

# Cash Proffer Study

Prepared for:

## Prince George County, Virginia



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## Executive Summary

TischlerBise was retained by Prince George County, Virginia to analyze potential cash proffer funding to meet the demands generated by new development. TischlerBise evaluated cash proffers for six types of public facilities: schools, parks, general government, fire, public safety and libraries. Methodologies and calculations are presented in this report as supporting documentation for future revisions to the Cash Proffer System in Prince George County.

Cash proffers are voluntary one-time monetary commitments made at the time of rezoning to offset the impact of the rezoning. Payments of the cash proffers are typically made when a building permit is issued. The funds collected from cash proffers are used to construct capital improvements needed to accommodate new development. Cash proffer amounts represent new growth's fair share of capital facility needs.

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for each type of cash proffer. Specific capital costs have been identified using local data and current dollars. The formula used to calculate each cash proffer amount is diagrammed in a flow chart at the beginning of each section. Also, for each type of cash proffer the report includes a summary table indicating the specific factors used to derive the amounts. These factors are referred to as "Level of Service" (LOS) standards. School, park and library proffers are based on residential demand only; general government, fire and public safety proffers are based on both residential and nonresidential demand.

## **METHODOLOGIES**

There are three basic *methods* used to calculate cash proffers. The **incremental expansion method** documents the current level of service for each type of public facility in both quantitative and qualitative measures. The intent is to use cash proffer revenue to expand or provide additional facilities, as needed to accommodate new development, based on the current cost to provide capital improvements. The **plan-based method** is commonly used for public facilities that have adopted plans or engineering studies to guide capital improvements, such as utility systems. A third approach, known as the **cost recovery method**, is based on the rationale that new development is paying for its share of the useful life and remaining unused capacity of an existing facility. All three methods are used in calculating Prince George County's cash proffers.

A general requirement common to cash proffer methodologies is the evaluation of credits. Two types of credits should be considered: **future revenue credits** and **site-specific credits**. Future revenue credits are necessary to avoid potential double payment situations arising from a one-time cash proffer payment plus the payment of other revenues that may also fund growth-related capital improvements.

Future revenue credits are dependent upon the cash proffer methodology used in the cost analysis. As new development will provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future principal payments on existing debt for public facilities. A credit is not necessary for interest payments if interest costs are not included in the cash proffers. For Prince George County, a future revenue credit is necessary for schools, general government, fire, public safety and library cash proffers – due to outstanding or planned debt for capacity enhancement projects.

The second type of credit is a site-specific credit for system improvements that have been included in the cash proffer calculations. Policies and procedures related to site-specific credits for system improvements should be addressed in the County Cash Proffer Policy. However, the general concept is that developers may be eligible for site-specific credits or reimbursements *only if they provide system improvements that have been included in the cash proffer calculations*. Project improvements normally required as part of the development approval process are not eligible for credits against cash proffers.

### **CASH PROFFER CALCULATIONS**

As noted above, TischlerBise calculated cash proffers for six types of public facilities for Prince George County: schools, parks, general government, fire, public safety and libraries. All types of development – residential and non-residential – create a demand for capital facilities. This analysis determines those capital needs – and the related costs – brought about by new development. The resulting cash proffer amount represents each type of land uses's fair share of the capital cost for different improvements. For schools, parks and libraries, residential development is the only type of land use that drives the need for additional facilities. The need for general government, fire and public safety improvements, however, is brought about by both residential and non-residential development. Therefore, calculations for these cash proffers are based on both residential and non-residential demand, with the resulting cash proffer amount reflecting each type of development's fair share of related costs.

#### *Schools*

The school cash proffer is calculated based on current number of public school students per housing unit in Prince George County and reflects all housing units, local cost for school buildings and land, and current levels of service. An incremental expansion approach is used to calculate the elementary and high school components of the building construction costs, land and vehicles and equipment. The cost recovery approach is used to calculate the middle school construction component of the cash proffer. The plan-based approach is used in calculating a fee component for two planned school facilities: the school board/administrative facility and the bus garage. A credit for future principal payments on outstanding and planned County debt for school improvements is included to avoid future double payments since new residential units that pay school cash proffers will also contribute to future principal payments on school debt through property taxes. The maximum supportable recommended cash proffer amounts for schools are: \$9,598 for single family detached housing units and \$8,167 for all other housing units.



### *Parks*

The parks and recreation cash proffer is allocated to residential development only and utilizes the incremental expansion method. The cash proffer is calculated based on household size and capital cost per person for parkland, park improvements and vehicles and equipment. There is no outstanding debt for park facilities, so a credit is not included for this component. The maximum supportable recommended cash proffer amounts for parks are: \$256 for single family detached housing unit and \$241 for all other housing types.

### *General Government*

The general government cash proffer uses the cost recovery method to calculate new growth's contribution to existing capacity in the County Administration Building. The incremental expansion approach is used for all other general government facilities and for vehicles and equipment. The cash proffer amount is based on household size, costs (original or current, depending on the methodology used) per person and per job for general government buildings and for vehicles and equipment. A future principal payment credit is included to account for outstanding debt on general government facility improvements. The maximum supportable recommended cash proffer amounts for general government are: \$1,200 for single family detached housing units and \$1,128 for all other housing types. Non-residential cash proffers vary with the specific use.

### *Fire*

The fire cash proffer uses the cost recovery method to calculate new growth's contribution to existing capacity in the fire administration area of the County Administration Building and the County's fire vehicles and equipment. The cash proffer amount is based on household size, costs (original or current, depending on the methodology used) per person and per trip for fire buildings and for vehicles and equipment. A future principal payment credit is included to account for outstanding debt on fire facility improvements. The maximum supportable recommended cash proffer amounts for fire are: \$978 for single family detached housing units and \$920 for all other housing types. Non-residential cash proffers vary with the specific use.

### *Public Safety*

The plan-based approach is used for the planned animal shelter, which is allocated 100% to residential. The incremental expansion approach is used for all public safety (police and sheriff) facilities and vehicles and equipment. The cash proffer amount is based on household size, current costs per person and per trip for public safety buildings and for vehicles and equipment. A future principal payment credit is included to account for outstanding and planned debt on public safety facility improvements. The maximum supportable recommended cash proffer amounts for public safety are: \$328 for single family detached housing units and \$308 for all other housing types. Non-residential cash proffers vary with the specific use.

### *Libraries*

The library cash proffer is allocated to residential development only. The plan-based methodology is used for the planned courthouse library and the incremental expansion method is used for all other components. The cash proffer is calculated based on household

size and capital cost per person for facilities, library materials and vehicles and equipment. A future principal payment credit is included to account for the planned debt financing of the courthouse library. The maximum supportable recommended cash proffer amounts for libraries are: \$224 for single family detached housing unit and \$211 for all other housing types.

**SUMMARY OF MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS**

Figure 1 provides a schedule of the maximum supportable recommended cash proffer amounts for residential and non-residential development in Prince George County. The cash proffers shown are for schools, parks, general government, fire, public safety and libraries. For a single family housing unit, the maximum supportable cash proffer amount is \$12,585 and for all other housing units, \$10,974. Non-residential cash proffers vary based on the use and/or size of the development. The maximum supportable cash proffer for a commercial/shopping center from 100,001-200,000 sq. ft. is \$2,024 per 1,000 sq. ft., while the maximum supportable cash proffer for warehousing is \$435 per 1,000 sq. ft.

**Figure 1: Schedule of Maximum Supportable Cash Proffers**

Per Housing Unit							
	Schools	Parks	General Govt.	Fire	Public Safety (Sheriff & Police)	Libraries	Total
Single Family Detached	\$9,598	\$256	\$1,200	\$978	\$328	\$224	\$12,585
All Other Housing	\$8,167	\$241	\$1,128	\$920	\$308	\$211	\$10,974
Per 1,000 Square Feet of Floor Area							
	Schools	Parks	General Govt.	Fire	Public Safety (Sheriff & Police)	Libraries	Total
Com / Shop Ctr 10,000 SF or less	N/A	N/A	\$581	\$2,260	\$853	N/A	\$3,694
Com / Shop Ctr 10,001-25,000 SF	N/A	N/A	\$581	\$1,913	\$722	N/A	\$3,216
Com / Shop Ctr 25,001-50,000 SF	N/A	N/A	\$499	\$1,662	\$627	N/A	\$2,788
Com / Shop Ctr 50,001-100,000 SF	N/A	N/A	\$436	\$1,388	\$524	N/A	\$2,348
Com / Shop Ctr 100,001-200,000 SF	N/A	N/A	\$387	\$1,188	\$448	N/A	\$2,024
Com / Shop Ctr 200,001-400,000 SF	N/A	N/A	\$349	\$1,010	\$381	N/A	\$1,740
Office / Inst 10,000 SF or less	N/A	N/A	\$782	\$702	\$265	N/A	\$1,748
Office / Inst 10,001-25,000 SF	N/A	N/A	\$724	\$568	\$214	N/A	\$1,507
Office / Inst 25,001-50,000 SF	N/A	N/A	\$682	\$485	\$183	N/A	\$1,350
Office / Inst 50,001-100,000 SF	N/A	N/A	\$644	\$413	\$156	N/A	\$1,213
Office / Inst 100,001 - 200,000 SF	N/A	N/A	\$609	\$352	\$133	N/A	\$1,094
Business Park	N/A	N/A	\$552	\$395	\$149	N/A	\$1,096
Light Industrial	N/A	N/A	\$403	\$216	\$81	N/A	\$700
Warehousing	N/A	N/A	\$223	\$154	\$58	N/A	\$435
Manufacturing	N/A	N/A	\$312	\$118	\$45	N/A	\$475

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Results are discussed in the report using one-and two-digit 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).

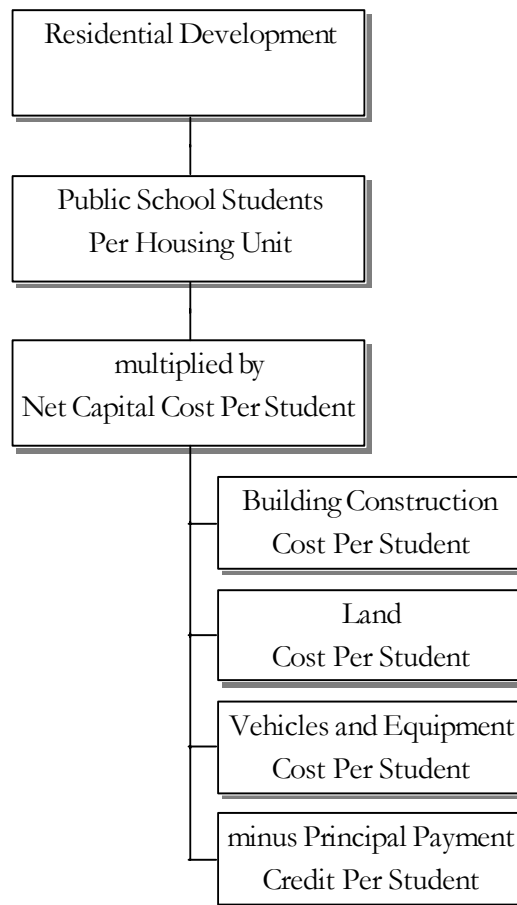
All costs in the cash proffer calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of cash proffers. One approach is to adjust for inflation in costs by means of an index like the one published by Marshall Swift or the Consumer Price Index. This index could be applied against the calculated cash proffers. If cost estimates change significantly, the cash proffers should be recalculated.

## Schools

### **METHODOLOGY**

The school cash proffer methodology is based on current public school student generation rates reflecting all housing units, local costs, and current level of service standards such as square feet and acreage per student. Figure 2 illustrates the methodology used to calculate the amount. A credit for future principal payments on existing debt and debt for a planned facility are included. Each component is discussed in turn in this chapter.

**Figure 2: School Cash Proffer Methodology Chart**



## **PUBLIC SCHOOL STUDENTS PER HOUSING UNIT**

TischlerBise used 2000 Census 5-Percent Public Use Microdata Sample (PUMS) files to estimate student generation rates for Prince George County. The term “student generation rate” refers to the number of public school students per housing unit in Prince George County. Public school students are a subset of school-age children, which includes students in private schools and home-schooled children. Student generation rates are calculated for single-family and all other housing units.

The student generation rates have been adjusted for local conditions using official enrollment data for Fall 2005 for the 2005-2006 school year and estimated housing units as of 2005 for Prince George County. (See Appendix for housing unit estimates). The rates are shown at the bottom of Figure 3 - .513 for a single family unit, and .454 for all other housing types. The 2006 adjusted rate for a single family unit is approximately 120% of the students per single family unit from the 2000 Census data referenced above (See Appendix for further detail on student generation rate calculations).

**Figure 3. Student Generation Rates**

<b>Prince George County Public School Students Per Housing Unit, 2000 (Census)</b>				
	<i>Elementary</i>	<i>Middle/Junior</i>	<i>High</i>	<i>All Grades</i>
	<i>K-5th Grades</i>	<i>6-9 Grades</i>	<i>10-12 Grades</i>	
Single Family Detached	0.174	0.141	0.111	0.427
All Other Housing Types	0.216	0.105	0.059	0.380

*Source: cross-tabulation by TischlerBise using Census Bureau, Year 2000 5% Public Use Microdata Sample for Prince George Public Use Microdata Area (PUMA) VA 02300.*

<b>Prince George County Public School Students Per Housing Unit, 2005-2006 (Calibrated to Local Conditions)</b>				
<i>Elementary School (Grades K-5) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	1,524		0.202
All Other Housing Types	3,449	744		0.250
<b>TOTAL</b>	<b>12,200</b>	<b>2,268</b>	<b>2,626</b>	
<i>Middle/Junior High School (Grades 6-9) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	1,236		0.184
All Other Housing Types	3,449	361		0.136
<b>TOTAL</b>	<b>12,200</b>	<b>1,596</b>	<b>2,075</b>	
<i>High School (Grades 10-12) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	975		0.128
All Other Housing Types	3,449	204		0.068
<b>TOTAL</b>	<b>12,200</b>	<b>1,179</b>	<b>1,351</b>	

<b>Prince George County Public School Students Per Housing Unit, 2005-06 (Adjusted)</b>				
	<i>Elementary</i>	<i>Middle/Junior</i>	<i>High</i>	<i>All Grades</i>
	<i>K-5th Grades</i>	<i>6-9 Grades</i>	<i>10-12 Grades</i>	
Single Family Detached	0.202	0.184	0.128	0.513
All Other Housing Types	0.250	0.136	0.068	0.454

\*See Appendix 1 for description of current housing unit estimates.

\*\*Official enrollments as of Fall 2005 per Prince George County Public Schools.

*Source: cross-tabulation by TischlerBise using Census Bureau, Year 2000 5% Public Use Microdata Sample for Prince George Public Use Microdata Area (PUMA) VA 02300 and calibrated to Prince George County School enrollment.*

It is anticipated that capacity projects will be needed to serve future elementary and high school student enrollments. Therefore, an incremental approach methodology is employed to develop the cash proffers for these components. The middle/junior high school

component uses as a cost recovery approach, as the schools have existing capacity that new development will benefit from. The plan-based approach is used for the planned school board/administrative facility and the planned bus garage.

## **BUILDING AND SITE AREA LEVEL OF SERVICE AND COST STANDARDS – SCHOOLS**

The following three figures provide a current inventory of public schools in Prince George County. The data contained in these tables are used to determine the level of service (LOS) standards for school sites and buildings.

As indicated in Figure 4, elementary school buildings have a total of approximately 260,846 square feet of floor area on 85.4 acres. Total enrollment in all elementary schools from Fall 2005 is 2,626. Effective capacity is drawn from the Prince George County Public Schools Capital Improvement Plan (June 2005) prepared by Moseley and Associates. Per the study, effective capacity is defined as “the realistic and practical number of students that the school facility can house, with the planning assumption that all trailers are eliminated and that all programs are contained within school buildings.” Since enrollment exceeds effective capacity by 1%, enrollment will be used in order to conservatively estimate the level of service.

The current level of service standards for elementary schools are 99 square feet per student (260,846 SF divided by 2,626 enrolled students) and .033 acres of land per student (85.4 divided by 2,626 enrolled students).

