FY26-27 2026 | FY27-28 2027 |
|----------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | Base Yr | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Housing Units* | 97,187 | 98,582 | 99,978 | 101,373 | 102,768 | 104,163 | 105,559 | 106,954 | 108,349 | 109,744 | 111,140 | 112,535 |

*2015-2016 using yearly building permits, 2017-2025 used average annual building permits from the last five years

STUDENT ENROLLMENT PROJECTIONS

Shown below in Figure 5 is the 2017-2027 Frederick County Public Schools Enrollment Projections, which include Charter and Montessori schools. Frederick County Public Schools projects enrollment every year and presents it in the Educational Facilities Master Plan. These projections, according to Frederick County Public School staff, have historically been more conservative than actual enrollment totals.

Figure 5: Projected FCPS Enrollments 2017-2027

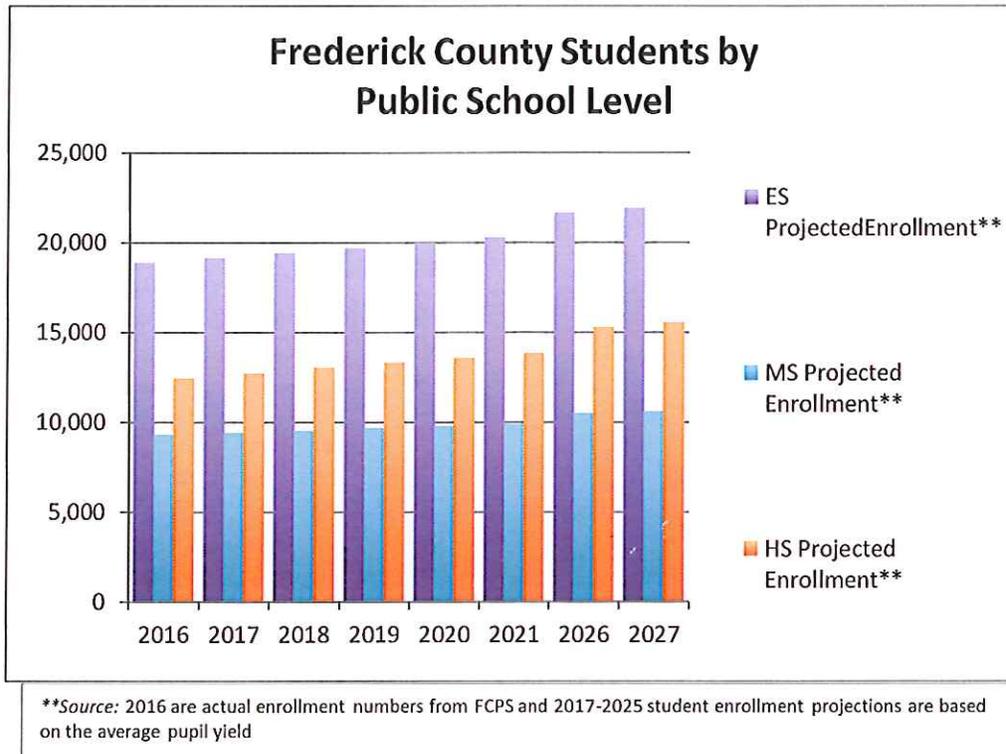
| Public School Students | FY16-17 2016 | FY17-18 2017 | FY18-19 2018 | FY19-20 2019 | FY20-21 2020 | FY21-22 2021 | FY22-23 2022 | FY23-24 2023 | FY24-25 2024 | FY25-26 2025 | FY26-27 2026 | FY27-28 2027 |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| FCPS Projected Enrollment* | 18,846 | 18,988 | 18,916 | 18,900 | 19,027 | 19,150 | 19,352 | 19,655 | 19,991 | 20,251 | 20,467 | 20,194 |
| ES FCPS Projected Enrollment* | 9,294 | 9,510 | 9,830 | 10,018 | 10,022 | 9,944 | 9,974 | 9,892 | 9,881 | 9,893 | 10,077 | 10,327 |
| MS FCPS Projected Enrollment* | 12,442 | 12,550 | 12,592 | 12,851 | 13,163 | 13,510 | 13,845 | 13,952 | 13,941 | 14,101 | 13,942 | 14,558 |
| HS FCPS Projected Enrollment* | 40,582 | 41,048 | 41,338 | 41,769 | 42,212 | 42,604 | 43,171 | 43,499 | 43,813 | 44,245 | 44,486 | 45,079 |

*Source: Actual 2016 and projections for 2017-2027 are from pages 29-30 of Educational Facilities Master Plan, published August 2017. Actual 2016 from FCPS.

Because FCPS projections historically underestimate demand, TischlerBise will use its projections, shown below in Figure 6, to determine future demand for school infrastructure. These projections were derived by applying the pupil generation rates shown previously in Figure 3 (which do not include private school students, but do include potential Charter and Montessori school students) to the projection of housing units shown in Figure 4. Annual data will be used in the impact fee calculations. Yearly detail by school level is provided below.

Figure 6: Projected Enrollment 2017- 2027 (TischlerBise Projection)

| | | 1 | 2 | 3 | 4 | 5 | 10 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|
| Public School Students | FY16-17 | FY17-18 | FY18-19 | FY19-20 | FY20-21 | FY21-22 | FY26-27 |
| Projected Enrollment** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2026 |
| ES Projected Enrollment** | 18,846 | 19,125 | 19,404 | 19,683 | 19,962 | 20,241 | 21,637 |
| MS Projected Enrollment** | 9,294 | 9,410 | 9,527 | 9,643 | 9,759 | 9,875 | 10,457 |
| HS Projected Enrollment** | 12,442 | 12,721 | 13,000 | 13,279 | 13,558 | 13,837 | 15,233 |
| Projected Enrollment** | 40,582 | 41,256 | 41,931 | 42,605 | 43,279 | 43,954 | 47,326 |



PERMANENT CAPACITY UTILIZATION

Frederick County’s permanent school capacity is 44,735 student seats (this does not include portables, Montessori schools or Charter schools). By school type, permanent capacity is as follows: elementary school – 18,776; middle school – 11,239; and high school – 14,720. Based on the 2017-2018 count, when compared to actual enrollment in permanent capacity, current permanent capacity utilization is 101% for elementary schools, 83% for middle schools, and 86% for high schools. As shown in Figures 7 through 9, without any additional student seats, elementary schools will utilize 115% of their permanent capacity, middle schools will utilize 93% of their permanent capacity, and 102% of permanent capacity will be utilized by high schools by the end of the study period.