Cost per square foot is provided in the Capital Improvement Study at \$179/sq. ft. (adjusted for inflation), providing for a building cost per elementary school student of \$17,800 (\$179/sq. ft. multiplied by 99 square feet per student).

**Figure 4: Prince George County Elementary Schools Level of Service and Cost Standards**

<i>School</i>	<i>Grades</i>	<i>Site Acreage</i>	<i>Building Square Feet***</i>	<i>Fall 2005 Enrollment*</i>	<i>Effective Capacity**</i>	<i>Cost Per Sq. Ft.****</i>	<i>Total Replacement Cost</i>
<b>Elementary</b>							
David A. Harrison Elementary	Pre K-5	20.4	82,925	665	728	\$179	\$14,860,160
L.L. Beazley Elementary	Pre K-5	20.5	49,767	641	622	\$179	\$8,918,246
North Elementary	Pre K-5	13.5	20,725	310	189	\$179	\$3,713,920
South Elementary	Pre K-5	15	56,825	442	493	\$179	\$10,183,040
William A. Walton Elementary	Pre K-5	16	50,604	568	576	\$179	\$9,068,237
<b>TOTAL</b>		<b>85.4</b>	<b>260,846</b>	<b>2,626</b>	<b>2,608</b>	<b>\$179</b>	<b>\$46,743,603</b>

	<i>Acre/Student</i>	<i>SF/Student</i>	<i>Cost/Student</i>
LOS Per Student (current enrollment)	0.033	99	\$17,800

\*excludes Pre-K enrollment

\*\*Effective capacity is defined as "the realistic and practical number of students that the school facility can house, with the planning assumption that all trailers are eliminated and that all programs are contained within school buildings."

\*\*Pre-K not included in effective capacity calculation

\*\*\*Beazley and Walton Elementary Schools have low square foot per student ratio b/c the campus style design does not have any corridors. Building square feet does not include mobile/secondary structures on site. Excludes square footage for Pre-K classrooms (1025 sq. ft.) - 1 Pre-K class per elementary school.

\*\*\*\*Cost per sq. ft. to build an addition to Walton elementary school per June 2005 Capital Improvements Study conducted by Moseley Architects, inflated from \$160/sq. ft. for 2005 to \$179/sq. ft. for 2006 to account for increased construction costs (per Moseley study)



According to the School Capital Improvement Study, the Middle/Junior High Schools have capacity to accommodate the ten-year projected enrollments for grades 6-9. According to TischlerBise student enrollment projections, the Middle/Junior High Schools will be able to accommodate projected enrollments through 2014. New residential development will be served by this excess capacity, therefore a cost-recovery approach is used. The proffer amount may be utilized to pay the existing debt service for this over-sizing.

Figure 5 shows current square footage and costs for the two schools. As shown, the total original/renovation cost for the facilities was approximately \$31.6 million.

To calculate the level of service, the total square footage divided by projected student enrollment in 2014, resulting in 113 square feet per student. To determine the cost factor, the total cost is divided by the 2014 projected enrollment for a cost per student of \$12,898. This cost does not reflect the full replacement cost value of the schools, only original costs for construction and/or renovation.

**Figure 5: Prince George County Middle/Junior High School Level of Service and Cost Standards**

School	Grades	Site Acreage	Building Square Feet	2014 Projected Enrollment	Effective Capacity	Cost Per Sq. Ft.	Original Cost*
<b>Middle/Junior</b>							
J.E.J. Moore Middle School	6 and 7	75.0	158,036		1,250	\$123	\$19,400,000
N.B. Clements Junior High School	8 and 9	24.0	118,000		1,200	\$103	\$12,200,015
<b>TOTAL</b>		<b>99.0</b>	<b>276,036</b>	<b>2,448</b>	<b>2,450</b>	<b>\$113</b>	<b>\$31,600,015</b>

	Acre/Student	SF/Student	Cost/Student
LOS Per Student (current effective capacity)	0.040	113	\$12,898

\*Construction cost for the middle school; renovation and expansion costs for the 2001 capacity expansion and renovation of the Junior High School.

Level of service for the Prince George County high school is shown in Figure 6. The facility has a square footage of 212,977 and the site covers 51.4 acres. Total 2005 high school enrollment is 1,351 and the effective capacity is 1,381. As enrollment is slightly less than the school's effective capacity, effective capacity will be used in order to conservatively estimate the level of service.

The current level of service standards for high school is 154 square feet per student (212,977 SF divided by 1,381 effective capacity) and .037 acres of land per student (51.4 divided by 1,381 effective capacity).

Cost per square foot is provided in the Capital Improvement Study at \$179/sq. ft. (adjusted for inflation), providing for a building cost per high school student of \$27,636 (\$179/sq. ft. multiplied by 154 square feet per student).

**Figure 6: Prince George County High School Level of Service and Cost Standards**

<i>School</i>	<i>Grades</i>	<i>Site Acreage</i>	<i>Building Square Feet</i>	<i>Fall 2005 Enrollment</i>	<i>Effective Capacity*</i>	<i>Cost Per Sq. Ft.**</i>	<i>Total Replacement Cost</i>
<b>High School</b>							
Prince George High School	10, 11 and 12	51.4	212,977	1,351	1,381	\$179	\$38,165,478
<b>TOTAL</b>		<b>51.4</b>	<b>212,977</b>	<b>1,351</b>	<b>1,381</b>		<b>\$38,165,478</b>

	<i>Acre/Student</i>	<i>SF/Student</i>	<i>Cost/Student</i>
LOS Per Student (current effective capacity)	0.037	154	\$27,636

\*Effective capacity is defined as "the realistic and practical number of students that the school facility can house, with the planning assumption that all trailers are eliminated and that all programs are contained within school buildings."

\*\*Cost per sq. ft. to build an addition to Prince George High School per June 2005 Capital Improvements Study conducted by Moseley Architects, inflated from \$160/sq. ft. for 2005 to \$179/sq. ft. for 2006 to account for increased construction costs (per Moseley study).

**BUILDING AND SITE AREA LEVEL OF SERVICE AND COST STANDARDS – PLANNED SUPPORT FACILITIES**

Prince George County Schools plans to construct two support facilities: a school board/administrative office and a new bus garage. For these facilities, the plan-based approach is used to calculate this component of the school cash proffer.

Levels of service standards and the estimated cost for the school board/administrative office are shown in Figure 7. The facility is currently under construction, and will be 20,366 square feet in size. The cost for the school board/administrative office is estimated at \$131 per square foot for a total construction cost of \$2.6 million.

The cost per student of \$393 is derived by multiplying the total cost (\$2,663,000) by 100 percent (as school facilities are 100% attributable to residential development), then dividing by 6,778 students, the projected student enrollment in 2011. Capital costs are allocated to projected student enrollment in 2011 since it is estimated the facility will have adequate capacity for approximately 5 years into the future. The level of service standard is 3.00 square feet per student.

**Figure 7: School Board/Administration Facility Level of Service and Cost Standards**

	<i>BldgSF</i>	<i>Year Built</i>	<i>Cost/SF</i>	<i>Const. Cost*</i>
School Board Office - Administrative Facilities	20,366	2006	\$131	\$2,663,000
			Total	\$2,663,000
	Proportionate Share	2011 Demand Units	Sq. Ft. per Student	Cost per Student
Residential	100%	6,778 students	3.00	\$393

\*Source: Prince George County, List of Capital Expenditures through 2005 (prepared 1/3/06)

Levels of service standards and the estimated cost for the planned bus garage are shown in Figure 8. The facility is planned for construction in 2010, and will be 18,000 square feet in size. The cost for the bus garage is estimated at \$210 per square foot for a total construction cost of \$3.7 million. This cost includes land acquisition, utility installation, site development, transportation improvements and other related costs.

The cost per student of \$416 is derived by multiplying the total cost (\$3,773,000) by 100 percent (as school facilities are 100% attributable to residential development), then dividing by 6,778 students, the projected student enrollment in 2030. Capital costs are allocated to projected student enrollment in 2030 since it is estimated the facility will have adequate capacity for approximately 20 years into the future. The level of service standard is 1.98 square feet per student.

**Figure 8: Bus Garage Level of Service and Cost Standards**

	<i>BldgSF</i>	<i>Year Built</i>	<i>Cost/SF</i>	<i>Const. Cost*</i>
New Bus Garage	18,000	2010	\$210	\$3,773,000
			Total	\$3,773,000
	Proportionate Share	2030 Demand Units	Sq. Ft. per Student	Cost per Student
Residential	100%	9,078 students	1.98	\$416

Source: Prince George County Capital Improvement Plan

**SCHOOL BUSES AND OTHER VEHICLES**

Vehicles represent another major capital cost item that must be provided by Prince George County Schools in order to accommodate new development. According to the County, the current fleet of school buses and other vehicles has a total replacement cost of \$6.7 million, or an average cost of \$1,118 per student.

**Figure 9. School Buses and Other Vehicles**

<i>Item</i>	<i>Unit Count</i>	<i>Unit Cost*</i>	<i>Replacement Cost</i>
Regular Buses	82	\$57,000	\$4,674,000
Special Ed Buses	13	\$77,000	\$1,001,000
Sedans	25	\$22,000	\$550,000
SUVs	3	\$22,000	\$66,000
Vans	7	\$20,000	\$140,000
Pick up Trucks	4	\$18,000	\$72,000
Statebed Truck	1	\$28,000	\$28,000
Flat Bed Truck	1	\$30,000	\$30,000
Bucket Truck	2	\$35,000	\$70,000
Dump Truck	1	\$35,000	\$35,000
Box Truck	2	\$30,000	\$60,000
Refrigerated Truck	1	\$45,000	\$45,000
<b>TOTAL/AVERAGE</b>	<b>142</b>	<b>\$47,683</b>	<b>\$6,771,000</b>

	Proportionate Share	2005-2006 School Year Demand Units	Vehicles per Student	Cost per Student
Residential	100%	6,052 Students	0.02	\$1,118

*\*Prince George County Public Schools*

**CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current School Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$30,800) is allocated to the projected increase in student enrollment over the next five years. This results in a cash proffer study cost per demand unit of \$50.89 per student (\$30,800/605 students).

**CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON SCHOOL IMPROVEMENTS**

Because the County debt financed a portion of recent school construction costs and plans to use debt to finance the bus garage, TischlerBise recommends a credit for future principal

payments on outstanding debt. Prince George County Finance staff provided the amount of projected outstanding education-related debt for capacity projects and principal payment schedules. Existing debt for capacity projects includes Literary Fund Loans, Virginia Public School Authority bonds, and other bonds. The County expects to debt finance the planned bus garage, so an estimated credit is included for that component. The planned school board/administrative facility was paid from the County's fund balance, therefore a credit is not necessary for that facility.

Figure 10 provides the credit calculation based on the principal payments to be made by the County on the outstanding public school debt. A credit is necessary since new residential units that pay school cash proffers will also contribute to future principal payments on school debt through property taxes. To account for the time value of money, annual principal payments per student are discounted using a net present value formula based on the applicable discount rate (based on the true interest cost for each debt issuance).

The amount of the debt has been adjusted to reflect the portion of outstanding principal to be borne by residential property owners. Per Prince George County Finance staff, residential property currently represents 86% of the total value of real property in the County. Therefore, each fiscal year's outstanding principal for school capital projects is reduced to 86% of the total. The credit amount of \$2,619 will be subtracted from the gross capital cost per student to derive a net capital cost per student. Student enrollment projections are discussed in detail in the Appendix.



**Figure 10: Credit for Future Principal Payments**

**School Finance Bonds-Series 1997 (JEJ Moore)**

<i>Fiscal Year</i>	<i>Principal</i>	<i>Residential Share (86%)</i>	<i>Projected Enrollment</i>	<i>Payment/Student</i>
2006	\$645,000	\$554,700	6,173	\$89.86
2007	\$680,000	\$584,800	6,294	\$92.91
2008	\$715,000	\$614,900	6,415	\$95.85
2009	\$755,000	\$649,300	6,536	\$99.34
2010	\$795,000	\$683,700	6,657	\$102.70
2011	\$840,000	\$722,400	6,778	\$106.58
2012	\$885,000	\$761,100	6,899	\$110.32
2013	\$930,000	\$799,800	7,020	\$113.93
2014	\$980,000	\$842,800	7,141	\$118.02
2015	\$1,035,000	\$890,100	7,262	\$122.56
2016	\$1,090,000	\$937,400	7,383	\$126.96
2017	\$1,145,000	\$984,700	7,504	\$131.22
<b>TOTAL</b>	<b>\$10,495,000</b>			<b>\$1,310</b>

Discount Rate 5.18%  
 Net Present Value \$938.29

**School Bonds Series 1997 -1 (JEJ Moore)**

<i>Fiscal Year</i>	<i>Principal</i>	<i>Residential Share (86%)</i>	<i>Projected Enrollment</i>	<i>Payment/Student</i>
2006	\$180,090	\$154,877	6,173	\$25.09
2007	\$184,621	\$158,774	6,294	\$25.23
2008	\$189,633	\$163,084	6,415	\$25.42
2009	\$194,919	\$167,630	6,536	\$25.65
2010	\$200,496	\$172,427	6,657	\$25.90
2011	\$206,115	\$177,259	6,778	\$26.15
2012	\$211,772	\$182,124	6,899	\$26.40
2013	\$217,836	\$187,339	7,020	\$26.69
2014	\$224,332	\$192,926	7,141	\$27.02
2015	\$231,175	\$198,811	7,262	\$27.38
2016	\$238,414	\$205,036	7,383	\$27.77
2017	\$246,072	\$211,622	7,504	\$28.20
<b>TOTAL</b>	<b>\$2,525,475</b>			<b>\$317</b>

Discount Rate 5.17%  
 Net Present Value \$230.37

## Prince George County Cash Proffer Study

### Literary Funds - 1995 Prince George High School

Fiscal Year	Principal	Residential Share (86%)	Projected Enrollment	Payment/Student
2006	\$50,000	\$43,000	6,173	\$6.97
2007	\$50,000	\$43,000	6,294	\$6.83
2008	\$50,000	\$43,000	6,415	\$6.70
2009	\$50,000	\$43,000	6,536	\$6.58
2010	\$50,000	\$43,000	6,657	\$6.46
2011	\$50,000	\$43,000	6,778	\$6.34
2012	\$50,000	\$43,000	6,899	\$6.23
2013	\$50,000	\$43,000	7,020	\$6.13
2014	\$50,000	\$43,000	7,141	\$6.02
2015	\$50,000	\$43,000	7,262	\$5.92
<b>TOTAL</b>	<b>\$500,000</b>			<b>\$64.18</b>
			Discount Rate	2.00%
			Net Present Value	\$57.82

### VPSA - Series 2000B (Clements, Beazley and South - Capacity only for Clements)

Fiscal Year	Principal	Share for Clements (66%)	Residential Share (86%)	Projected Enrollment	Payment/Student
2006	\$632,432	\$417,405	\$358,968	6,173	\$58.15
2007	\$653,221	\$431,126	\$370,768	6,294	\$58.91
2008	\$680,813	\$449,337	\$386,429	6,415	\$60.24
2009	\$705,342	\$465,526	\$400,352	6,536	\$61.25
2010	\$735,749	\$485,594	\$417,611	6,657	\$62.73
2011	\$760,094	\$501,662	\$431,429	6,778	\$63.65
2012	\$788,262	\$520,253	\$447,418	6,899	\$64.85
2013	\$817,119	\$539,299	\$463,797	7,020	\$66.07
2014	\$846,703	\$558,824	\$480,589	7,141	\$67.30
2015	\$877,048	\$578,852	\$497,812	7,262	\$68.55
2016	\$908,198	\$599,411	\$515,493	7,383	\$69.82
2017	\$940,193	\$620,527	\$533,654	7,504	\$71.11
2018	\$978,076	\$645,530	\$555,156	7,625	\$72.80
2019	\$1,011,896	\$667,851	\$574,352	7,747	\$74.14
<b>TOTAL</b>	<b>\$2,283,923</b>				<b>\$919.56</b>
			Discount Rate	4.3%	
			Net Present Value	\$672.56	

### 2005 VPSA (South)

Fiscal Year	Principal	Residential Share (86%)	Projected Enrollment	Payment/Student
2006	\$134,391	\$115,576	6,173	\$18.72
2007	\$144,945	\$124,653	6,294	\$19.80
2008	\$147,877	\$127,174	6,415	\$19.82
2009	\$150,963	\$129,828	6,536	\$19.86
2010	\$154,210	\$132,621	6,657	\$19.92
2011	\$157,627	\$135,559	6,778	\$20.00
2012	\$160,810	\$138,297	6,899	\$20.05
2013	\$163,740	\$140,816	7,020	\$20.06
2014	\$167,236	\$143,823	7,141	\$20.14
2015	\$171,335	\$147,348	7,262	\$20.29
2016	\$175,648	\$151,057	7,383	\$20.46
2017	\$180,187	\$154,961	7,504	\$20.65
2018	\$184,964	\$159,069	7,625	\$20.86
2019	\$189,990	\$163,391	7,747	\$21.09
<b>TOTAL</b>	<b>\$2,283,923</b>			<b>\$281.73</b>
			Discount Rate	4.28%
			Net Present Value	\$207.82

Prince George County Cash Proffer Study

2005 VPSA (Harrison)

<i>Fiscal Year</i>	<i>Principal</i>	<i>Residential Share (86%)</i>	<i>Projected Enrollment</i>	<i>Payment/Student</i>
2006	\$160,141	\$137,721	6,173	\$22.31
2007	\$172,709	\$148,530	6,294	\$23.60
2008	\$176,203	\$151,535	6,415	\$23.62
2009	\$179,880	\$154,697	6,536	\$23.67
2010	\$183,749	\$158,024	6,657	\$23.74
2011	\$187,821	\$161,526	6,778	\$23.83
2012	\$191,614	\$164,788	6,899	\$23.88
2013	\$195,105	\$167,790	7,020	\$23.90
2014	\$199,270	\$171,372	7,141	\$24.00
2015	\$204,154	\$175,572	7,262	\$24.18
2016	\$209,294	\$179,993	7,383	\$24.38
2017	\$214,702	\$184,644	7,504	\$24.60
2018	\$220,394	\$189,539	7,625	\$24.86
2019	\$226,383	\$194,689	7,747	\$25.13
<b>TOTAL</b>	<b>\$2,721,419</b>			<b>\$335.70</b>
			Discount Rate	4.28%
			Net Present Value	\$247.63

**Subtotal Credit Per Student (Existing School Facilities) \$2,354.48**

School Bus Garage

Cost Per County CIP: \$3,773,000

<i>Fiscal Year</i>	<i>Principal</i>	<i>Residential Share (86%)</i>	<i>Projected Enrollment</i>	<i>Payment/Student</i>
2010	\$120,269	\$103,431	6,657	\$15.54
2011	\$125,681	\$108,085	6,778	\$15.95
2012	\$131,336	\$112,949	6,899	\$16.37
2013	\$137,247	\$118,032	7,020	\$16.81
2014	\$143,423	\$123,343	7,141	\$17.27
2015	\$149,877	\$128,894	7,262	\$17.75
2016	\$156,621	\$134,694	7,383	\$18.24
2017	\$163,669	\$140,755	7,504	\$18.76
2018	\$171,034	\$147,089	7,625	\$19.29
2019	\$178,731	\$153,708	7,747	\$19.84
2020	\$186,774	\$160,625	7,868	\$20.42
2021	\$195,178	\$167,853	7,989	\$21.01
2022	\$203,961	\$175,407	8,110	\$21.63
2023	\$213,140	\$183,300	8,231	\$22.27
2024	\$222,731	\$191,549	8,352	\$22.94
2025	\$232,754	\$200,168	8,473	\$23.63
2026	\$243,228	\$209,176	8,594	\$24.34
2027	\$254,173	\$218,589	8,715	\$25.08
2028	\$265,611	\$228,425	8,836	\$25.85
2029	\$277,563	\$238,704	8,957	\$26.65
<b>TOTAL</b>	<b>\$3,773,000</b>	<b>\$3,244,780</b>		<b>\$410</b>
			Discount Rate	4.50%
			Net Present Value	\$255.61

**Subtotal Credit Per Student (Planned School Facilities) \$255.61**

**TOTAL SCHOOL CREDIT PER STUDENT \$2,610.10**

## **SCHOOL CASH PROFFER INPUT VARIABLES**

Factors used to derive the school cash proffer are summarized in Figure 11. Cash proffers for schools are based on student generation rates (i.e., public school students per housing unit) and are only requested of residential development. For further discussion on student generation rates, see the Appendix. Level of service standards are based on current costs per student for buildings and land as discussed in the previous sections and summarized below. The credit for future principal payments is subtracted from the gross capital cost per student to derive the net capital cost per student.

**Figure 11: School Cash Proffer Input Variables**

<i>Current Level Of Service Standards</i>	<i>Elementary</i>	<i>Junior/Middle</i>	<i>High</i>
<b><i>School Facilities</i></b>			
Square Feet Per Student	99	113	154
Total Cost Per Square Foot	\$179	\$113	\$179
School Facility Construction Cost Per Student	\$17,800	\$12,740	\$27,636
Acreage Per Student	0.033	0.040	0.037
Land Cost Per Acre	\$25,000	\$25,000	\$25,000
Land Cost Per Student	\$813	\$1,010	\$930
<b><i>Planned School Board/Admin Facility</i></b>			
Square Feet Per Student	3.00	3.00	3.00
Total Cost Per Square Foot	\$131	\$131	\$131
Admin Facility Construction Cost Per Student	\$393	\$393	\$393
<b><i>Planned Bus Garage</i></b>			
Square Feet Per Student	1.98	1.98	1.98
Total Cost Per Square Foot	\$210	\$210	\$210
Bus Garage Construction Cost Per Student	\$416	\$416	\$416
<b><i>Bus and Other School Vehicles</i></b>			
Vehicles Per Student	0.02	0.02	0.02
Average Cost Per Vehicle	\$47,683	\$47,683	\$47,683
Bus and Other School Vehicle Cost Per Student	\$1,118	\$1,118	\$1,118
<b><i>Cash Proffer Study</i></b>			
Cash Proffer Study Cost Per Student	\$51	\$51	\$51
Gross Capital Cost Per Student	\$20,591	\$15,727	\$30,544
Total Principal Payment Credit Per Student	(\$2,610)	(\$2,610)	(\$2,610)
Net Capital Cost Per Student	\$17,981	\$13,117	\$27,934

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR SCHOOLS**

Figure 12 shows the schedule of maximum supportable cash proffer amounts for schools in Prince George County. The amounts are calculated by multiplying the student generation rate by the net capital cost per student for each type of school by type of housing and are then added together to derive the total school cash proffer amount. For example, for a single family detached unit, the elementary portion of the cash proffer is calculated by multiplying the student generation rate of .202 by the net capital cost per elementary student of \$17,981, which results in \$3,625 per single family detached housing unit. This is repeated for the middle/junior and high school portions of the proffer amount. All three portions are added together to calculate the total cash proffer amount by type of residential unit (i.e., for single family detached, \$3,625 + \$2,407 + \$3,566 = \$9,598).

**Figure 12: Prince George County Maximum Supportable School Cash Proffers**

<b>MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS</b>				
<i>Cash Proffer Per Hsg Unit</i>	<i>Elementary</i>	<i>Junior/Middle</i>	<i>High</i>	<i>TOTAL</i>
Single Family Detached	\$3,625	\$2,407	\$3,566	<b>\$9,598</b>
All Other Housing	\$4,491	\$1,783	\$1,893	<b>\$8,167</b>

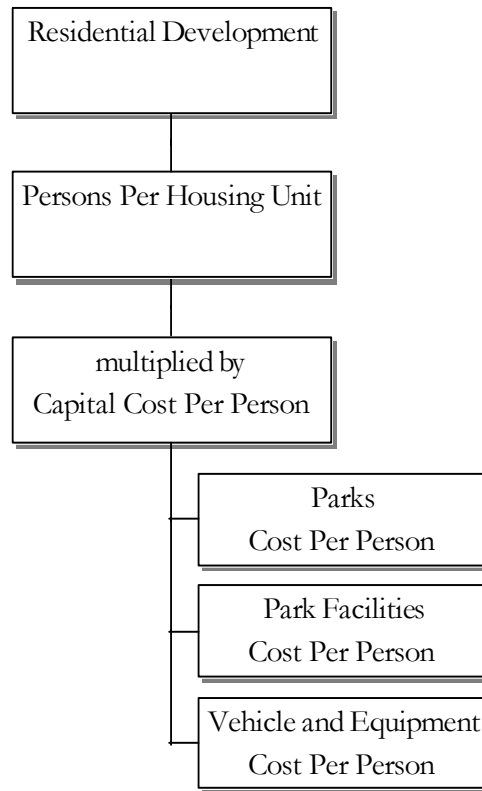
## Parks

### **METHODOLOGY**

The components of this cash proffer include parks, park facilities and vehicles and equipment. The incremental expansion methodology is used for all components of this proffer.

All capital costs have been allocated to residential development only and standards have been shown on a per capita basis. Persons per housing unit is used to differentiate the cash proffers by type of housing (see the Appendix for demographic information).

**Figure 13: Parks Cash Proffer Methodology Chart**



### **PARKS**

The park component of the cash proffer uses the incremental expansion methodology. Figure 14 provides an inventory of County park land and amenities. Total acreage for the County's parks is 87 acres, which equates to a level of service of 2.32 acres per 1,000 residents. County staff provided current cost for parkland at \$5,300 per acre, which results in total parkland value at approximately \$461,100. Figure 14 also provides an inventory of County Park amenities with prices per unit provided by County staff. Total value of current



**Prince George County Cash Proffer Study**

improvements totals \$2.05 million. Miscellaneous costs include items such as the cost of walkways, boardwalks, parking and roads. The per-acre cost for these items was based on estimated costs for a park in Chesterfield County. According to County staff, these costs are commensurate with costs incurred by Prince George County. Unit costs for the Appomattox River Park represent the County’s contribution for the comfort station and walking trail.

The demand base for park facilities is population. Current land cost per person is \$12.28 and improvement cost per person is \$54.73.

**Figure 14: County Park Facilities and Level of Service Standards**

Parks**	Acres***	Playground Equipment	Restrooms	Restroom, Concession and Storage Bldg.	Comfort Station (Restroom) and Education Center	Lighted Baseball, Softball or Soccer Field	Lighted Pony League Field	Unlighted Practice Baseball, Softball or Soccer Field	Picnic Pavilion - 40x80	Picnic Pavilion - 24x24	BB Courts	Walking Trail	Tennis Courts	Misc**** (acres)
Scott Park	15.0	1	1	1		2			1					15.0
Temple Park	32.0	1		1		2		1	1	1	6	1	2	32.0
Appomattox River Park	25.0			0	1							1		25.0
JEJ Moore Ath. Rec. Complex	15.0			1		3	2					1		15.0
<b>Total</b>	<b>87.00</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>3</b>	<b>2</b>	
Unit Price*	\$5,300	\$50,000	\$40,000	\$125,000	\$80,000	\$65,000	\$65,000	\$30,000	\$70,000	\$35,000	\$35,000	\$25,000	\$40,000	\$3,500
Units x Price	\$461,100	\$100,000	\$40,000	\$375,000	\$80,000	\$455,000	\$130,000	\$30,000	\$140,000	\$35,000	\$210,000	\$75,000	\$80,000	\$304,500
<b>Total Land</b>	<b>\$461,100</b>	<b>Total Value of Improvements</b>											<b>\$2,054,500</b>	

Population in 2006	37,538
Acres per 1,000 residents	2.32
Land Cost Per Acre	\$5,300
Land Cost Per Person	\$12.28
Improvement Cost Per Acre	\$23,615
Improvement Cost Per Capita	\$54.73

\*Source: Prince George County Parks and Recreation

\*\*neighborhood parks excluded

\*\*\*land acquisition cost based on cost to acquire land for JEJ Moore Middle School and Athletic Recreation Complex in 1996 - 75 acres for \$400,000

\*\*\*\*Miscellaneous costs includes the cost of walkways, boardwalks, parking and roads.

**PARK FACILITIES**

The incremental expansion methodology is also used to derive the Park Facilities cost component of the cash proffer. Figure 15 provides an inventory of current park facilities with square footage. Current replacement cost for facility space is based on the County’s insurance for the facilities. Total facility value is estimated at \$762,994 for a per capita cost of \$20.33.

**Figure 15: Park Facilities and Level of Service Standards**

<i>Facility</i>	<i>Sq. Ft.</i>	<i>Replacement Cost/SQ*</i>	<i>Replacement Cost</i>
Scott Park Recreation Office	1,680	\$71	\$120,098
Dispuntanta Community Building	7,200	\$86	\$618,877
Recreation Garage Building	576	\$42	\$24,020
<b>Total Cost</b>	<b>9,456</b>		<b>\$762,994</b>

Population in 2006	37,538
Park Facilities Sq. Ft. Per Capita	0.25
Cost per Capita	\$20.33

*Source: Prince George County Statement of Values 11/04, cost adjusted for inflation*

**VEHICLES AND EQUIPMENT**

The incremental expansion methodology is also used to derive the Park Vehicles and Equipment cost component of the cash proffer. Figure 16 provides an inventory of current vehicles and equipment. Current replacement cost for County vehicles is provided by the County. Total vehicle and equipment value is estimated at \$222,500 for a per capita cost of \$5.93.

**Figure 16: Park Vehicle and Equipment and Level of Service Standards**

<i>Type of Vehicle/Equipment</i>	<i>Units in Service</i>	<i>Unit Replacement Value*</i>	<i>Replacement Value</i>
Pick-up	4	\$18,000	\$72,000
Sedan	2	\$22,000	\$44,000
Van	1	\$20,000	\$20,000
Lawn Mower	5	\$7,500	\$37,500
Tractor	2	\$15,000	\$30,000
Trailer	5	\$1,400	\$7,000
All Terrain Vehicles	2	\$6,000	\$12,000
<b>TOTAL</b>	<b>21</b>		<b>\$222,500</b>

Population in 2006	37,538
Vehicles and Equipment Per Person	0.0006
Park Vehicles and Equipment Cost Per Capita	\$5.93

Source: Prince George County Parks and Recreation

**PARKS CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current Parks Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$10,000) is allocated to the projected increase in population over the next five years. This results in a consultant fee cost per demand unit of \$3.14 per person (\$10,000/3,188 persons).

**PARKS CASH PROFFER INPUT VARIABLES**

Figure 17 shows level of service standards and factors for park cash proffers for Prince George County. Cash proffers for parks are based on household size (i.e., persons per housing unit) and are only requested of residential development. Level of service standards are based on current costs per person for parks, park facilities and park vehicles and equipment.

**Figure 17: Park Cash Proffer Input Variables**

<b>INPUT VARIABLES</b>	<b>Residential</b>
<i>Persons Per Housing Unit</i>	
Single Family Detached	2.66
All Other Housing	2.50
<i>Level Of Service</i>	
<i>Parks (Incremental-Expansion)</i>	
Improvement Cost Per Person	\$54.73
Park Acreage per Person	2.32
Cost Per Acre	\$5,300
Park Land Cost per Person	\$12.28
<i>Park Facilities (Incremental-Expansion)</i>	
Park Facilities Cost per Person	\$20.33
<i>Park Vehicles and Equipment (Incremental-Expansion)</i>	
Park Vehicles and Equipment Cost per Person	\$5.93
<i>Cash Proffer Study</i>	
Cash Proffer Study Cost Per Person	\$3.14
<b>Total Capital Cost per Person</b>	<b>\$96.41</b>

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR PARKS**

Figure 18 contains a schedule of Park Cash Proffers for Prince George County. The amounts are calculated by multiplying the persons per housing unit for each type of housing by the total capital cost per person. For example, for a single family detached unit, the persons per housing unit figure of 2.66 is multiplied by the total capital cost per person of \$96.41 for a cash proffer amount of \$256.