Figure 7: Projected Elementary School Capacity Utilization

| <i>Elementary Schools</i> | | | |
|---------------------------|------------|---------------------|-------------|
| School Year | Enrollment | Total Student Seats | Utilization |
| 2017-2018 | 19,125 | 18,776 | 102% |
| 2018-2019 | 19,404 | 18,776 | 103% |
| 2019-2020 | 19,683 | 18,776 | 105% |
| 2020-2021 | 19,962 | 18,776 | 106% |
| 2021-2022 | 20,241 | 18,776 | 108% |
| 2022-2023 | 20,520 | 18,776 | 109% |
| 2023-2024 | 20,799 | 18,776 | 111% |
| 2024-2025 | 21,078 | 18,776 | 112% |
| 2025-2026 | 21,357 | 18,776 | 114% |
| 2026-2027 | 21,637 | 18,776 | 115% |
| 10-Yr Change | 2,511 | | |

**Based on projection of students by TischlerBise*

Figure 8: Projected Middle School Capacity Utilization

| <i>Middle Schools</i> | | | |
|-----------------------|------------|---------------------|-------------|
| School Year | Enrollment | Total Student Seats | Utilization |
| 2017-2018 | 9,410 | 11,239 | 84% |
| 2018-2019 | 9,527 | 11,239 | 85% |
| 2019-2020 | 9,643 | 11,239 | 86% |
| 2020-2021 | 9,759 | 11,239 | 87% |
| 2021-2022 | 9,875 | 11,239 | 88% |
| 2022-2023 | 9,992 | 11,239 | 89% |
| 2023-2024 | 10,108 | 11,239 | 90% |
| 2024-2025 | 10,224 | 11,239 | 91% |
| 2025-2026 | 10,340 | 11,239 | 92% |
| 2026-2027 | 10,457 | 11,239 | 93% |
| 10-Yr Change | 1,046 | | |

**Based on projection of students by TischlerBise*

Figure 9: Projected High School Capacity Utilization

| <i>High Schools</i> | | | |
|---------------------|------------|---------------------|-------------|
| School Year | Enrollment | Total Student Seats | Utilization |
| 2017-2018 | 12,721 | 14,720 | 86% |
| 2018-2019 | 13,000 | 14,720 | 88% |
| 2019-2020 | 13,279 | 14,720 | 90% |
| 2020-2021 | 13,558 | 14,720 | 92% |
| 2021-2022 | 13,837 | 14,720 | 94% |
| 2022-2023 | 14,116 | 14,720 | 96% |
| 2023-2024 | 14,395 | 14,720 | 98% |
| 2024-2025 | 14,674 | 14,720 | 100% |
| 2025-2026 | 14,953 | 14,720 | 102% |
| 2026-2027 | 15,233 | 14,720 | 103% |
| 10-Yr Change | 2,511 | | |

*Based on projection of students by TischlerBise

SCHOOL IMPACT FEE

METHODOLOGY

The Frederick County school impact fee methodology is based on current average public school student generation rates, level-of-service standards, and local costs. The school impact fees use an incremental expansion approach, which documents the current level of service for schools in both quantitative and qualitative measures. The intent is to use impact fee revenue to expand or provide additional schools/seats, as needed to accommodate new development, based on the current level of service and cost to provide capital improvements. All school levels are included in the fees. Costs for school buildings and buses are included in the fee. The costs are adjusted to account for estimated State funding for capacity projects; therefore, the fees reflect the County's share of the total costs. Finally, credits for future principal payments on existing debt and future revenue generated by new development are included.

SERVICE AREA

The Frederick County Schools provides the students of Frederick County with a range of educational schools. These schools are located throughout the County and serve students located within the school's attendance zone. As enrollment at individual schools changes, attendance zones can be redrawn in order to better utilize County resources. A countywide school impact fee service area is appropriate for Frederick County.

LEVEL-OF-SERVICE STANDARDS

This section provides current inventories of elementary, middle, and high schools in the Frederick County Public School system. The data contained in these tables are used to determine infrastructure standards for school buildings and sites on which the impact fees are based. Figures 10, 11, and 12 provide inventories of existing public schools in Frederick County. The data contained in these tables are from the Educational Facilities Master Plan, draft published August 2017. An incremental expansion cost method is recommended for all three types of schools.

Elementary Schools

The inventory and current levels of service for Frederick County elementary schools are shown below in Figure 10. **It is important to note that the levels of service for the impact fee calculations do not include the Charter or Montessori schools, as the County is not responsible for the construction of these schools.** As indicated below, elementary school buildings have a total of 2.23 million square feet of building floor area on 612 acres. Total enrollment in all elementary schools is for the 2017-2018 school year is 18,989 and total permanent capacity is 18,776. In the 2017-2018 school year, elementary school utilization percentages range from a low of 66 percent at Thurmont to a high of 173 percent at Waverley. Utilization for the entire elementary school inventory is 101 percent.

Since elementary schools overall are currently operating over capacity, *the level of service standard on which the impact fees are based is calculated using actual enrollment* (shaded in Figure 10). This ensures

new development is not charged for a higher level of service than what is currently provided or what is planned to be provided. When enrollment is below rated capacity, the level of service is based on capacity, which represents the level of service the County will ultimately provide.

Levels of service are shown for buildings and land for elementary schools at the bottom of Figure 10. Levels of service are calculated by dividing the amount of infrastructure by total enrollment and capacity. For example, 2,232,198 square feet of school building space is divided by a permanent capacity of 18,776 students to arrive at 117.6 square feet per student. Because County elementary schools are currently over rated capacity, levels of service differ when calculated based on enrollment and capacity. For example, the building square footage level of service is 117.6 square feet per student when based on enrollment versus a level of service of 118.9 square feet per student when based on capacity.

Current levels of service are:

Land: 0.032 acres per student

Buildings: 117.6 square feet per student

Figure 10: Elementary School Level of Service

| Elementary School | Building Sq Ft | Acreage | 9/30/17 Enrollment | State Rated Capacity | Utilization |
|--------------------|------------------|------------|--------------------|----------------------|-------------|
| Ballenger Creek | 64,187 | 19.3 | 648 | 663 | 98% |
| Brunswick | 60,205 | 24.6 | 703 | 611 | 115% |
| Carroll Manor | 77,593 | 18.9 | 565 | 618 | 91% |
| Centerville | 87,175 | 16.0 | 956 | 675 | 142% |
| Deer Crossing | 77,966 | 22.0 | 778 | 587 | 133% |
| Emmitsburg | 45,080 | 13.4 | 255 | 316 | 81% |
| Glade | 66,500 | 13.4 | 681 | 638 | 107% |
| Green Valley | 51,888 | 31.2 | 417 | 504 | 83% |
| Hillcrest | 62,305 | 12.7 | 968 | 670 | 144% |
| Kempton | 53,800 | 39.5 | 389 | 435 | 89% |
| Lewistown | 50,898 | 39.5 | 170 | 242 | 70% |
| Liberty | 54,902 | 11.6 | 280 | 364 | 77% |
| Lincoln | 20,334 | 3.2 | 591 | 633 | 93% |
| Middletown | 54,854 | 8.0 | 473 | 526 | 90% |
| Middletown Primary | 70,288 | 20.0 | 464 | 482 | 96% |
| Monocacy | 57,900 | 12.6 | 621 | 567 | 110% |
| Myersville | 54,889 | 12.0 | 372 | 458 | 81% |
| New Market | 88,983 | 12.3 | 691 | 659 | 105% |
| New Midway | 21,894 | 6.6 | 313 | 340 | 92% |
| North Frederick | 95,613 | 15.0 | 661 | 679 | 97% |
| Oakdale | 89,566 | 14.8 | 633 | 692 | 91% |
| Orchard Grove | 70,142 | 15.7 | 686 | 639 | 107% |
| Parkway | 32,223 | 5.0 | 208 | 248 | 84% |
| Sabillasville | 27,000 | 15.0 | 112 | 160 | 70% |
| Spring Ridge | 66,276 | 20.0 | 500 | 577 | 87% |
| Thurmont | 64,250 | 15.3 | 321 | 483 | 66% |
| Thurmont Primary | 66,334 | 13.5 | 370 | 528 | 70% |
| Tuscarora | 86,938 | 18.0 | 798 | 662 | 121% |
| Twin Ridge | 68,900 | 17.0 | 506 | 674 | 75% |
| Urbana | 64,133 | 19.9 | 712 | 511 | 139% |
| Valley | 59,989 | 31.7 | 400 | 504 | 79% |
| Walkersville | 89,514 | 15.0 | 652 | 662 | 98% |
| Waverley | 54,178 | 18.2 | 718 | 416 | 173% |
| Whittier | 81,244 | 10.1 | 765 | 671 | 114% |
| Wolfsville | 41,657 | 14.0 | 159 | 226 | 70% |
| Yellow Springs | 52,600 | 17.0 | 453 | 456 | 99% |
| Total | 2,232,198 | 612 | 18,989 | 18,776 | 101% |

| Elementary School Levels of Service | Building SF | Site Acreage |
|--|-------------|--------------|
| LOS per Student (current enrollment) | 117.6 | 0.032 |
| LOS per Student (state rated capacity) | 118.9 | 0.033 |

Middle Schools

The inventory and current levels of service for middle schools are shown in Figure 11. As indicated in the table, middle school buildings have a total of 1,603,576 square feet of gross floor area on approximately

327 acres. Total enrollment in all middle schools for the 2017-2018 school year is 9,348 and total permanent capacity 11,239. **It is important to note permanent capacity does not include portables, Charter schools or Montessori schools.** Utilization percentages for individual schools are calculated by dividing enrollment by capacities. Overall, middle schools are operating at 83 percent capacity for the 2017-2018 school year; utilization rates range from a low of 57 percent at Governor Thomas Johnson to a high of 117 percent at Oakdale.

Levels of service are shown for buildings and land for middle schools at the bottom of Figure 11. *Levels of service are calculated by dividing the amount of infrastructure by capacity, since total enrollment is less than overall capacity.* For example, 1,603,576 square feet of school building space is divided by middle school total capacity of 11,239 students to arrive at 142.7 square feet per student.

Current levels of service are:

Land: 0.029 acres per student

Buildings: 142.7 square feet per student

Figure 11: Middle School Level of Service

| Middle School | Building Sq Ft | Acreage | 9/30/17 Enrollment | State Rated Capacity | LOS of Capacity |
|---------------------|------------------|------------|--------------------|----------------------|-----------------|
| Ballenger Creek | 113,850 | 25 | 779 | 870 | 90% |
| Brunswick | 119,539 | 29.7 | 578 | 884 | 65% |
| Crestwood | 107,212 | 23.08 | 579 | 600 | 97% |
| Gov. Thomas Johnson | 126,700 | 25.31 | 513 | 900 | 57% |
| Middletown | 114,974 | 24 | 813 | 914 | 89% |
| Monocacy | 114,445 | 20.38 | 789 | 860 | 92% |
| New Market | 114,936 | 19.9 | 545 | 881 | 62% |
| Oakdale | 109,089 | 22.3 | 703 | 600 | 117% |
| Thurmont | 135,260 | 13 | 555 | 900 | 62% |
| Urbana | 145,135 | 26.18 | 964 | 900 | 107% |
| Walkersville | 119,353 | 28.68 | 882 | 1,051 | 84% |
| West Frederick | 166,439 | 12 | 890 | 955 | 93% |
| Windsor Knolls | 116,644 | 57 | 758 | 924 | 82% |
| Total | 1,603,576 | 327 | 9,348 | 11,239 | 83% |

| Middle School Levels of Service | Building SF | Site Acreage |
|---|---------------|--------------|
| LOS per Student (current enrollment) | 171.50 | 0.035 |
| LOS per Student (state rated capacity) | 142.70 | 0.029 |

Data Source: Frederick County Public Schools (FCPS).

High Schools

The inventory and current levels of service for high schools are shown below in Figure 12. As indicated below, high school buildings have a total of 2,300,616 square feet of gross floor area on approximately 490 acres. Total enrollment in all high schools for the 2017-2018 school year is 12,702 and total capacity is 14,720. **It is important to note permanent capacity does not include portables, Charter schools or Montessori schools.** Utilization percentages for individual schools are calculated by dividing enrollment by capacities. Overall, high schools are at 86 percent capacity for the 2017-2018 school year; utilization rates range from a low of 69 percent at Catoclin to a high of 107 percent at Urbana.

Since high schools overall are currently operating under capacity, *the level of service standard on which the impact fees are based is calculated using state rated capacity* (shaded in Figure 12). Levels of service are calculated by dividing the amount of infrastructure by capacity, since total enrollment is less than overall capacity. For example, 2,300,616 square feet of school building space is divided by high school total capacity of 14,720 students to arrive at 156.3 square feet per student.