**Figure 18: Park Cash Proffer Schedule**

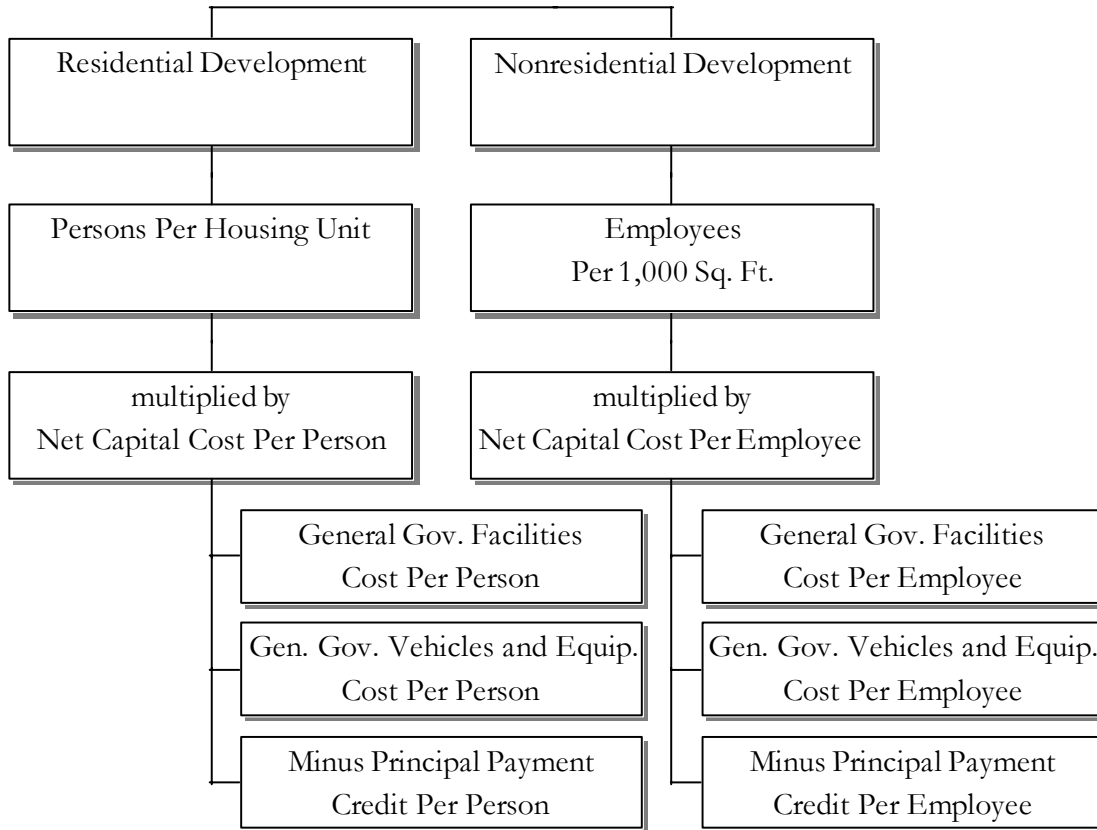
<b>MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS</b>	<b>Residential</b>
<i>Cash Proffer per Housing Unit</i>	
Single Family Detached	\$256
All Other Housing	\$241

General Government Facilities

**METHODOLOGY**

The General Government cash proffer uses a plan-based approach to determine the level of service for the County Administration Building. The incremental expansion cost approach is used to determine the demand for all other general government facilities and vehicles and equipment. As shown in Figure 19, this cash proffer is allocated on a per capita basis for residential development. For nonresidential development, the cash proffer methodology allocates the capital cost on a per employee basis.

**Figure 19: General Government Cash Proffer Methodology**



**PROPORTIONATE SHARE FACTORS**

The General Government Cash Proffer uses a functional population concept to allocate capital costs to residential and nonresidential development. The table distinguishes time at home (2/3 of a day, 16 hours) versus time at work (1/3 of a day, 8 hours) and accounts for



commuting patterns in Prince George County. According to 2000 Census data, 45% of all workers in Prince George County worked in the County in 2000. This percentage was applied to the 2006 population estimate of 37,538 for the County, resulting in an estimated 5,230 County residents working in Prince George County in 2005. According to the functional population analysis, residential development accounts for 89% of the demand for General Government facilities and vehicles and equipment and nonresidential development accounts for 11% of the demand.

**Figure 20: Proportionate Share – Residential and Nonresidential**

	<u>Demand Units in 2006</u>	<u>Demand</u> <u>Hours/Day</u>	<u>Person</u> <u>Hours</u>
<b>Residential</b>			
Resident Population (2006) <sup>1</sup>	37,538		
Residents Not Working	24,391	24	585,376
Workers Living in Prince George County <sup>2</sup>	13,147		
Residents Working in Prince George <sup>3</sup>	5,230	16	83,687
Residents Working outside of Prince George	7,226	16	115,619
	<i>Residential Subtotal</i>		<u>784,682</u>
			<b>89%</b>
<b>Nonresidential</b>			
Jobs Located in Prince George (2006) <sup>4</sup>	11,614		
Residents Working in Prince George <sup>3</sup>	5,230	8	41,844
Non-Resident Workers	6,384	8	51,069
	<i>Nonresidential Subtotal</i>		<u>92,913</u>
			<b>11%</b>
	<b>TOTAL</b>		<u><u>877,595</u></u>

<sup>1</sup> Source: Population projection for 2006 based on 2005 estimate from Weldon Cooper Center for Public Service, assumes 244 new housing units/year.

<sup>2</sup> Source: Bureau of Labor Statistics, Civilian Labor Force estimate for 2000

<sup>3</sup> Source: County residents working in the County is based on data in Table P26 from STF3, Census 2000 detailing the proportion of residents working in the County. In 2000, 45% percent of all residents worked in the County. The same proportion of residents was used to derive the number of County residents working in the County in 2006.

<sup>4</sup> Projection based on population to jobs ratio of .31, using 2004 job figure from the Quarterly Census of Employment and Wages

## **GENERAL GOVERNMENT FACILITIES**

Prince George County constructed its County Administration Building in 2004. The County estimates that the current amount of administrative space in the facility will serve the County through 2014. Therefore, the cost recovery methodology is used for this component of the General Government cash proffer. Under this methodology, new development is buying into the existing capacity of this facility. Figure 21 shows current square footage and costs for the facility. The total original cost for the facility was approximately \$10.3 million. Excluding the square footage and cost allocated to the Fire Department (which is addressed in the Fire Cash Proffer section of this report), the total remaining cost is approximately \$9.7 million.

To calculate the residential level of service, the total square footage is multiplied by 89% (detail on proportionate share is shown in Figure 20) and then divided by demand units in 2014, resulting in 1.45 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 11% (see Figure 20 for detail) and dividing by the

number of jobs in the County in 2014, providing for .56 square feet per job. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$204.96 per person and \$78.44 per job.

**Figure 21: County Administration Building Level of Service and Cost Standards**

	BldgSF*	Year Built	Cost/SF	Const. Cost**
County Administration Building	69,357	2004	\$141	\$9,773,855
	Total			\$9,773,855
	Proportionate Share	2014 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	89%	42,639 person	1.45 person	\$204.96
Non-residential	11%	13,192 job	0.56 job	\$78.44

\*Prince George County, excludes 3,024 sq. ft. allocated to Fire and Emergency Services, as this portion of the facility is included in the Fire Cash Proffer Calculations.

\*\*Source: excludes cost related to Fire administration area of the building.

The incremental expansion methodology is used to derive the cost component of the cash proffer for all other general government facilities. This methodology is used for these facilities as they were not built with excess capacity and therefore will need to be expanded as new development creates more demand for services. Figure 22 provides an inventory of all other general government facilities with square footage. Not included in the table is the County Courthouse space used by the Sheriff (as this is included in the Public Safety Cash Proffer). Additionally, the portion of the Human Services Building leased to the U.S. Department of Agriculture is excluded from the analysis. Current replacement cost for facility space is based on the County’s insurance for the facilities.

To calculate the residential level of service, the total square footage is multiplied by 89% (detail on proportionate share is shown in Figure 20) and then divided by the current population, resulting in 2.08 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 11% (see Figure 20 for detail) and dividing by the number of jobs in the County in 2006, providing for .79 square feet per job. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$360.35 per person and \$137.91 per job.

**Figure 22: Other General Government Facilities Level of Service and Cost Standards**

	Square Footage	Replacement Cost Per Sq. Ft.	Replacement Cost*	Inflation Factor	2006 Replacement Cost
Community Corrections	3,920	\$129	\$507,495	1.06	\$536,779
County Courthouse	56,550	\$182	\$10,293,150	1.06	\$10,887,090
Housing Building	1,200	\$89	\$107,140	1.06	\$113,322
Human Services Building	19,700	\$151	\$2,969,942	1.06	\$3,141,316
Maintenance Garage	6,200	\$69	\$425,445	1.06	\$449,994
TOTAL	87,570		\$14,303,172		\$15,128,501

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	89%	37,538 persons	2.0859	\$360.35
Nonresidential	11%	11,614 jobs	0.7983	\$137.91

\*Source: Prince George County Statement of Values 11/04, costs adjusted for inflation. The County Courthouse square footage excludes space used by the Sheriff (3,150 sq. ft.), as it is included in the Sheriff portion of the Public Safety Proffer. The Human Services Building square footage excludes space rented to USDA (2,300 sq. ft.)

**VEHICLES AND EQUIPMENT**

The incremental expansion methodology is also used to derive the General Government Vehicles and Equipment cost component of the cash proffer. Figure 23 provides an inventory of current vehicles and equipment. Current replacement costs for County vehicles is provided by the County.

To calculate the residential level of service, the total number of units is multiplied by 89% (detail on proportionate share is shown in Figure 20) and then divided by the current population, resulting in .0008 vehicles per person. Nonresidential level of service is calculated by multiplying the total number of vehicles by 11% (see Figure 20 for detail) and dividing by the number of jobs in the County in 2006, providing for .0003 vehicles per job. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$17.65 per person and \$6.75 per job.

**Figure 23: General Government Vehicles and Equipment Level of Service and Cost Standards**

Type of Vehicle/Equipment	Units in Service	Unit Replacement Cost*	Total Replac. Cost
Sedan	14	\$22,000	\$308,000
Pickup	9	\$18,000	\$162,000
SUV	8	\$22,000	\$176,000
Van	3	\$20,000	\$60,000
Dump Truck	1	\$35,000	\$35,000
<b>TOTAL</b>	<b>35</b>		<b>\$741,000</b>

	Proportionate Share	2006 Demand Units	Vehicles per Demand Unit	Cost per Demand Unit
Residential	89%	37,538 persons	0.0008	\$17.65
Nonresidential	11%	11,614 jobs	0.0003	\$6.75

\*Source: Prince George County

**GENERAL GOVERNMENT CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current General Government Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$12,300) is allocated to the projected increase in population and jobs over the next five years. This results in a cash proffer study cost per demand unit of \$2.95 per person and per job (\$12,300/4,175 people and jobs).

**CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON GENERAL GOVERNMENT IMPROVEMENTS**

Because the County debt financed a portion of recent general government construction costs, TischlerBise recommends a credit for future principal payments on outstanding debt. Prince George County Finance staff provided the amount of projected outstanding general government-related debt for capacity projects and principal payment schedules. Existing

debt for the construction of the county administration building and improvements to the human services and courts buildings.

Figure 24 provides the credit calculation based on the principal payments to be made by the County on the outstanding general government debt. A credit is necessary since new development that pay cash proffers will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person and per job are discounted using a net present value formula based on the applicable discount rate (based on the true interest cost for each debt issuance).

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential and non-residential property owners. This allocation is made using the proportionate share factors from Figure 20. The credit amount of \$134.63 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. The subtraction is repeated with the per job credit amount of \$51.52 to arrive at a net capital cost per job. Population and employment projections are discussed in detail in the Appendix.

**Figure 24: Credit for Future Payments**

**Series 2003 - Co. Admin. Building**

Fiscal Year	Principal Minus Fire Admin	Proportionate Share		Share of Principal		Projected Population	Projected Jobs	Projected Payment/ Person	Projected Payment/ Job	
		Res.	Nonres.	Res.	Nonres.					
2006	\$282,423	89%	11%	\$252,522	\$29,901	37,538	11,614	\$6.73	\$2.57	
2007	\$293,267	89%	11%	\$262,219	\$31,049	38,175	11,811	\$6.87	\$2.63	
2008	\$304,529	89%	11%	\$272,288	\$32,241	38,813	12,009	\$7.02	\$2.68	
2009	\$316,223	89%	11%	\$282,744	\$33,479	39,451	12,206	\$7.17	\$2.74	
2010	\$328,366	89%	11%	\$293,601	\$34,765	40,088	12,403	\$7.32	\$2.80	
2011	\$340,975	89%	11%	\$304,875	\$36,100	40,726	12,601	\$7.49	\$2.86	
2012	\$354,068	89%	11%	\$316,582	\$37,486	41,364	12,798	\$7.65	\$2.93	
2013	\$367,665	89%	11%	\$328,740	\$38,926	42,001	12,995	\$7.83	\$3.00	
2014	\$381,783	89%	11%	\$341,363	\$40,420	42,639	13,192	\$8.01	\$3.06	
2015	\$396,444	89%	11%	\$354,471	\$41,972	43,277	13,390	\$8.19	\$3.13	
2016	\$411,667	89%	11%	\$368,083	\$43,584	43,914	13,587	\$8.38	\$3.21	
2017	\$427,475	89%	11%	\$382,218	\$45,258	44,552	13,784	\$8.58	\$3.28	
2018	\$443,890	89%	11%	\$396,894	\$46,996	45,190	13,982	\$8.78	\$3.36	
2019	\$460,935	89%	11%	\$412,135	\$48,800	45,827	14,179	\$8.99	\$3.44	
2020	\$478,635	89%	11%	\$427,961	\$50,674	46,465	14,376	\$9.21	\$3.52	
2021	\$497,015	89%	11%	\$444,395	\$52,620	47,103	14,573	\$9.43	\$3.61	
2022	\$516,100	89%	11%	\$461,460	\$54,641	47,740	14,771	\$9.67	\$3.70	
2023	\$535,919	89%	11%	\$479,180	\$56,739	48,378	14,968	\$9.90	\$3.79	
<b>TOTAL</b>				<b>\$6,381,730</b>	<b>\$755,651</b>			<b>\$147.22</b>	<b>\$56.34</b>	
								Discount	3.84%	3.84%
								Net Present Value	\$102.51	\$39.23

**Series 2004 - Co. Admin. Building and Radio System**

Fiscal Year	County Admin Share Minus Fire	Proportionate Share		Share of Principal		Projected Population	Projected Jobs	Projected Payment/ Person	Projected Payment/ Job	
		Res.	Nonres.	Res.	Nonres.					
2006	\$91,320	89%	11%	\$81,652	\$9,668	37,538	11,614	\$2.18	\$0.83	
2007	\$94,675	89%	11%	\$84,651	\$10,023	38,175	11,811	\$2.22	\$0.85	
2008	\$98,152	89%	11%	\$87,761	\$10,392	38,813	12,009	\$2.26	\$0.87	
2009	\$101,758	89%	11%	\$90,984	\$10,773	39,451	12,206	\$2.31	\$0.88	
2010	\$105,495	89%	11%	\$94,326	\$11,169	40,088	12,403	\$2.35	\$0.90	
2011	\$109,370	89%	11%	\$97,791	\$11,579	40,726	12,601	\$2.40	\$0.92	
2012	\$113,387	89%	11%	\$101,383	\$12,005	41,364	12,798	\$2.45	\$0.94	
2013	\$117,552	89%	11%	\$105,107	\$12,446	42,001	12,995	\$2.50	\$0.96	
2014	\$121,870	89%	11%	\$108,968	\$12,903	42,639	13,192	\$2.56	\$0.98	
2015	\$126,347	89%	11%	\$112,970	\$13,377	43,277	13,390	\$2.61	\$1.00	
2016	\$130,988	89%	11%	\$117,120	\$13,868	43,914	13,587	\$2.67	\$1.02	
2017	\$135,799	89%	11%	\$121,422	\$14,377	44,552	13,784	\$2.73	\$1.04	
2018	\$140,787	89%	11%	\$125,881	\$14,905	45,190	13,982	\$2.79	\$1.07	
2019	\$145,960	89%	11%	\$130,507	\$15,453	45,827	14,179	\$2.85	\$1.09	
<b>TOTAL</b>	<b>\$1,633,460</b>			<b>\$1,460,522</b>	<b>\$172,938</b>			<b>\$34.86</b>	<b>\$13.34</b>	
								Discount Rate	3.64%	3.64%
								Net Present Value	\$26.62	\$10.19

## Prince George County Cash Proffer Study

### GO&RB-Series 1996B

<i>Fiscal Year</i>	<i>Share for Human Serv. &amp; Courts Bldg.</i>	<i>Proportionate Share</i>		<i>Share of Principal</i>		<i>Projected Population</i>	<i>Projected Jobs</i>	<i>Payment/ Person</i>	<i>Payment/ Job</i>
		<i>Res.</i>	<i>Nonres.</i>	<i>Res.</i>	<i>Nonres.</i>				
2006	\$76,890	89%	11%	\$68,749	\$8,141	37,538	11,614	\$1.83	\$0.70
2007	\$27,960	89%	11%	\$25,000	\$2,960	38,175	11,811	\$0.65	\$0.25
2008	\$27,960	89%	11%	\$25,000	\$2,960	38,813	12,009	\$0.64	\$0.25
2009	\$30,290	89%	11%	\$27,083	\$3,207	39,451	12,206	\$0.69	\$0.26
2010	\$31,455	89%	11%	\$28,125	\$3,330	40,088	12,403	\$0.70	\$0.27
2011	\$32,620	89%	11%	\$29,166	\$3,454	40,726	12,601	\$0.72	\$0.27
2012	\$34,950	89%	11%	\$31,250	\$3,700	41,364	12,798	\$0.76	\$0.29
2013	\$37,280	89%	11%	\$33,333	\$3,947	42,001	12,995	\$0.79	\$0.30
<b>TOTAL</b>								<b>\$6.78</b>	<b>\$2.60</b>
							Discount Rate	5.6%	5.6%
							Net Present Value	\$5.50	\$2.11
<b>Combined General Govt. Credit</b>								<b>\$134.63</b>	<b>\$51.52</b>

**GENERAL GOVERNMENT CASH PROFFER INPUT VARIABLES**

Figure 25 shows level of service standards and factors for general government cash proffers for Prince George County. Cash proffers for general government are based on household size (i.e., persons per housing unit) and are requested of residential and non-residential development. Level of service standards are based on current costs per person and per job for general government facilities and vehicles and equipment.

**Figure 25: General Government Cash Proffer Input Variables**

<b>INPUT VARIABLES</b>	<b>Residential</b>	<b>Nonresidential</b>
<i>Persons Per Housing Unit</i>		
Single Family Detached	2.66	
All Other Housing	2.50	
<i>Employees per 1,000 Square Feet</i>		
Com / Shop Ctr 10,000 SF or less		3.33
Com / Shop Ctr 10,001 - 25,000 SF		3.33
Com / Shop Ctr 25,001 - 50,000 SF		2.86
Com / Shop Ctr 50,001 - 100,000 SF		2.50
Com / Shop Ctr 100,001 -200,000 SF		2.22
Com / Shop Ctr 200,001-400,000 SF		2.00
Office/Inst 10,000 SF or less		4.48
Office/Inst 10,001 - 25,000 SF		4.15
Office/Inst 25,001-50,000 SF		3.91
Office/Inst 50,001 - 100,000 SF		3.69
Office/Inst 100,001 -200,000 SF		3.49
Business Park		3.16
Light Industrial		2.31
Warehousing		1.28
Manufacturing		1.79
<i>Demand Unit Cost Factors</i>		
	<u>Per Person</u>	<u>Per Employee</u>
Cost Recovery Component (Cty Admin. Bldg.)	\$204.96	\$78.44
Incremental Expansion Component (All Other Facilities)	\$360.35	\$137.91
Incremental Expansion Component (Vehicles)	\$17.65	\$6.75
Cash Proffer Study	\$2.95	\$2.95
<b>Gross Capital Cost Per Demand Unit</b>	<b>\$585.90</b>	<b>\$226.05</b>
<b>Principal Payment Credit Per Demand Unit</b>	<b>(\$134.63)</b>	<b>(\$51.52)</b>
<b>Net Capital Cost Per Demand Unit</b>	<b>\$451.28</b>	<b>\$174.53</b>

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR GENERAL GOVERNMENT**

Figure 26 contains a schedule of General Government Cash Proffers for Prince George County. The amounts are calculated by multiplying the persons per housing unit for each type of housing by the net capital cost per demand unit. For example, for a single family detached unit, the persons per housing unit figure of 2.66 is multiplied by the net capital cost per person of \$451.28 for a cash proffer amount of \$1,200. The calculation is repeated for all other housing types. For non-residential development, the employees per 1,000 sq. ft. is multiplied by the net capital cost per employee. For example, for a commercial/shopping center less than 10,000 sq. ft., 3.33 employees per 1,000 sq. ft. is multiplied by \$174.53 per employee for \$581 per 1,000 sq. ft. This calculation is repeated for the remaining non-residential categories.

Figure 26: General Government Cash Proffer Schedule

MAXIMUM SUPPORTABLE CASH PROFFERS		Residential	Nonresidential
<u>Residential</u>		<u>Per Housing Unit</u>	
Single Family Detached		\$1,200	
All Other Housing		\$1,128	
<u>Nonresidential</u>			<u>Per 1,000 Square Feet</u>
Com / Shop Ctr 10,000 SF or less			\$581
Com / Shop Ctr 10,001 - 25,000 SF			\$581
Com / Shop Ctr 25,001 - 50,000 SF			\$499
Com / Shop Ctr 50,001 - 100,000 SF			\$436
Com / Shop Ctr 100,001 -200,000 SF			\$387
Com / Shop Ctr 200,001-400,000 SF			\$349
Office/Inst 10,000 SF or less			\$782
Office/Inst 10,001 - 25,000 SF			\$724
Office/Inst 25,001-50,000 SF			\$682
Office/Inst 50,001 - 100,000 SF			\$644
Office/Inst 100,001 - 200,000 SF			\$609
Business Park			\$552
Light Industrial			\$403
Warehousing			\$223
Manufacturing			\$312



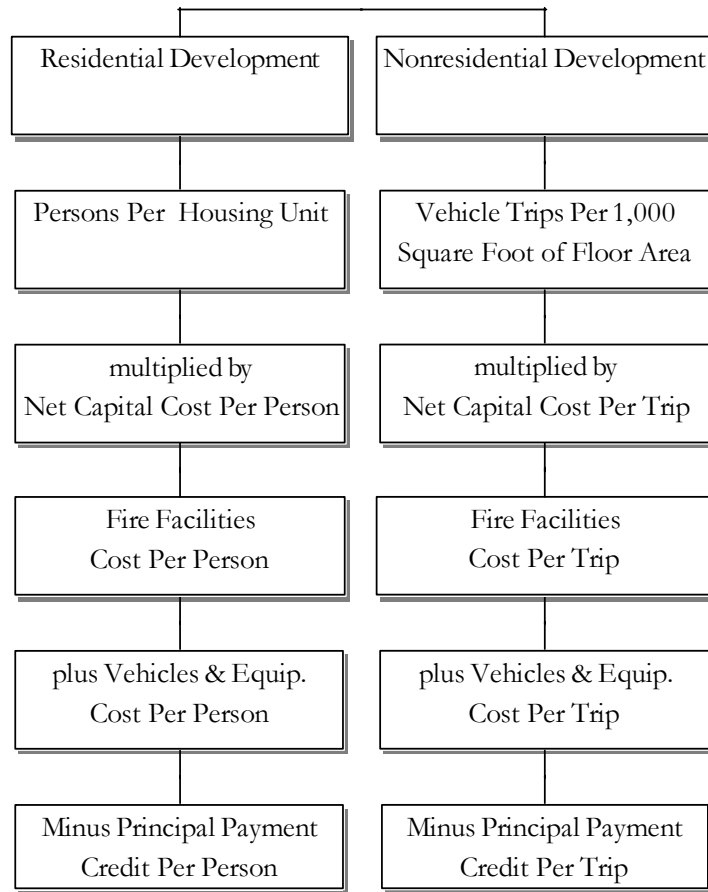
## Fire

### **METHODOLOGY**

The Fire cash proffer uses an incremental expansion cost approach to determine the need for fire facilities. For vehicles and equipment, the cost-recovery approach is used as the County has oversized its fleet in order to meet new demand for fire and EMS service from new development. The Prince George County Fire Department and its associated volunteer fire departments in the County serve both residential and non-residential development, providing fire protection and emergency medical services to residents and businesses. Capital expenditures for facilities and vehicles and equipment are expected to be exclusively borne by the County.

As shown in Figure 27, this cash proffer is allocated on a per capita basis for residential development. For nonresidential development, the proffer methodology allocates the capital cost on a per nonresidential trip basis. TischlerBise recommends using nonresidential vehicle trips as the best demand nonresidential demand indicator for Fire/EMS facilities and vehicles. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for Fire/EMS service. If employees per thousand square feet were used as the demand indicator, cash proffers would be too high for office/institutional development. If floor area were used as the demand indicator, cash proffers would be too high for industrial development.

Figure 27: Fire Cash Proffer Methodology



**CALLS FOR SERVICE - FIRE**

The most accurate source for determining demand for Fire/EMS services is calls for service generated by residential and nonresidential land uses. The Prince George County Fire Department provided data on calls for service by residential and nonresidential land use for the period of April 6-May 6, 2006. This period is considered representative of a typical month for the Department. TischlerBise used the survey to determine residential and nonresidential proportionate share factors. Of the 330 Fire/EMS calls received during the period, 279 calls (85%) were to residential land uses, with nonresidential uses accounting for 51 calls (15%).

**FIRE FACILITIES**

Prince George County constructed its County Administration Building in 2004, including 3,024 square feet for Fire administration. The County estimates that the space in the facility will serve the County through 2014. Therefore, the cost recovery methodology is used for this component of the Fire cash proffer. Under this methodology, new development is buying into the existing capacity of this facility. Figure 28 shows current square footage and costs for the fire administration portion of the facility. As shown, the total original cost for the fire portion of the facility was approximately \$426,145.

To calculate the residential level of service, the total square footage is multiplied by 85% (based on Fire/EMS calls for service, discussed above) and then divided by demand units in 2014, resulting in .06 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 15% (see discussion above) and dividing by the number of nonresidential vehicle trips in the County in 2014, providing for .01 square feet per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$8.45 per person and \$1.57 per trip.

**Figure 28: Fire Administration Level of Service and Cost Standards**

	BldgSF	Year Built	Cost/SF	Const. Cost*
Fire and EMS Portion of County Admin. Building	3,024	2004	\$141	\$426,145
	Total			\$426,145

	Proportionate Share	2014 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	85%	42,639 person	0.06 person	\$8.45
Non-residential	15%	41,926 nonres trips	0.01 nonres trips	\$1.57

\*Source: Prince George County

The incremental expansion methodology is used to derive the cost component of the cash proffer for the County’s Fire Stations. This methodology is used for these facilities as they were not built with excess capacity and therefore will need to be expanded as new development creates more demand for services. Figure 29 provides an inventory of fire stations with square footage. Replacement cost is based on the cost of construction for a fire station in nearby Chesterfield County, adjusted for inflation.

To calculate the residential level of service, the total square footage is multiplied by 85% (based on Fire/EMS calls for service, discussed above) and then divided by the current population, resulting in .84 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 15% (see discussion above) and dividing by the number of nonresidential vehicle trips in the County in 2006, providing for .14 square feet per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$234.67 per person and \$38.41 per nonresidential trip.

**Figure 29: Fire Station Level of Service and Cost Standards**

Facility	Sq. Ft.	Replace. Cost/Sq. Ft.*	Replacement Cost
P.G. Fire Dept. #3	8,082	\$281	\$2,271,042
Burrowsville Fire Bldg. #21	4,620	\$281	\$1,298,220
Carson Fire Bldg. #22	2,926	\$281	\$822,206
Disputanta Fire Dept. #23	8,040	\$281	\$2,259,240
Emergency Squad Bldg. #25	5,160	\$281	\$1,449,960
Jefferson Park Fire Station	6,251	\$281	\$1,756,531
Carson Vol. Fire Sub Station	2,000	\$281	\$562,000
<b>TOTAL</b>	<b>37,079</b>		<b>\$10,419,199</b>

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	85%	37,538 persons	0.84	\$234.67
Nonresidential	15%	41,926 nonres trips	0.14	\$38.41

\*Source: Average cost of fire station construction (per sq. ft.) in Chesterfield County, VA, adjusted for inflation.

## **FIRE VEHICLES AND EQUIPMENT**

The cost-recovery methodology is also used to derive the Fire Vehicles and Equipment cost component of the cash proffer. Figure 30 provides an inventory of current vehicles and equipment. The cost-recovery approach is used for this component as the County has oversized its fleet in order to meet new demand for fire and EMS service from new development. Therefore, original cost as provided by the County is used for Fire vehicles.

To calculate the residential level of service, the total number of vehicles is multiplied by 85% (based on Fire/EMS calls for service, discussed above) and then divided by the current population, resulting in .0013 vehicles per person. Nonresidential level of service is calculated by multiplying the number of vehicles by 15% (see discussion above) and dividing by the number of nonresidential vehicle trips in the County in 2006, providing for .0002 vehicles per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$152.99 per person and \$25.04 per nonresidential trip.

**Figure 30: Fire Vehicles and Equipment Level of Service and Cost Standards**

Type of Vehicle/Equipment	Vehicle/Equipment	Units in Service	Unit Original Cost*	Total Original Cost
Pumper	89 Pierce Pumper	1	\$78,700	\$78,700
Pumper	96 International Pumper	1	\$205,000	\$205,000
Pumper	93 Pierce Pumper	1	\$210,000	\$210,000
Brush Unit	79 Jeep Brush Unit	1	\$10,000	\$10,000
Brush Unit	97 Jeep Brush Unit	1	\$20,000	\$20,000
Brush Unit	00 Ford Brush Truck	1	\$37,864	\$37,864
Salvage	93 International Salvage	1	\$136,584	\$136,584
Admin	99 Chevy Suburban	1	\$28,000	\$28,000
Aerial	01 Spartan Aerial Truck	1	\$486,617	\$486,617
Hazmat Trl.	03 TRA/REM	1	\$10,000	\$10,000
Brush Unit	97 Jeep Brush Unit	1	\$20,000	\$20,000
Brush Unit	89 Ford Brush Truck	1	\$25,000	\$25,000
Tanker	95 International Tanker	1	\$141,360	\$141,360
Heavy Rescue	03 Pierce	1	\$539,324	\$539,324
Utility	98 Dodge 3500 Quad Cab	1	\$30,300	\$30,300
Admin	96 Ford Crown Vic	1	\$18,000	\$18,000
H.T.R.	99 Interstate Trailer	1	\$10,000	\$10,000
Support	96 Ford Ambulance	1	\$55,000	\$55,000
Brush Unit	98 Jeep Pumper	1	\$13,000	\$13,000
Brush Unit	01 Dodge Brush Truck	1	\$24,000	\$24,000
Brush Unit	74 Chevy Brush Truck	1	\$10,000	\$10,000
Tanker	01 Freightliner Tanker	1	\$250,000	\$250,000
Salvage	89 Pierce/White Rescue	1	\$206,260	\$206,260
Admin	94 Chevy Suburban	1	\$40,000	\$40,000
Brush Unit	01 Dodge Brush Truck	1	\$40,000	\$40,000
Pumper	88 Pierce Arrow	1	\$100,000	\$100,000
Brush Unit	02 Ford F350 Pickup	1	\$33,300	\$33,300
Tanker	00 Freightliner Tanker	1	\$200,000	\$200,000
Salvage	00 Ford Salvage/Rescue	1	\$140,800	\$140,800
Chief	96 Ford Crown Vic	1	\$18,000	\$18,000
Utility	94 Chevy 2500 Pickup	1	\$50,000	\$50,000
Pumper	95 Pierce Saber Pumper	1	\$186,500	\$186,500
Brush Unit	77 Jeep Brush Unit CJ 7	1	\$10,000	\$10,000
Brush Unit	88 Ford Brush Truck	1	\$15,750	\$15,750
Crash Truck	89 GMC Rescue/Crash	1	\$95,700	\$95,700
Chief	01 Chevy Suburban	1	\$28,400	\$28,400
Utility	01 Chevy Van	1	\$16,800	\$16,800
Hazmat/diver	85 Wells Cargo Trailer	1	\$3,000	\$3,000
Responder 3	97 Ford Crown Vic	1	\$18,000	\$18,000
Responder 5	99 Ford Crown Vic	1	\$18,000	\$18,000
responder 4	96 Ford Crown Vic	1	\$18,000	\$18,000
Crew	02 Ford Ambulance	1	\$79,900	\$79,900
Crew	01 Ford Ambulance	1	\$80,000	\$80,000
Crew	00 Ford Ambulance	1	\$78,400	\$78,400
Crew	03 Ford Ambulance	1	\$87,286	\$87,286
Crew	00 Ford Ambulance	1	\$89,000	\$89,000
Crew	92 Ford Explorer	1	\$15,280	\$15,280
Crew	03 Ford Van	1	\$15,000	\$15,000
Crew	99 Ford Expedition	1	\$29,000	\$29,000
Admin	01 Chevy Tahoe	1	\$28,400	\$28,400
Admin	97 Ford Crown Vic	1	\$18,000	\$18,000
Pumper	07 Pumper	5	\$395,000	\$1,975,000
Quint	07 Quint	1	\$700,000	\$700,000
<b>TOTAL</b>		<b>57</b>		<b>\$6,792,525</b>

	Proportionate Share	2006 Demand Units	Vehicles Per Demand Unit	Cost per Demand Unit
Residential	85%	37,538 persons	0.0013	\$152.99
Nonresidential	15%	41,926 nonres trips	0.0002	\$25.04

\*Source: Prince George County Fire Department

## **FIRE CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current Fire Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$12,300) is allocated to the projected increase in population and trips over the next five years. This results in a cash proffer study cost per demand unit of \$1.82 per person and per nonresidential trip (\$12,300/6,749 people and nonresidential trips).