Current levels of service are:

Land: 0.033 acres per student

Buildings: 156.3 square feet per student

Figure 12: High School Level of Service

| High School | Building Sq Ft | Acreage | 9/30/17 Enrollment | State Rated Capacity | LOS of Capacity |
|---------------------|------------------|------------|--------------------|----------------------|-----------------|
| Brunswick | 166,066 | 48 | 766 | 893 | 86% |
| Catoclin | 179,045 | 88 | 783 | 1,135 | 69% |
| Frederick | 270,618 | 28 | 1,460 | 1,826 | 80% |
| Gov. Thomas Johnson | 312,533 | 39.31 | 1,574 | 2,091 | 75% |
| Linganore | 253,565 | 50 | 1,326 | 1,635 | 81% |
| Middletown | 189,641 | 46 | 1,140 | 1,169 | 98% |
| Oakdale | 241,061 | 49.1 | 1,251 | 1,532 | 82% |
| Tuscarora | 257,062 | 46.49 | 1,550 | 1,606 | 97% |
| Urbana | 249,609 | 59.7 | 1,758 | 1,636 | 107% |
| Walkersville | 181,416 | 35 | 1,094 | 1,197 | 91% |
| Total | 2,300,616 | 490 | 12,702 | 14,720 | 86% |

| <i>High School Levels of Service</i> | <i>Building SF</i> | <i>Site Acreage</i> |
|--|--------------------|---------------------|
| LOS per Student (current enrollment) | 181.10 | 0.035 |
| LOS per Student (state rated capacity) | 156.30 | 0.033 |

Data Source: Frederick County Public Schools (FCPS).

PROJECTED SCHOOL COSTS

FCPS staff provided documentation of the anticipated costs for new elementary, middle and high schools, which are summarized in Figure 13. Total project costs, excluding land, are separated into separate columns indicating state and local funding. These planned projects are being used to derive the estimated cost to provide future capacity at the three school levels.

The local cost of future elementary school seats, divided by the added square footage, indicates an average Frederick County cost of \$272 per square feet. The local cost of future middle school seats, divided by the added square footage, indicates an average Frederick County cost of \$236 per square feet. The local cost of future high school space, divided by the added square footage, indicates an average Frederick County cost of \$229.

Figure 13: Local Cost of Schools

| School Type | Square Feet | Cost of New Seats* | | | Total Capacity | County Cost per Additional Student Seat* | County Cost per Square Feet* |
|-----------------------------|-------------|--------------------|--------------|--------------|----------------|--|------------------------------|
| | | Total | State | County | | | |
| Prototype Elementary School | 97,870 | \$44,656,232 | \$18,009,251 | \$26,646,981 | 725 | \$36,754 | \$272 |
| Prototype Middle School | 126,700 | \$56,841,290 | \$26,910,374 | \$29,930,916 | 900 | \$33,257 | \$236 |
| Prototype High School | 242,000 | \$107,362,470 | \$51,953,664 | \$55,408,806 | 1,600 | \$34,631 | \$229 |

* Total project cost excluding land.
Source: Frederick County Public Schools

LAND COSTS

Frederick County Schools the need to purchase land for future school sites to accommodate school capital needs brought about by growth in the County. Most recently land has either been donated or dedicated but the County believes that will not always be the case, therefore it is now included in the impact fee. Frederick County Public School staff provided the average land value is \$40,000 per acre.

BUS COSTS

Buses are another infrastructure component included in the impact fee (this a new component to the County's School Impact Fee). New buses will need to be purchased to accommodate increased enrollment. Total current value of the fleet is estimated at approximately \$37.4 million, which equates to an average cost of \$87,266 per bus. The current level of service is 0.010 buses per student, or \$873 per student.

Figure 14: Frederick County Buses

| Type | Units | Cost | Total Value |
|-------------------|------------|----------|---------------------|
| Full-Size Bus | 321 | \$85,000 | \$27,285,000 |
| Special Needs Bus | 108 | \$94,000 | \$10,152,000 |
| Total | 429 | | \$37,437,000 |

| Level of Service | |
|--------------------|--------|
| Current Enrollment | 41,039 |
| Buses per Student | 0.010 |

| | |
|--------------------------|----------|
| Average Cost per Bus | \$87,266 |
| Average Cost per Student | \$873 |

Source: FCPS.

CREDITS FOR FUTURE PRINCIPAL PAYMENTS ON SCHOOL IMPROVEMENTS

Because Frederick County debt-financed recent school capacity expansions, a credit is included for future principal payments on outstanding debt. A credit is necessary since new residential units that will pay the impact fee will also contribute to future principal payments on this remaining debt through property taxes, income taxes and other revenue . A credit is not necessary for interest payments because interest costs are not included in the impact fee.

County staff provided outstanding debt for Frederick County Public Schools. As shown in Figure 15, outstanding principal from school construction projects is estimated at approximately \$183.2 million. Annual principal payments are divided by student enrollment in each year to get a per student credit. For example, in the 2017-2018 school year, the total principal to be paid of \$19,867,118 is divided by projected student enrollment of 41,048 for a payment per student of \$484. To account for the time value of money, annual payments per student are discounted using a net present value formula based on an average current interest rate of 2.3%. The total net present value of future principal payments per student is \$3,619. This amount is subtracted from the gross capital cost per student to derive a net capital cost per student.

Figure 15: Principal Payments Credit

| School Year | Fiscal Year | Principal Payments for New Seats | All Students | Credit Per Student |
|-------------|-------------|----------------------------------|-------------------|--------------------|
| 2017 | FY18 | \$19,867,118 | 41,048 | \$484 |
| 2018 | FY19 | \$20,709,064 | 41,338 | \$501 |
| 2019 | FY20 | \$19,451,481 | 41,769 | \$466 |
| 2020 | FY21 | \$17,326,123 | 42,212 | \$410 |
| 2021 | FY22 | \$9,839,792 | 42,604 | \$231 |
| 2022 | FY23 | \$9,512,136 | 43,171 | \$220 |
| 2023 | FY24 | \$9,512,136 | 43,499 | \$219 |
| 2024 | FY25 | \$9,512,136 | 43,813 | \$217 |
| 2025 | FY26 | \$9,512,136 | 44,245 | \$215 |
| 2026 | FY27 | \$7,442,173 | 44,486 | \$167 |
| 2027 | FY28 | \$7,442,173 | 45,079 | \$165 |
| 2028 | FY29 | \$7,442,173 | 45,487 | \$164 |
| 2029 | FY30 | \$7,442,173 | 45,895 | \$162 |
| 2030 | FY31 | \$7,442,173 | 46,303 | \$161 |
| 2031 | FY32 | \$3,594,183 | 46,711 | \$77 |
| 2032 | FY33 | \$3,594,183 | 47,119 | \$76 |
| 2033 | FY34 | \$3,594,183 | 47,526 | \$76 |
| 2034 | FY35 | \$3,594,183 | 47,934 | \$75 |
| 2035 | FY36 | \$3,594,183 | 48,342 | \$74 |
| 2036 | FY37 | \$573,073 | 48,750 | \$12 |
| 2037 | FY38 | \$573,073 | 49,158 | \$12 |
| 2038 | FY39 | \$573,073 | 49,566 | \$12 |
| 2039 | FY40 | \$573,073 | 49,974 | \$11 |
| 2040 | FY41 | \$573,073 | 50,382 | \$11 |
| | | \$183,289,266 | | \$4,218 |
| | | | Discount Rate | 2.30% |
| | | | Net Present Value | \$3,619 |

Source: Frederick County Budget Office

SCHOOL IMPACT FEE INPUT VARIABLES

Factors used to derive Frederick County’s school impact fees are summarized in Figure 16. Impact fees for schools are based on student generation rates (i.e., public school students per housing unit) and are only implemented on residential development. Level-of-service standards are based on current costs per square foot of school building, acres of the school land, and buses as described in the previous sections and summarized below.