## **CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON FIRE IMPROVEMENTS**

Because the County debt financed the purchase of fire vehicles and a portion of recent fire facility construction costs, TischlerBise recommends a credit for future principal payments on outstanding debt. Prince George County Finance staff provided the amount of projected outstanding fire-related debt for capacity improvements and principal payment schedules. Existing debt includes the construction of the county administration building (which includes space for fire administration), improvements to two fire stations and the purchase of fire vehicles.

Figure 31 provides the credit calculation based on the principal payments to be made by the County on the outstanding fire-related debt. A credit is necessary since new development that pay cash proffers will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person and per trip are discounted using a net present value formula based on the applicable discount rate (based on the true interest cost for each debt issuance).

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential and non-residential property owners. This allocation is made using the calls for service share discussed earlier in this section (85% to residential and 15% to non-residential). The credit amount of \$29.94 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. The subtraction is repeated with the per trip credit amount of \$4.90 to arrive at a net capital cost per trip. Population and trip projections are discussed in detail in the Appendix.

**Figure 31: Credit for Future Payments**

**Series 2003 - Co. Admin. Building (Fire Admin Portion)**

Fiscal Year	Principal for Fire Admin	Proportionate Share		Share of Principal		Projected Population	Projected Trips	Payment/Person	Payment/Trip
		Res.	Nonres.	Res.	Nonres.				
2006	\$12,314	85%	15%	\$10,411	\$1,903	37,538	41,926	\$0.28	\$0.05
2007	\$12,787	85%	15%	\$10,810	\$1,976	38,175	42,638	\$0.28	\$0.05
2008	\$13,278	85%	15%	\$11,226	\$2,052	38,813	43,350	\$0.29	\$0.05
2009	\$13,787	85%	15%	\$11,657	\$2,131	39,451	44,062	\$0.30	\$0.05
2010	\$14,317	85%	15%	\$12,104	\$2,213	40,088	44,774	\$0.30	\$0.05
2011	\$14,867	85%	15%	\$12,569	\$2,298	40,726	45,487	\$0.31	\$0.05
2012	\$15,438	85%	15%	\$13,052	\$2,386	41,364	46,199	\$0.32	\$0.05
2013	\$16,030	85%	15%	\$13,553	\$2,477	42,001	46,911	\$0.32	\$0.05
2014	\$16,646	85%	15%	\$14,073	\$2,573	42,639	47,623	\$0.33	\$0.05
2015	\$17,285	85%	15%	\$14,614	\$2,671	43,277	48,335	\$0.34	\$0.06
2016	\$17,949	85%	15%	\$15,175	\$2,774	43,914	49,048	\$0.35	\$0.06
2017	\$18,638	85%	15%	\$15,758	\$2,880	44,552	49,760	\$0.35	\$0.06
2018	\$19,354	85%	15%	\$16,363	\$2,991	45,190	50,472	\$0.36	\$0.06
2019	\$20,097	85%	15%	\$16,991	\$3,106	45,827	51,184	\$0.37	\$0.06
2020	\$20,869	85%	15%	\$17,644	\$3,225	46,465	51,897	\$0.38	\$0.06
2021	\$21,670	85%	15%	\$18,321	\$3,349	47,103	52,609	\$0.39	\$0.06
2022	\$22,502	85%	15%	\$19,025	\$3,478	47,740	53,321	\$0.40	\$0.07
2023	\$23,366	85%	15%	\$19,755	\$3,611	48,378	54,033	\$0.41	\$0.07
<b>TOTAL</b>				<b>\$263,100</b>	<b>\$48,094</b>			<b>\$6.07</b>	<b>\$0.99</b>
							Discount Rate	3.84%	3.84%
							Net Present Value	\$4.23	\$0.69

**Series 2004 - Co. Admin. Building (Fire Admin Portion)**

Fiscal Year	Share for County Admin.	Proportionate Share		Share of Principal		Projected Population	Projected Trips	Payment/Person	Payment/Trip
		Res.	Nonres.	Res.	Nonres.				
2006	\$95,302	85%	15%	\$3,366	\$615	37,538	41,926	\$0.09	\$0.01
2007	\$98,803	85%	15%	\$3,490	\$638	38,175	42,638	\$0.09	\$0.01
2008	\$102,432	85%	15%	\$3,618	\$661	38,813	43,350	\$0.09	\$0.02
2009	\$106,194	85%	15%	\$3,751	\$686	39,451	44,062	\$0.10	\$0.02
2010	\$110,095	85%	15%	\$3,889	\$711	40,088	44,774	\$0.10	\$0.02
2011	\$114,139	85%	15%	\$4,032	\$737	40,726	45,487	\$0.10	\$0.02
2012	\$118,331	85%	15%	\$4,180	\$764	41,364	46,199	\$0.10	\$0.02
2013	\$122,678	85%	15%	\$4,333	\$792	42,001	46,911	\$0.10	\$0.02
2014	\$127,184	85%	15%	\$4,492	\$821	42,639	47,623	\$0.11	\$0.02
2015	\$131,855	85%	15%	\$4,657	\$851	43,277	48,335	\$0.11	\$0.02
2016	\$136,699	85%	15%	\$4,828	\$883	43,914	49,048	\$0.11	\$0.02
2017	\$141,720	85%	15%	\$5,006	\$915	44,552	49,760	\$0.11	\$0.02
2018	\$146,925	85%	15%	\$5,190	\$949	45,190	50,472	\$0.11	\$0.02
2019	\$152,324	85%	15%	\$5,380	\$984	45,827	51,184	\$0.12	\$0.02
<b>TOTAL</b>	<b>\$1,704,680</b>			<b>\$60,213</b>	<b>\$11,007</b>			<b>\$1.44</b>	<b>\$0.24</b>
							Discount Rate	3.64%	3.64%
							Net Present Value	\$1.10	\$0.18

**Prince George County Cash Proffer Study**

**GO&RB-Series 1996B**

Year	Share for Jeff. Park and PG Station Add.	Proportionate Share		Share of Principal		Projected Population	Projected Trips	Payment/ Person	Payment/ Trip
		Res.	Nonres.	Res.	Nonres.				
2006	\$16,170	85%	15%	\$13,671	\$2,499	37,538	41,926	\$0.36	\$0.06
2007	\$5,880	85%	15%	\$4,971	\$909	38,175	42,638	\$0.13	\$0.02
2008	\$5,880	85%	15%	\$4,971	\$909	38,813	43,350	\$0.13	\$0.02
2009	\$6,370	85%	15%	\$5,386	\$984	39,451	44,062	\$0.14	\$0.02
2010	\$6,615	85%	15%	\$5,593	\$1,022	40,088	44,774	\$0.14	\$0.02
2011	\$6,860	85%	15%	\$5,800	\$1,060	40,726	45,487	\$0.14	\$0.02
2012	\$7,350	85%	15%	\$6,214	\$1,136	41,364	46,199	\$0.15	\$0.02
2013	\$7,840	85%	15%	\$6,628	\$1,212	42,001	46,911	\$0.16	\$0.03
								<b>\$0.98</b>	<b>\$0.16</b>
Discount Rate								5.6%	5.6%
Net Present Value								\$0.79	\$0.13

**2006 Debt Issue (Fire Vehicles)**

Fiscal Year	Principal for Fire Vehicles	Proportionate Share		Share of Principal		Projected Population	Projected Trips	Payment/ Person	Payment/ Trip
		Res.	Nonres.	Res.	Nonres.				
2007	\$156,165	85%	15%	\$132,030	\$24,135	38,175	42,638	\$3.46	\$0.57
2008	\$162,411	85%	15%	\$137,311	\$25,100	38,813	43,350	\$3.54	\$0.58
2009	\$168,908	85%	15%	\$142,804	\$26,104	39,451	44,062	\$3.62	\$0.59
2010	\$175,664	85%	15%	\$148,516	\$27,148	40,088	44,774	\$3.70	\$0.61
2011	\$182,691	85%	15%	\$154,457	\$28,234	40,726	45,487	\$3.79	\$0.62
2012	\$189,998	85%	15%	\$160,635	\$29,363	41,364	46,199	\$3.88	\$0.64
2013	\$197,598	85%	15%	\$167,060	\$30,538	42,001	46,911	\$3.98	\$0.65
2014	\$205,502	85%	15%	\$173,743	\$31,759	42,639	47,623	\$4.07	\$0.67
2015	\$213,722	85%	15%	\$180,692	\$33,030	43,277	48,335	\$4.18	\$0.68
2016	\$222,271	85%	15%	\$187,920	\$34,351	43,914	49,048	\$4.28	\$0.70
								<b>\$38.50</b>	<b>\$6.30</b>
Discount Rate								4.0%	4.0%
Net Present Value								\$23.82	\$3.90
<b>Total Fire Credit Per Demand Unit</b>								<b>\$29.94</b>	<b>\$4.90</b>

**FIRE CASH PROFFER INPUT VARIABLES**

Figure 32 shows level of service standards and factors for fire cash proffers for Prince George County. Cash proffers for fire are based on household size (i.e., persons per housing unit) and are requested of residential and non-residential development. Level of service standards are based on costs per person and per trip for fire facilities and vehicles and equipment.



Figure 32: Fire Cash Proffer Input Variables

INPUT VARIABLES	Residential	Nonresidential
<i>Persons Per Housing Unit</i>		
Single Family Detached	2.66	
All Other Housing	2.50	
<i>Weekday Vehicle Trip Ends per 1,000 Square Feet</i>		
Com / Shop Ctr 10,000 SF or less		152.03
Com / Shop Ctr 10,001 to 25,000 SF		110.32
Com / Shop Ctr 25,001-50,000 SF		86.56
Com / Shop Ctr 50,001-100,000 SF		67.91
Com / Shop Ctr 100,001-200,000 SF		53.28
Com / Shop Ctr 200,001-400,000 SF		41.80
Office / Inst 10,000 SF or less		22.66
Office / Inst 10,001-25,000 SF		18.35
Office / Inst 25,001-50,000 SF		15.65
Office / Inst 50,001-100,000 SF		13.34
Office / Inst 100,001-200,000 SF		11.37
Business Park		12.76
Light Industrial		6.97
Warehousing		4.96
Manufacturing		3.82
<i>Trip Adjustment Factors</i>		
Com / Shop Ctr 10,000 SF or less		24%
Com / Shop Ctr 25,000 SF or less		28%
Com / Shop Ctr 25,001-50,000 SF		31%
Com / Shop Ctr 50,001-100,000 SF		33%
Com / Shop Ctr 100,001-200,000 SF		36%
Com / Shop Ctr 200,001-400,000 SF		39%
All Other Nonresidential Development		50%
<i>Cost Factors</i>		
	<u>Per Person</u>	<u>Per Trip</u>
Fire Admin Facility (Cost Recovery)	\$8.45	\$1.57
Fire Stations (Incremental Expansion)	\$234.67	\$38.41
Vehicles and Equipment (Incremental Expansion)	\$152.99	\$25.04
Cash Proffer Study	\$1.82	\$1.82
<b>Gross Capital Cost Per Demand Unit</b>	<b>\$397.93</b>	<b>\$66.84</b>
<b>Principal Payment Credit Per Demand Unit</b>	<b>(\$29.94)</b>	<b>(\$4.90)</b>
<b>Net Capital Cost Per Demand Unit</b>	<b>\$367.99</b>	<b>\$61.94</b>

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR FIRE**

Figure 33 contains a schedule of Fire Cash Proffers for Prince George County. The amounts are calculated by multiplying the persons per housing unit for each type of housing by the net capital cost per person. For example, for a single family detached unit, the persons per housing unit figure of 2.66 is multiplied by the net capital cost per person of \$367.99 for a cash proffer amount of \$978. The calculation is repeated for all other housing types. For non-residential development, the employees per 1,000 sq. ft. is multiplied by the

appropriate trip adjustment factor and then by the net capital cost per trip. For example, for a commercial/shopping center less than 10,000 sq. ft., 152.03 trips per 1,000 sq. ft. is multiplied by a trip adjustment factor of 24% and then by \$61.94 per trip. This results in a cash proffer of \$2,260 per 1,000 sq. ft. for that nonresidential use. This calculation is repeated for the remaining non-residential categories.

**Figure 33: Fire Cash Proffer Schedule**

<b>MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS</b>		
<u>Residential</u>	<u>Per Housing Unit</u>	
Single Family	\$978	
Multi-Family	\$920	
<u>Nonresidential</u>		<u>Per 1,000 Sq. Ft.</u>
Com / Shop Ctr 10,000 SF or less		\$2,260
Com / Shop Ctr 10,001 to 25,000 SF		\$1,913
Com / Shop Ctr 25,001-50,000 SF		\$1,662
Com / Shop Ctr 50,001-100,000 SF		\$1,388
Com / Shop Ctr 100,001-200,000 SF		\$1,188
Com / Shop Ctr 200,001-400,000 SF		\$1,010
Office / Inst 10,000 SF or less		\$702
Office / Inst 10,001-25,000 SF		\$568
Office / Inst 25,001-50,000 SF		\$485
Office / Inst 50,001-100,000 SF		\$413
Office / Inst 100,001-200,000 SF		\$352
Business Park		\$395
Light Industrial		\$216
Warehousing		\$154
Manufacturing		\$118

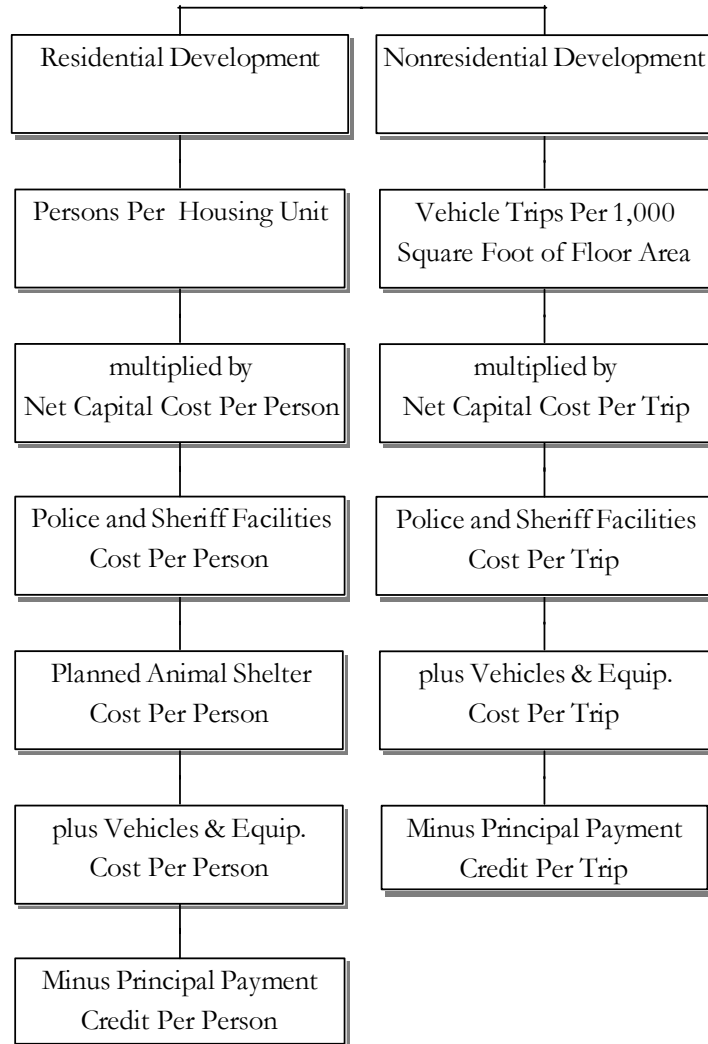
## Public Safety

### **METHODOLOGY**

The Public Safety cash proffer uses an incremental expansion cost approach to determine the need for police and sheriff facilities. For the planned animal shelter, the plan-based approach is used. The Prince George County Police Department and Sheriff serve both residential and non-residential development, providing protection to residents and businesses. The animal shelter is allocated 100% to residential development.

As shown in Figure 34, this cash proffer is allocated on a per capita basis for residential development. For nonresidential development, the proffer methodology allocates the capital cost on a per nonresidential trip basis. TischlerBise recommends using nonresidential vehicle trips as the best demand nonresidential demand indicator for police and sheriff facilities and vehicles. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for police and sheriff services. If employees per thousand square feet were used as the demand indicator, cash proffers would be too high for office/institutional development. If floor area were used as the demand indicator, cash proffers would be too high for industrial development.

**Figure 34: Public Safety Cash Proffer Methodology**



**CALLS FOR SERVICE - POLICE**

The most accurate source for determining demand for police services is calls for service generated by residential and nonresidential land uses. The Prince George County Police Department provided data on calls for service by residential and nonresidential land use for the period of April 6-May 6, 2006. This period is considered representative of a typical month for the Department. TischlerBise used the survey to determine residential and nonresidential proportionate share factors. Of the 1,652 police calls received during the period, 1,327 calls (80%) were to residential land uses, with nonresidential uses accounting for 325 calls (20%).

**PROPORTIONATE SHARE FACTORS - SHERIFF**

The Sheriff does not have “calls for service” per se; as the Sheriff’s primary work is done in support of the County Courthouse. In lieu of calls for service, the Sheriff Cash Proffer is

calculated using the proportionate share analysis first presented in the general government cash proffer section.

The Sheriff components of the public safety cash proffer uses a functional population concept to allocate capital costs to residential and nonresidential development. The table distinguishes time at home (2/3 of a day, 16 hours) versus time at work (1/3 of a day, 8 hours) and accounts for commuting patterns in Prince George County. According to 2000 Census data, 45% of all workers in Prince George County worked in the County in 2000. This percentage was applied to the 2006 population estimate of 37,538 for the County, resulting in an estimated 5,230 County residents working in Prince George County in 2005. According to the functional population analysis, residential development accounts for 89% of the demand for Sheriff facilities and vehicles and equipment and nonresidential development accounts for 11% of the demand.

**Figure 35: Proportionate Share – Residential and Nonresidential**

	<u>Demand Units in 2006</u>	<u>Demand</u>	<u>Person</u>
		<u>Hours/Day</u>	<u>Hours</u>
<b>Residential</b>			
Resident Population (2006) <sup>1</sup>	37,538		
Residents Not Working	24,391	24	585,376
Workers Living in Prince George County <sup>2</sup>	13,147		
Residents Working in Prince George <sup>3</sup>	5,230	16	83,687
Residents Working outside of Prince George	7,226	16	115,619
	<i>Residential Subtotal</i>		<u>784,682</u>
			89%
<b>Nonresidential</b>			
Jobs Located in Prince George (2006) <sup>4</sup>	11,614		
Residents Working in Prince George <sup>3</sup>	5,230	8	41,844
Non-Resident Workers	6,384	8	51,069
	<i>Nonresidential Subtotal</i>		<u>92,913</u>
			11%
		<b>TOTAL</b>	<u><u>877,595</u></u>

<sup>1</sup> Source: Population projection for 2006 based on 2005 estimate from Weldon Cooper Center for Public Service, assumes 244 new housing units/year.

<sup>2</sup> Source: Bureau of Labor Statistics, Civilian Labor Force estimate for 2000

<sup>3</sup> Source: County residents working in the County is based on data in Table P26 from STF3, Census 2000 detailing the proportion of residents working in the County. In 2000, 45% percent of all residents worked in the County. The same proportion of residents was used to derive the number of County residents working in the County in 2006.

<sup>4</sup> Projection based on population to jobs ratio of .31, using 2004 job figure from the Quarterly Census of Employment and Wages

## **PUBLIC SAFETY FACILITIES**

### *Police Facilities*

The incremental expansion methodology is used to derive the cost component of the cash proffer for the County’s police facilities. Figure 36 provides an inventory of all police facilities with square footage. The Emergency Communications Center is currently under construction, and the cost per sq. ft. reflects the 2006 construction cost for this facility. This

**Prince George County Cash Proffer Study**

replacement cost is also used for the Police Station, as the County expects expansions or new construction to be comparable in cost.

To calculate the residential level of service, the total square footage is multiplied by 80% (based on police calls for service, discussed above) and then divided by the current population, resulting in .35 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 20% (see discussion above) and dividing by the number of nonresidential trips in the County in 2006, providing for .08 square feet per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$73.09 per person and \$16.03 per nonresidential trip.

**Figure 36: Police Facility Level of Service and Cost Standards**

Facility	Sq. Ft.	Replace. Cost/Sq. Ft.	Replacement Cost*
Public Safety Building #2	11,500	\$297	\$3,415,500
Emergency Communications Center	4,800	\$297	\$1,425,764
TOTAL	16,300		\$3,415,500

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	80%	37,538 persons	0.35	\$73.09
Nonresidential	20%	41,926 nonres trips	0.08	\$16.03

\*Emergency Communications Center from Capital Expenditures List through 2005, 1/06, replacement cost includes building equipment, excluding the radio system. Public Safety Building replacement cost estimated to be the same as that of the ECC.

*Sheriff Facilities*

The incremental expansion methodology is used to derive the cost component of the cash proffer for the County’s sheriff facilities. Figure 37 provides shows the square footage for the Sheriff’s space in the County Courthouse. The replacement cost reflects the County’s insurance replacement cost for that portion of the facility, adjusted for inflation.

To calculate the residential level of service, the total square footage is multiplied by 89% (based on proportionate share analysis in Figure 35) and then divided by the current population, resulting in .08 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 11% (see discussion above) and dividing by the number of nonresidential vehicle trips in the County in 2006, providing for .01 square feet per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$14.44 per person and \$1.53 per nonresidential trip.

**Figure 37: Sheriff Facility Level of Service and Cost Standards**

Facility	Square Footage	Replace. Cost/Sq. Ft.	Replacement Cost*	Inflation Factor	2005 Replacement Cost
Courthouse Space	3,150	\$182	\$573,300	1.06	\$606,381
TOTAL	3,150		\$573,300		\$606,381

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	89%	37,538 persons	0.08	\$14.44
Nonresidential	11%	41,926 nonres trips	0.01	\$1.53

\*Source: Prince George County Statement of Values, 11/04, costs adjusted for inflation.

*Planned Animal Shelter*

Prince George County plans to construct a new animal shelter to serve residential development in the County. Levels of service standards and the estimated cost for the animal shelter are shown in Figure 38. The facility is planned for 7,500 square feet, costing \$1.25 million to construct. This results in a cost per square foot of \$167.

The cost per person of \$28.06 is derived by multiplying the total cost (\$1,250,000) by 100 percent (as the animal shelter will be 100% attributable to residential development), then dividing by 44,552 persons, the projected population in 2017. Capital costs are allocated to projected population in 2017 since it is estimated the facility will have adequate capacity for approximately 10 years into the future. The level of service standard is .17 square feet per person.

**Figure 38: Animal Shelter Level of Service and Cost Standards**

	Bldg/SF	Year Built	Cost/SF	Const. Cost*
Planned Animal Shelter	7,500	2007	\$167	\$1,250,000
	Total			\$1,250,000
	Proportionate Share	2017 Demand Units		Sq. Ft. per Person
Residential	100%	44,552 persons		0.17
				Cost per Person
				\$28.06

\*Source: Prince George County Capital Improvement Plan

**PUBLIC SAFETY VEHICLES AND EQUIPMENT**

*Police*

The incremental expansion methodology is also used to derive the Police Vehicles and Equipment cost component of the cash proffer. Figure 39 provides an inventory of current vehicles and equipment. Current replacement cost for County vehicles is provided by the County.

To calculate the residential level of service, the total number of units is multiplied by 80% (based on police calls for service discussed in the beginning of this section) and then divided by the current population, resulting in .0013 vehicles per person. Nonresidential level of service is calculated by multiplying the total number of vehicles by 20% (see calls for service) and dividing by the number of nonresidential vehicle trips in the County in 2006, providing for .0003 vehicles per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$34.66 per person and \$7.60 per trip.

**Figure 39: Police Vehicles and Equipment Level of Service and Cost Standards**

Type of Vehicle/Equipment	Units in Service	Unit Replacement Cost*	Total Replacement Cost
Ford Crown Victoria	33	\$28,500	\$940,500
Pick-Up	7	\$18,000	\$126,000
Non-Patrol Sedan	14	\$28,500	\$399,000
Sports Utility Vehicle	7	\$22,000	\$154,000
<b>TOTAL</b>	<b>61</b>		<b>\$1,619,500</b>

	Proportionate Share	2006 Demand Units	Vehicles per Demand Unit	Cost per Demand Unit
Residential	80%	37,538 persons	0.0013 persons	\$34.66
Nonresidential	20%	41,926 nonres trips	0.0003 nonres trips	\$7.60

\*Source: Prince George County Public Safety

*Sheriff*

The incremental expansion methodology is also used to derive the Sheriff Vehicles and Equipment cost component of the cash proffer. Figure 40 provides an inventory of current vehicles and equipment. Current replacement cost for County vehicles is provided by the County.

To calculate the residential level of service, the total number of units is multiplied by 89% (based on proportionate share analysis in Figure 35) and then divided by the current population, resulting in .0003 vehicles per person. Nonresidential level of service is calculated by multiplying the total number of vehicles by 11% (see Figure 35) and dividing by the number of nonresidential vehicle trips in the County in 2006, providing for .00003 vehicles per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$7.84 per person and \$.83 per trip.

**Figure 40: Sheriff Vehicles and Equipment Level of Service and Cost Standards**

Type of Vehicle/Equipment	Units in Service	Unit Replacement Cost*	Total Replacement Cost
Ford Crown Victoria	10	\$28,500	\$285,000
Sports Utility Vehicle	2	\$22,000	\$44,000
<b>TOTAL</b>	<b>12</b>		<b>\$329,000</b>

	Proportionate Share	2006 Demand Units	Vehicles per Demand Unit	Cost per Demand Unit
Residential	89%	37,538 persons	0.0003 persons	\$7.84
Nonresidential	11%	41,926 nonres trips	0.00003 nonres trips	\$.83

\*Source: Prince George County Public Safety



## **PUBLIC SAFETY CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current Public Safety Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$11,550) is allocated to the projected increase in population and trips over the next five years. This results in a cash proffer study cost per demand unit of \$1.71 per person and per nonresidential trip (\$11,550/6,749 people and nonresidential trips).

## **CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON PUBLIC SAFETY IMPROVEMENTS**

Because the County debt financed a portion of recent public safety facility construction costs, TischlerBise recommends a credit for future principal payments on outstanding debt. Prince George County Finance staff provided the amount of projected outstanding general government-related debt for capacity projects and principal payment schedules. Existing debt for the construction of the Emergency Communications Center is included, along with projected debt for the planned animal shelter.

Figure 41 provides the credit calculation based on the principal payments to be made by the County on the outstanding and planned public safety related debt. A credit is necessary since new development that pay cash proffers will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person and per trip are discounted using a net present value formula based on the applicable discount rate (based on the true interest cost for each debt issuance).

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential and non-residential property owners. This allocation is made using the calls for service share (for police) discussed earlier in this section (80% to residential and 20% to non-residential). The planned debt for the animal shelter is allocated 100% to residential. The credit amount of \$36.47 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. The subtraction is repeated with the per trip credit amount of \$4.33 to arrive at a net capital cost per trip. Population and trip projections are discussed in detail in the Appendix.



## **PUBLIC SAFETY CASH PROFFER INPUT VARIABLES**

Figure 42 shows level of service standards and factors for public safety cash proffers for Prince George County. Cash proffers for public safety are based on household size (i.e., persons per housing unit) and are requested of residential and non-residential development. Level of service standards are based on current costs per person and per trip for public safety facilities and vehicles and equipment.

**Figure 42: Public Safety Cash Proffer Input Variables**

<b>INPUT VARIABLES</b>	<b>Residential</b>	<b>Nonresidential</b>
<i>Persons Per Housing Unit</i>		
Single Family Detached	2.66	
All Other Housing	2.50	
<i>Weekday Vehicle Trip Ends per 1,000 Square Feet</i>		
Com / Shop Ctr 10,000 SF or less		152.03
Com / Shop Ctr 10,001 to 25,000 SF		110.32
Com / Shop Ctr 25,001-50,000 SF		86.56
Com / Shop Ctr 50,001-100,000 SF		67.91
Com / Shop Ctr 100,001-200,000 SF		53.28
Com / Shop Ctr 200,001-400,000 SF		41.80
Office / Inst 10,000 SF or less		22.66
Office / Inst 10,001-25,000 SF		18.35
Office / Inst 25,001-50,000 SF		15.65
Office / Inst 50,001-100,000 SF		13.34
Office / Inst 100,001-200,000 SF		11.37
Business Park		12.76
Light Industrial		6.97
Warehousing		4.96
Manufacturing		3.82
<i>Trip Adjustment Factors</i>		
Com / Shop Ctr 10,000 SF or less		24%
Com / Shop Ctr 10,001 to 25,000 SF		28%
Com / Shop Ctr 25,001-50,000 SF		31%
Com / Shop Ctr 50,001-100,000 SF		33%
Com / Shop Ctr 100,001-200,000 SF		36%
Com / Shop Ctr 200,001-400,000 SF		39%
All Other Nonresidential Development		50%
<i>Cost Standards</i>		
	<u>Per Person</u>	<u>Per Trip</u>
Police Facilities (Incremental Expansion)	\$73.09	\$16.03
Sheriff Facilities (Incremental Expansion)	\$14.44	\$1.53
Animal Shelter (Plan-Based)	\$28.06	\$0.00
Police Vehicles and Equipment (Incremental Expansion)	\$34.66	\$7.60
Sheriff Vehicles and Equipment (Incremental Expansion)	\$7.84	\$0.83
Cash Proffer Study	\$1.71	\$1.71
<b>Gross Capital Cost Per Demand Unit</b>	<b>\$159.79</b>	<b>\$27.70</b>
Principal Payment Credit Per Demand Unit	(\$36.47)	(\$4.33)
<b>Net Capital Cost Per Demand Unit</b>	<b>\$123.33</b>	<b>\$23.37</b>

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR PUBLIC SAFETY**

Figure 43 contains a schedule of Public Safety Cash Proffers for Prince George County. The amounts are calculated by multiplying the persons per housing unit for each type of housing by the net capital cost per person. For example, for a single family detached unit, the persons per housing unit figure of 2.66 is multiplied by the net capital cost per person of \$123.33 for a cash proffer amount of \$328. The calculation is repeated for all other housing types. For non-residential development, the employees per 1,000 sq. ft. is multiplied by the appropriate trip adjustment factor and then by the net capital cost per trip. For example, for a commercial/shopping center less than 10,000 sq. ft., 152.03 trips per 1,000 sq. ft. is multiplied by a trip adjustment factor of 24% and then by \$23.37 per trip. This results in a cash proffer of \$853 per 1,000 sq. ft. This calculation is repeated for the remaining non-residential categories.