The gross capital cost per student is the sum of the cost per student for each component. For example, for the elementary school portion, the calculation is as follows: \$32,019 [building area] + \$1,280 [acres of land] + \$873 [buses] = \$34,172 gross capital cost per student.

The net capital cost per student is the sum of the gross capital cost per student and the recommended principal payment credits. Continuing with the elementary school example, the calculation is as follows:

$\$34,172$ [gross capital cost per student] - $\$3,619$ [future principal payments] = $\$30,553$ net capital cost per student. The same approach is followed for middle and high schools.

Figure 16: School Impact Fee Input Variables

| Public School Students per Housing Unit | School Level | | | TOTAL |
|---|-------------------|---------------|--------------|-------------|
| | Elementary K-5 | Middle 6-8 | High 9-12 | |
| Single Family | 0.20 | 0.10 | 0.14 | 0.44 |
| Townhouse / Duplex | 0.27 | 0.11 | 0.13 | 0.51 |
| Multi-family | 0.13 | 0.04 | 0.05 | 0.22 |

| Current Level of Service Standards | | | |
|---|------------------|------------------|------------------|
| Component | Elementary | Middle | High |
| School Buildings | | | |
| Sq Ft per Student | 117.60 | 142.70 | 156.30 |
| Capital Cost per Square Foot | \$272 | \$236 | \$229 |
| Cost per Student | \$32,019 | \$33,711 | \$35,787 |
| Land | | | |
| Acreage per Student | 0.032 | 0.029 | 0.033 |
| Capital Cost per Acre | \$40,000 | \$40,000 | \$40,000 |
| Cost per Student | \$1,280 | \$1,160 | \$1,320 |
| Buses | | | |
| Buses per Student | 0.01 | 0.01 | 0.01 |
| Capital Cost per Bus | \$87,266 | \$87,266 | \$87,266 |
| Cost per Student | \$873 | \$873 | \$873 |
| Gross Capital Cost per Student | \$34,172 | \$35,744 | \$37,980 |
| Principal Payment Credit Per Student | (\$3,619) | (\$3,619) | (\$3,619) |
| Net Local Capital Cost per Student | \$30,553 | \$32,125 | \$34,361 |

MAXIMUM SUPPORTABLE SCHOOL IMPACT FEES

Figure 17 shows the schedule of maximum supportable impact fees for Frederick County Schools. The fees are calculated by multiplying the student generation rate for each housing type (shown in Figure 16) by the net capital cost per student for each type of school. Each component is then added together to derive the total school impact fee.

For example, for a single family unit, the elementary school portion of the fee is calculated by multiplying the student generation rate of .20 by the net capital cost per elementary student of \$30,553, which results in \$6,110 per single family unit. This is repeated for the other school levels. Totals for the three school

levels of the fee are added together to calculate the total fee per single family detached unit of \$14,132 (\$6,110 + \$3,212 + \$4,810 = \$14,132). This is repeated for each housing unit type.

Figure 17: Maximum Supportable School Impact Fees

| Proposed School Impact Fees: Frederick County School District | | | | | |
|--|--------------------------|----------------------|---------------------|-----------------|--------------------------------|
| Housing Unit Type | Elementary <i>K-5</i> | Middle <i>6-8</i> | High <i>9-12</i> | TOTAL | Increase/ <i>(Decrease)</i> |
| Single Family | \$6,110 | \$3,212 | \$4,810 | \$14,132 | (\$615) |
| Townhouse / Duplex | \$8,249 | \$3,533 | \$4,466 | \$16,248 | \$1,246 |
| Multi-family | \$3,971 | \$1,285 | \$1,718 | \$6,974 | \$683 |

MAXIMUM SUPPORTABLE SCHOOL IMPACT FEES BY COMPONENT

Figure 18 shows the schedule of recommended impact fees by component (e.g. land, buses, construction).

Figure 18. Maximum Supportable School Impact Fees: By Component

| Proposed School Impact Fees: Building Component | | | | |
|--|--------------------------|----------------------|---------------------|-----------------|
| Housing Unit Type | Elementary <i>K-5</i> | Middle <i>6-8</i> | High <i>9-12</i> | TOTAL |
| Single Family | \$5,725 | \$3,029 | \$4,532 | \$13,287 |
| Townhouse / Duplex | \$7,729 | \$3,332 | \$4,208 | \$15,269 |
| Multi-family | \$3,721 | \$1,212 | \$1,619 | \$6,552 |

| Proposed School Impact Fees: Land Component | | | | |
|--|--------------------------|----------------------|---------------------|--------------|
| Housing Unit Type | Elementary <i>K-5</i> | Middle <i>6-8</i> | High <i>9-12</i> | TOTAL |
| Single Family | \$229 | \$104 | \$167 | \$500 |
| Townhouse / Duplex | \$309 | \$115 | \$155 | \$579 |
| Multi-family | \$149 | \$42 | \$60 | \$250 |

| Proposed School Impact Fees: Bus Component | | | | |
|---|--------------------------|----------------------|---------------------|--------------|
| Housing Unit Type | Elementary <i>K-5</i> | Middle <i>6-8</i> | High <i>9-12</i> | TOTAL |
| Single Family | \$156 | \$78 | \$111 | \$345 |
| Townhouse / Duplex | \$211 | \$86 | \$103 | \$400 |
| Multi-family | \$101 | \$31 | \$39 | \$172 |

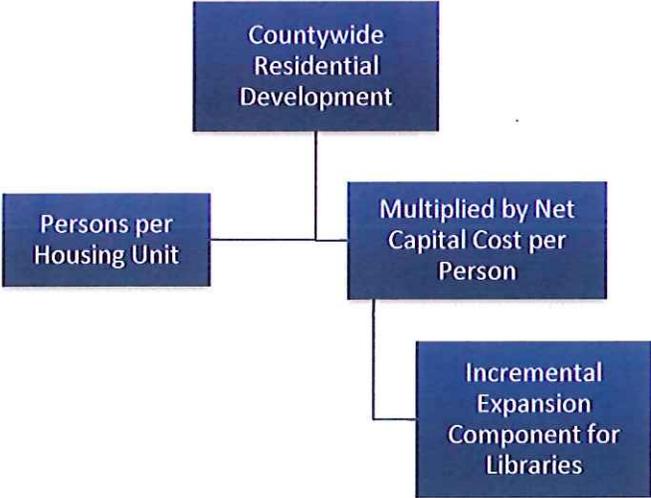
LIBRARY IMPACT FEE

The county requested the calculation of a library impact fee. The demand for libraries is solely generated by residential development. The Frederick County Public Libraries provides a main library and 7 branches throughout the County. They all serve all residents of the County which is why a countywide impact fee is appropriate.

METHODOLOGY

Impact fees for libraries are derived from an incremental expansion approach. As shown in Figure 19, the Library impact fee for residential development are calculated on a per capita basis, and then converted to an appropriate amount for each housing unit size threshold, based on persons per housing unit. It is the County's intention to use the library impact fee to fund new growth's share of the construction of Linganore Town Center, Middletown, Myersville, and Walkersville libraries. However, the use of the incremental expansion methodology is based on the existing County level of service. Therefore, any portion of the aforementioned projects that exceed the amount collected from impact fees will be funded through general revenues or grants.

Figure 19: Library Impact Fee Methodology Chart



DEMAND INDICATOR BY TYPE OF HOUSING UNIT

For the library impact fee calculations, TischlerBise used average persons per housing unit. As shown in Figure 20, TischlerBise derived persons by housing unit using the latest (2015) ACS Public Use Microdata Sample (PUMS) unweighted sample for Frederick County. The PUMS data is used in order to determine persons per housing unit for the three housing unit types in Frederick County, as the long form data published by US Census Bureau does not distinguish between single family-detached units and single

family-attached (townhomes). To calculate the Person Per Housing Unit (PPHU), persons (10,901) is divided by housing units (4,298). Single family dwelling units averaged 2.72 persons per housing unit. Townhouse/Duplex units averaged 2.48 persons per housing unit and Multifamily units averaged 1.54.

Figure 20: Population by Type of Housing

| Type of Unit | Persons | Housing Units | PPHU |
|----------------------|---------------|---------------|-------------|
| Single Family [1] | 8,203 | 3,021 | 2.72 |
| Townhouse/Duplex [2] | 1,933 | 781 | 2.48 |
| Multifamily [3] | 765 | 496 | 1.54 |
| Total | 10,901 | 4,298 | 2.54 |

[1] Single Family detached and mobile home

[2] Single Family attached and 2 unit structures

[3] All other

Source: US Census Bureau, Public Use Microdata Sample Unweighted Sample

LIBRARY LEVEL OF SERVICE AND COSTS

Library Space

According to County staff the approximate cost per square foot for construction of new libraries is estimated to \$381 per square foot. This is the average cost for the projected County share of the cost of the current Walkersville expansion and projected costs for planned libraries (i.e. Lingamore Town Center and Middletown, and Walkersville), which is shown below in Figure 21.

Figure 21: Projected Library Construction Costs

| Buildings | Square Feet | Cost of New Library | | | County Cost per Square Feet |
|------------------------------|---------------|---------------------|-------------|---------------------|-----------------------------|
| | | Total | State | County | |
| Linganore Town Center Branch | 25,000 | \$11,355,970 | \$3,000,000 | \$8,355,970 | \$334 |
| Middletown Branch | 15,250 | \$7,505,042 | \$1,500,000 | \$6,005,042 | \$394 |
| Myersville Branch | 6,000 | \$3,927,662 | \$750,000 | \$3,177,662 | \$530 |
| Walkersville Branch | 15,250 | \$6,954,633 | \$1,040,633 | \$5,914,000 | \$388 |
| TOTAL | 61,500 | \$29,743,307 | | \$23,452,674 | \$381 |

As shown in Figure 22, the County will have an inventory of library space totaling 165,850 square feet (this includes the current expansion of the Walkersville Branch currently under construction). This equates to a level of service of 0.65 square feet per person when compared to the current population estimate of 255,020 (165,850/255,020). As shown in Figure 22, 100 percent of the demand for additional Library space is attributable to residential development. To calculate the cost of library space per demand unit, the cost per square foot (\$381) is multiplied by the current level of service (.65 per person), resulting in a cost per demand unit of \$247.78.

Figure 22: Incremental Expansion Level of Service – Library Space

| Branch | Square Feet |
|--------------------------------|----------------|
| Headquarters Library | 66,000 |
| Brunswick Branch | 15,000 |
| Emmitsburg Branch | 5,600 |
| Middletown Branch | 2,500 |
| Point of Rocks Branch | 1,500 |
| Thurmont Branch | 25,000 |
| Urbana Branch | 25,000 |
| Walkersville Branch** | 25,250 |
| | 165,850 |
| Project Cost per Sq Ft* | \$381 |

| Residential Share | 2017 Demand Units | Cost per Demand Unit |
|-------------------------------|-------------------|----------------------|
| 100% | 255,020 Persons | \$247.78 |
| Square Feet Per Person | 0.65 | |

*Based on total project costs for Linganore Town Center, Middletown, Myersville, and Walkersville.

**Assumes the expanded Branch opening in the Spring of 2018

Collections

As shown in Figure 23, the County has an inventory of 592,899 items in its collection, which equates to a level of service of 2.32 materials per person when compared to the current population estimate of 255,020 (592,899/255,020). The County plans to increase library space as well as collection materials in the future as development continues.

According to staff, library materials currently have an average cost of \$22.44 per item (books, audiovisuals, periodicals). To calculate the cost of collection material per demand unit, the cost per collection material (\$22.44) is multiplied by the current level of service (2.32 per person), resulting in a cost per demand unit of \$52.17.

Figure 23: Incremental Expansion Level of Service – Collections

| Collection Materials | # of units |
|----------------------|----------------|
| Books | 427,138 |
| Audiovisual | 165,042 |
| Periodicals | 719 |
| TOTAL | 592,899 |
| Unit Price | \$22.44 |

| Residential Share | 2017 Demand Units | Collection Items Per Person | Cost per Demand Unit |
|-------------------|-------------------|-----------------------------|----------------------|
| 100% | 255,020 Persons | 2.32 | \$52.17 |

LIBRARY CAPITAL IMPROVEMENT NEEDS TO SERVE GROWTH

Ten-year growth projections for Frederick County suggest the County will add 39,640 new residents. In order to maintain current levels of service for libraries space and collections, the County will need to make incremental investments. Shown in Figure 24 is the square footage and collection materials needed to maintain current levels of service for libraries and the total investment necessary based on 10-years of population growth. It is projected that new growth will generate demand for an additional 25,780 square feet of building area, with a an estimated cost of approximately \$9.8 million. It is projected the County will need another 92,160 collection items at a cost of approximately \$2 million.

Figure 24: Projected Increase in Libraries

| Year | Library Needs to Maintain Current Standards | | |
|--|---|------------------------|---------------------|
| | Level of Service: | | 2.32 |
| | Total Population | Square Feet of Library | Collections |
| 2017 | 255,020 | 165,850 | 592,899 |
| 2018 | 259,280 | 168,620 | 602,803 |
| 2019 | 263,540 | 171,391 | 612,707 |
| 2020 | 267,800 | 174,161 | 622,611 |
| 2021 | 271,980 | 176,880 | 632,330 |
| 2022 | 276,160 | 179,598 | 642,048 |
| 2023 | 280,340 | 182,317 | 651,766 |
| 2024 | 284,520 | 185,035 | 661,484 |
| 2025 | 288,700 | 187,753 | 671,202 |
| 2026 | 291,680 | 189,692 | 678,130 |
| 2027 | 294,660 | 191,630 | 685,059 |
| Ten-Year Increase => | 39,640 | 25,780 | 92,160 |
| Library Building Cost => | \$9,822,000 | | |
| Collection Materials Cost => | | | \$2,068,000 |
| Total Library Cost => | | | \$11,890,000 |

CREDIT FOR FUTURE PRINCIPAL PAYMENTS

Because Frederick County debt-financed recent Library capacity expansions, a credit is included for future principal payments on outstanding debt. A credit is necessary since new residential units that will pay the impact fee will also contribute to future principal payments on this remaining debt through property taxes, income taxes and other revenue . A credit is not necessary for interest payments because interest costs are not included in the impact fee.

County staff provided outstanding debt for Frederick County Libraries. As shown in Figure 25, outstanding principal from school construction projects is estimated at approximately \$14.4 million. Annual principal payments are divided by projected County population in each year to get a per person credit. For example, in the 2018 (FY2018), the total principal to be paid of \$1,823,324 is divided by projected population of 259,280 for a payment per person of \$7.03. To account for the time value of money, annual payments per person are discounted using a net present value formula based on an average current interest rate of 2.3%. The total net present value of future principal payments per person are \$47.06. This amount is subtracted from the gross capital cost per person to derive a net capital cost per person.

Figure 25: Principal Payment Credit

| <i>Fiscal Year</i> | <i>Principal Payments</i> | <i>Population</i> | <i>Credit Per Person</i> |
|--------------------|---------------------------|-------------------|--------------------------|
| FY18 | \$1,823,324 | 259,280 | \$7.03 |
| FY19 | \$1,996,149 | 263,540 | \$7.57 |
| FY20 | \$1,996,149 | 267,800 | \$7.45 |
| FY21 | \$1,995,768 | 271,980 | \$7.34 |
| FY22 | \$1,556,761 | 276,160 | \$5.64 |
| FY23 | \$725,657 | 280,340 | \$2.59 |
| FY24 | \$754,510 | 284,520 | \$2.65 |
| FY25 | \$654,698 | 288,700 | \$2.27 |
| FY26 | \$679,862 | 291,680 | \$2.33 |
| FY27 | \$756,352 | 294,660 | \$2.57 |
| FY28 | \$776,580 | 297,640 | \$2.61 |
| FY29 | \$347,387 | 300,620 | \$1.16 |
| FY30 | \$199,889 | 303,600 | \$0.66 |
| FY31 | \$209,941 | 306,760 | \$0.68 |
| | \$14,473,027 | | \$52.55 |
| | | Discount Rate | 2.30% |
| | | Net Present Value | \$47.06 |

*Population projection is from Round 9.0 MWCOG
Cooperative Forecasts*

LIBRARY INPUT VARIABLES AND MAXIMUM SUPPORTABLE LIBRARY IMPACT FEE

Figure 26 provides a summary of the input variables (described in the sections above) used to calculate the net capital cost per person for libraries.

The Library impact fees are the product of persons per housing unit, multiplied by the total net capital cost per person. An example of the calculation for a housing unit (using Single Family) is: the net capital cost per person (\$252.88) multiplied by the persons per housing unit for that housing type (2.72) to arrive at the impact fee of \$687.

Figure 26: Maximum Supportable Library Impact Fee

| Persons Per Housing Unit | Standards: |
|--------------------------|-----------------|
| Single Family | 2.72 |
| Townhouse / Duplex | 2.48 |
| Multi-family | 1.54 |
| | Per Person |
| Building Cost | \$247.78 |
| Collection Cost | \$52.17 |
| Principal Payment Credit | (\$47.06) |
| Net Capital Cost | \$252.89 |

| Residential Type | Proposed Fee | Current Fee | Increase/ (Decrease) |
|--------------------|--------------|-------------|----------------------|
| Single Family | \$687 | \$768 | (\$81) |
| Townhouse / Duplex | \$627 | \$695 | (\$68) |
| Multi-family | \$389 | \$385 | \$4 |

**Source: Tables B25024, B25032, B25033, and B26001. 2015 American Community Survey, U.S. Census Bureau.*

IMPLEMENTATION AND ADMINISTRATION

TischlerBise recommends that Frederick County continue to place impact fees in a separate fund and only use these funds for growth-related infrastructure, as specified in Frederick County's impact fee ordinance. Interest earned on the separate fund should be credited to the fund. County staff should continue prepare annual statements on impact fee collections and expenditures.

All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of periodic evaluation and update of fees every 3-5 years.

If a specific development proposal is expected to have significantly different demand generators than those used in this study, the Frederick County may allow or require a developer to submit an independent impact fee analysis with adequate documentation of alternative factors.

If a developer constructs or provides a system improvement that was included in the fee calculations, Frederick County will either reimburse the developer, or provide a credit against the fees for the system improvement, as specified in an approved development agreement. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. Frederick County should only agree to pay the lesser of the developer's actual cost or the estimated cost used in the impact fee analysis. If the County pays more than the cost used in the fee analysis, there will be insufficient fee revenue.

APPENDIX A: DEMOGRAPHIC DATA

TischlerBise prepared current demographic *estimates* and future development *projections* for residential development. Demographic data for FY16-17 (beginning July 1, 2016) are used in calculating levels-of-service (LOS) provided to existing development. Although long-range projections are necessary for planning infrastructure systems, a shorter five to ten-year time frame is critical for the impact fees analysis.

GROWTH INDICATORS

Development projections and growth rates are summarized in Figure 1A. Housing unit projections are based on an estimate in 2012 and annual building permits, provided by Frederick County Division of Planning & Permitting. Total students from 2015, and 2017 to 2025 are from the Educational Facilities Master Plan (see pages 29-30, FCPS, August 2017). These projections will be used to estimate impact fee revenue and to indicate the anticipated need for growth-related infrastructure. However, impact fee methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, impact fees revenues will also decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the County will receive an increase in impact fee revenue, but will also need to accelerate capital improvements to keep pace with development.

During the next five years, the impact fee study assumes an average increase of 1,395 housing units per year (linear annual growth rate of 1.44%). TischlerBise derived housing units by using yearly building permits for 2013-2016 based on an estimate of total housing units in 2012 and average yearly building permits for the last five years for 2017 to 2025. Public school students are expected to increase by an average of 390 students per year (linear growth rate of 1.00%) based on projections from the Educational Facilities Master Plan from the Frederick County Public Schools. TischlerBise projected total student enrollment to be higher than FCPS projected. The projection was based on the projected housing units and the average pupil yield rates from the County.

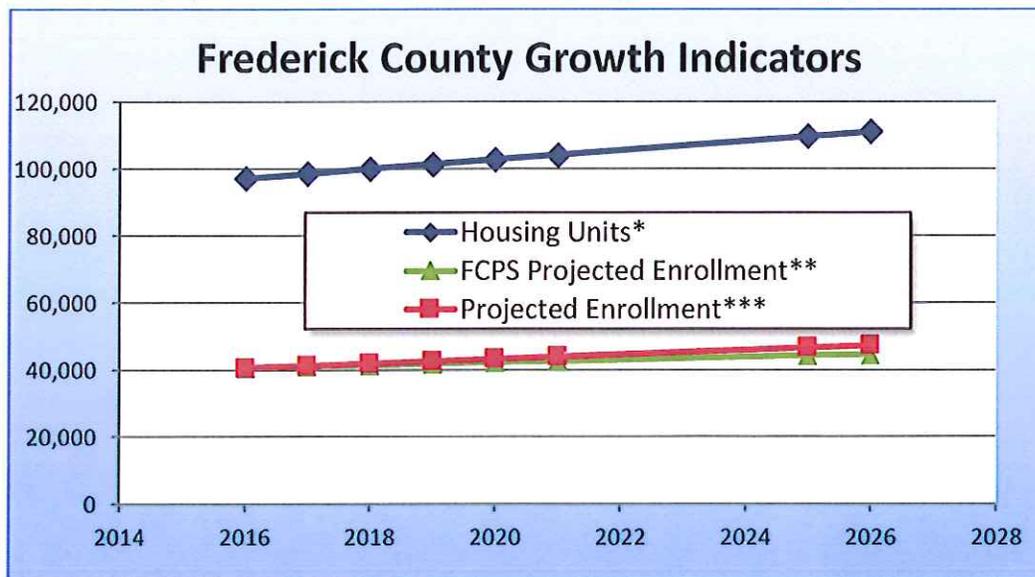
Figure 1A – Short-Range Growth Indicators

| | Year | | | | | | | | 2016 to 2026 Average Annual | |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------------------------------|--------------------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2025 | 2026 | Increase | Linear Growth Rate |
| | FY16-17 | FY17-18 | FY18-19 | FY19-20 | FY20-21 | FY21-22 | FY25-26 | FY26-27 | | |
| Housing Units* | 97,187 | 98,582 | 99,978 | 101,373 | 102,768 | 104,163 | 109,744 | 111,140 | 1,395 | 1.44% |
| FCPS Projected Enrollment** | 40,582 | 41,048 | 41,338 | 41,769 | 42,212 | 42,604 | 44,245 | 44,486 | 390 | 1.00% |
| Projected Enrollment*** | 40,582 | 41,256 | 41,931 | 42,605 | 43,279 | 43,954 | 46,651 | 47,326 | 674 | 1.66% |

* Source: Frederick County Division of Planning & Permitting

**Total Equated Students from Frederick County Public Schools (FCPS)

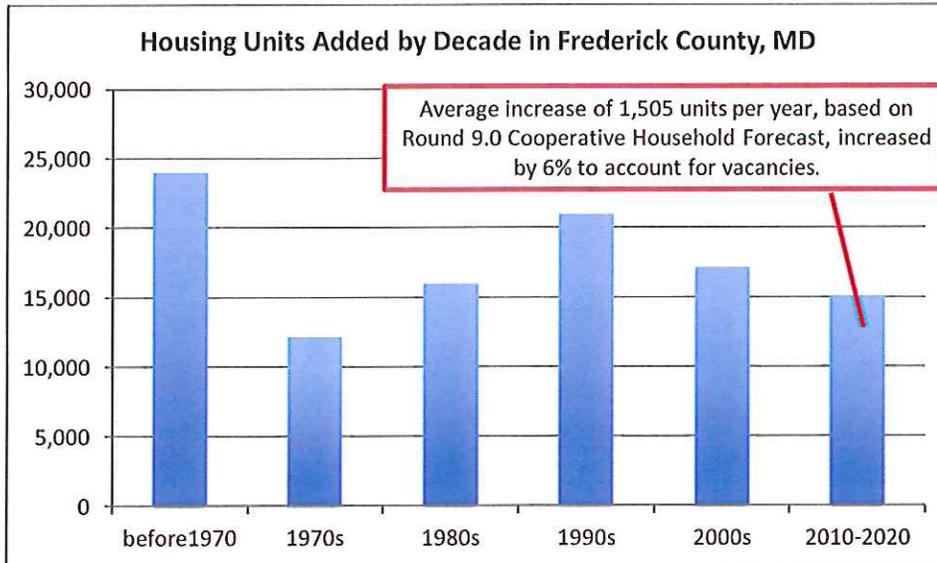
***TischlerBise projected students based on projected housing units and average pupil yield rates



RESIDENTIAL CONSTRUCTION ACTIVITY

As shown in Figure 2A, annual housing units have fluctuated over the decades. According to the Round 9.0 cooperative forecast, Frederick County expects to add 1,505 housing units per year from 2010 to 2020, assuming the current vacancy rate of approximately 6% holds constant.

Figure 2A – Housing Units by Decade



Source for 1990s and earlier is Table B25034, American Community Survey, 2015.

Over the past five calendar years, Frederick County added an average of 1,395 housing units per year, as shown in Figure 3A.

Figure 3A – Permitted Housing Units Over Past Five Years

| Calendar Year | Residential Building Permits | | | Total |
|---------------------|------------------------------|--------------|--------------|--------------|
| | SFD/MH | Th/Dx | MF | |
| 2013 | 405 | 312 | 522 | 1,239 |
| 2014 | 389 | 352 | 577 | 1,318 |
| 2015 | 371 | 358 | 429 | 1,158 |
| 2016 | 519 | 389 | 958 | 1,866 |
| Total | 1,684 | 1,411 | 2,486 | 5,581 |
| Housing Mix => | 30.17% | 25.28% | 44.54% | |
| Avg Anl Increase => | 421 | 353 | 622 | 1,395 |

Data Source: Frederick County Division of Planning and Permitting.