**Figure 43: Public Safety Cash Proffer Schedule**

<b>MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS</b>		
<u>Residential</u>	<u>Per Housing Unit</u>	
Single Family Detached	\$328	
All Other Housing	\$308	
<u>Nonresidential</u>		<u>Per 1,000 Sq. Ft.</u>
Com / Shop Ctr 10,000 SF or less		\$853
Com / Shop Ctr 10,001 to 25,000 SF		\$722
Com / Shop Ctr 25,001-50,000 SF		\$627
Com / Shop Ctr 50,001-100,000 SF		\$524
Com / Shop Ctr 100,001-200,000 SF		\$448
Com / Shop Ctr 200,001-400,000 SF		\$381
Office / Inst 10,000 SF or less		\$265
Office / Inst 10,001-25,000 SF		\$214
Office / Inst 25,001-50,000 SF		\$183
Office / Inst 50,001-100,000 SF		\$156
Office / Inst 100,001-200,000 SF		\$133
Business Park		\$149
Light Industrial		\$81
Warehousing		\$58
Manufacturing		\$45

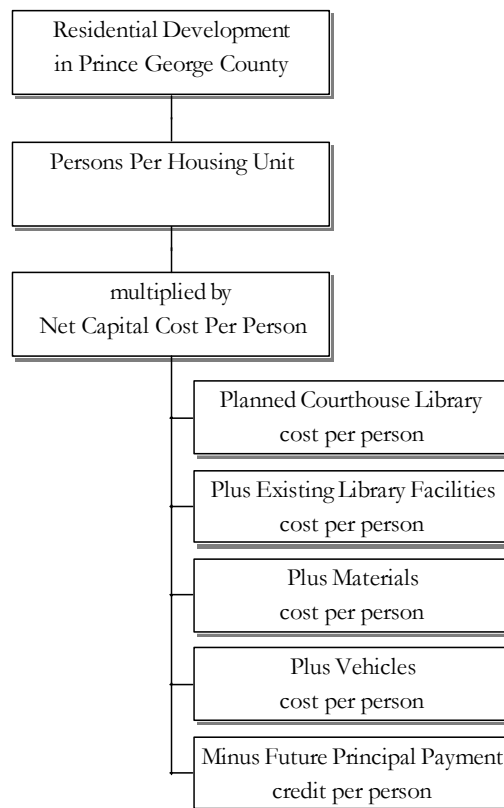
## Libraries

### **METHODOLOGY**

The Appomattox Regional Library System provides library services to all residents of Prince George County, as well as the residents of Dinwiddie County and the City of Hopewell. Prince George County owns the three Library System buildings in Prince George County: Disputanta, Carson and Burrowsville. Capital costs reflect the costs attributable to Prince George County, and are allocated to residential development on a per capita basis. Persons per housing unit is used to differentiate the cash proffers by type of housing (see Appendix 1 for demographic information).

The Library Cash Proffer includes components for library facilities, collections and vehicles. For facilities, the plan-based method is used for the planned Courthouse library. The incremental-expansion method is used for all other facilities, collections and vehicles.

**Figure 44: Library Cash Proffer Methodology Chart**



**LIBRARY FACILITIES**

Prince George County plans to build a new library near the County Courthouse in 2011. The plan-based approach is used to calculate this component of the library cash proffer.

Levels of service standards and the estimated cost for the Courthouse library are shown in Figure 45. The facility is planned for 2011 and is estimated by the County to be 17,300 sq. ft. in size. The cost is estimated at \$202 per square foot for a total construction cost of \$3.5 million.

The cost per person of \$65.44 is derived by multiplying the total cost (\$3,500,000) by 100 percent (as library facilities are 100% attributable to residential development), then dividing by 53,479 persons, the projected population in 2031. Capital costs are allocated to projected population in 2031 since it is estimated the facility will have adequate capacity for approximately 20 years into the future. The level of service standard is .32 square feet per person.

**Figure 45: Planned Courthouse Library Level of Service and Cost Standards**

	<i>BldgSF</i>	<i>Year Built</i>	<i>Cost/SF</i>	<i>Const. Cost*</i>
Courthouse Library - Planned	17,300	2011	\$202	\$3,500,000
	Total			\$3,500,000
	Proportionate Share	2031 Demand Units	Sq. Ft. per Person	Cost per Person
Residential	100%	53,479 population	0.32	\$65.44

*\*Source: Prince George County Capital Improvement Plan*

The incremental expansion methodology is used to derive the cost component for the County’s existing library facilities. This methodology is used for these facilities as they were not built with excess capacity and therefore will need to be expanded as new development creates more demand for services. Figure 46 provides an inventory of library branches with square footage. Replacement cost is based on the insurance value for the facilities.

To calculate the level of service, the total square footage is multiplied by 100% (as library facilities are 100% attributable to residential development) and then divided by the current population, resulting in .11 square feet per person. To determine cost factors, the calculation is repeated with the total cost, resulting in a cost per person of \$9.20.

**Figure 46: Other Library Facilities Level of Service and Cost Standards**

	Square Feet	Project Cost/SF	Cost*
Disputanta Library	1,200	\$83	\$100,000
Carson Library	1,200	\$42	\$50,000
Burrowsville Library	1,732	\$113	\$195,430
<b>TOTAL</b>	<b>4,132</b>		<b>\$345,430</b>

Residential Share	2006 Demand Units	Sq. Ft. Per Person	Cost per Person
100%	37,538 Population	0.11	\$9.20

\*Source: Prince George County. Disputanta library occupies 1,200 sq. ft. in the 7,200 sq. ft. community building, replacement cost prorated. Burrowsville library occupies 1,732 sq. ft. of a 7,090 sq. ft. community building, replacement cost prorated.

**LIBRARY MATERIALS**

The incremental expansion methodology is used to derive the cost component for the library materials in Prince George County’s three library branches. Figure 47 provides a summary of materials along with an average replacement cost per item.

To calculate the level of service, the number of items in the library collection is multiplied by 100% (as library facilities are 100% attributable to residential development) and then divided by the current population, resulting in .48 materials per person. To determine cost factors, the calculation is repeated with the total cost, resulting in a cost per person of \$8.63.

**Figure 47: Library Materials Level of Service and Cost Standards**

	# of units in Prince George libraries	Unit Price*	Total Replacement Cost
Collection (Printed Materials, DVDs, Books on Tape)	18,000	\$18	\$324,000
<b>TOTAL</b>	<b>18,000</b>	<b>\$18</b>	<b>\$324,000</b>

Residential Share	2006 Demand Units	Materials Per Person	Cost per Person
100%	37,538 Population	0.48	\$8.63

Source: Appomattox Regional Library System

**LIBRARY VEHICLES**

The incremental expansion methodology is also used to derive the Library Vehicle cost component of the cash proffer. Figure 48 provides an inventory of the Library System’s current vehicle fleet. Prince George County residents represent 43% of the Library System’s service area, so 43% of the vehicle fleet units are allocated to Prince George County. Current replacement cost for vehicles is provided by the Library System. For the share of vehicles attributed to Prince George County, total vehicle value is estimated at \$82,270 for a per capita cost of \$2.19.

**Figure 48: Library Vehicle Level of Service and Cost Standards**

Type of Vehicle/Equipment	Units	Share to PG 43.3%*	Unit Replacement Cost*	Total Replacement Cost
Bookmobile	1	0.433	\$130,000	\$56,290
Van	3	1.299	\$20,000	\$25,980
<b>TOTAL</b>		<b>1.732</b>		<b>\$82,270</b>

Residential Share	2006 Demand Units	Units Per Person	Cost per Person
100%	37,538 Population	0.00005	\$2.19

*\*The Appomattox Regional Library System serves the residents of Prince George County, Dinwiddie County and the City of Hopewell. According to the Weldon Cooper Center, the State's Data Center, the 2005 population for these three communities totalled 85,200 in 2005. Prince George population in 2005 was estimated at 36,900, representing 43% of the library's systems service area. A share of the system's vehicles is allocated to Prince George County on this basis.*

*\*\*Source: Appomattox Regional Library System*

**CASH PROFFER STUDY**

The County should update its cash proffers every five years to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing the current Library Cash Proffer in the proffer calculations in order to create a source of funding to conduct this regular update. This cost (\$8,800) is allocated to the projected increase in population over the next five years. This results in a cash proffer study cost per demand unit of \$2.76 per person (\$8,800/3,188 people = \$2.76).

**CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON LIBRARY IMPROVEMENTS**

Because the County expects to use debt financing to build the planned Courthouse library, TischlerBise recommends a credit for future principal payments on planned debt. Figure 41 provides the credit calculation based on the principal payments to be made by the County on the planned library related debt. A credit is necessary since new development that pay cash proffers will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person are discounted using a net present value formula based on the applicable discount rate.

The amount of the debt is allocated 100% to residential, as residential development is the driver of library demand. The credit amount of \$3.79 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. Population projections are discussed in detail in the Appendix.



**Figure 49: Credit for Future Payments**

**Planned Courthouse Library**

**Expected Debt**                    \$3,500,000

<i>Fiscal Year</i>	<i>Principal</i>	<i>Projected Population</i>	<i>Payment/ Person</i>
2011	\$111,567	40,726	\$0.37
2012	\$116,587	41,364	\$0.35
2013	\$121,833	42,001	\$0.34
2014	\$127,316	42,639	\$0.33
2015	\$133,045	43,277	\$0.33
2016	\$139,032	43,914	\$0.32
2017	\$145,289	44,552	\$0.31
2018	\$151,827	45,190	\$0.30
2019	\$158,659	45,827	\$0.29
2020	\$165,798	46,465	\$0.28
2021	\$173,259	47,103	\$0.27
2022	\$181,056	47,740	\$0.26
2023	\$189,204	48,378	\$0.26
2024	\$197,718	49,016	\$0.25
2025	\$206,615	49,653	\$0.24
2026	\$215,913	50,291	\$0.23
2027	\$225,629	50,929	\$0.23
2028	\$235,782	51,566	\$0.22
2029	\$246,392	52,204	\$0.21
2030	\$257,480	52,842	\$0.21
<b>TOTAL</b>	<b>\$3,500,000</b>		<b>\$5.59</b>
	Discount Rate		4.50%
	Net Present Value		\$3.79

**LIBRARY CASH PROFFER INPUT VARIABLES**

Figure 50 shows level of service standards and factors for library cash proffers for Prince George County. Cash proffers for libraries are based on household size (i.e., persons per housing unit) and are only requested of residential development. Level of service standards are based on current costs per person for library facilities, materials and vehicles..

**Figure 50: Library Cash Proffer Input Variables**

<b>INPUT VARIABLES</b>	<b>Residential</b>
<i>Persons Per Housing Unit</i>	
Single Family Detached	2.66
All Other Housing	2.50
<i>Level Of Service</i>	
<i>Courthouse Library (Planned)</i>	
Construction Cost Per Person	\$65.44
<i>Other Library Facilities (Incremental-Expansion)</i>	
Other Library Facilities Cost per Person	\$9.20
<i>Library Materials (Incremental-Expansion)</i>	
Library Material Cost per Person	\$8.63
<i>Library Vehicles and Equipment (Incremental-Expansion)</i>	
Library Vehicles and Equipment Cost per Person	\$2.19
<i>Cash Proffer Study</i>	
Cash Proffer Study Cost Per Person	\$2.76
<b>Gross Capital Cost Per Person</b>	<b>\$88.22</b>
<b>Principal Payment Credit Per Person</b>	<b>(\$3.79)</b>
<b>Net Capital Cost per Person</b>	<b>\$84.43</b>

**MAXIMUM SUPPORTABLE CASH PROFFER AMOUNT FOR LIBRARIES**

Figure 51 contains a schedule of Library Cash Proffers for Prince George County. The amounts are calculated by multiplying the persons per housing unit for each type of housing by the net capital cost per person. For example, for a single family detached unit, the persons per housing unit figure of 2.66 is multiplied by the net capital cost per person of \$84.43 for a cash proffer amount of \$224.

**Figure 51: Library Cash Proffer Schedule**

<b>MAXIMUM SUPPORTABLE CASH PROFFER AMOUNTS</b>	<b>Residential</b>
<i>Cash Proffer per Housing Unit</i>	
Single Family Detached	\$224
All Other Housing	\$211

## Appendix: Demographic and Development Estimates and Projections

As specified in Task 1 of our Work Scope, TischlerBise has prepared documentation on current demographic *estimates* and development *projections* that will be used in the Prince George County Cash Proffer Study. The demographic data estimates are for the current year and are used in calculating levels-of-service (LOS). The development projections are used primarily for the purpose of having an understanding of the possible future pace of service demands, cash proffer revenues, and capital expenditures.

TischlerBise's recommended approach is to utilize the University of Virginia Weldon Cooper Center for Public Service's provisional population estimate for 2005 and to project future population and housing projections using the County's building permit data from 2001-2005 as a measure for future growth. To estimate demand for new school facilities, TischlerBise calculated student generation rates using 2000 U.S. Census data calibrated to current enrollment and housing unit figures. For non-residential growth, employment figures from the U.S. Department of Labor are used to project future employment in the County based on population growth. All other demand factors are derived from these key demand indicators. The following sections will review in detail the residential and non-residential demand factors that will be used to calculate cash proffers for Prince George County.

### **RESIDENTIAL DEMAND**

#### **PERSONS PER HOUSING UNIT**

A differentiation by type of housing is necessary to make residential cash proffers proportionate and reasonably related to the demand for public facilities. Persons per housing unit is an important demographic factor that helps account for variations in service demand by type of housing. The best source of this data is the 2000 U.S. Census, Summary File 3. The data for Prince George County is shown in Figure A1 below. Two housing unit categories are recommended based on the demographic characteristics of Prince George County: single-family detached and all other housing types. Single-family detached units have on average 2.66 persons per housing unit (PPHU) and all other housing types have an average PPHU of 2.50.

**Figure A1: Persons Per Housing Unit in Prince George County**

<i>Units in Structure</i>	<i>Renter &amp; Owner Combined</i>			<i>Vacant Units</i>
	<i>Persons</i>	<i>Hsg Units</i>	<i>PPHU</i>	
1-Detached	20,454	7,694	2.66	333
1-Attached	2,416	723	3.34	23
Two	687	207	3.32	0
3-4	1,027	394	2.61	22
5-9	512	253	2.02	15
10-19	117	130	0.90	50
20-49	37	34	1.09	15
50 or more	117	109	1.07	0
Mobile Homes	2,659	1,175	2.26	109
Other	5	7	0.71	0
Total SF3 Sample Data	28,031	10,726	2.61	567
100-Percent Data*	28,079	10,726	2.62	
		Vacant HU	567	
		Vacancy Rate	5.29%	

**Persons Per Housing Unit by Type - 2000**

	<i>Persons</i>	<i>Hsg Units</i>	<i>PPHU</i>	<i>Hsg Mix</i>
Single Family Detached	20,454	7,694	2.66	72%
All Other	7,577	3,032	2.50	28%
Total Less Group Quarters	28,031	10,726	2.61	100%
Group Quarters	5,016			
TOTAL	33,047	10,726		

**Current Estimates by Housing Type - 2005\***

	<i>Persons</i>	<i>Hsg Units</i>	<i>PPHU</i>	<i>Hsg Mix</i>
Single Family Detached	23,266	8,752	2.66	72%
All Other	8,618	3,449	2.50	28%
Total Less Group Quarters	31,884	12,200	2.61	100%
Group Quarters	5,016			
TOTAL	36,900	12,200		

Notes to Tables

Source: 2000 U.S. Census, Summary File 3: Tables P1, P3, P9, H1, H3, H8, H30, H32, H33

\* 2005 Provisional Population Estimate from Weldon Cooper Center for Public Service, University of Virginia

**POPULATION AND HOUSING UNIT ESTIMATES AND PROJECTIONS**

Prince George County’s 2005 population was estimated as 36,900 by the University of Virginia’s Weldon Cooper Center for Public Service. The State Data Center’s population projections for the County are more conservative, projecting that the County reaches 36,000 in the year 2010. To obtain a more accurate picture of growth, TischlerBise recommends using the Weldon Cooper Center’s 2005 estimate and projecting future housing and population increases to keep pace with recent housing construction trends in the County.

To identify housing construction trends, TischlerBise reviewed the County’s building permit data for residential construction over the past 5 years. During the 2001-2005 period, the County added an average of 244 housing units per year. This is shown in Figure A2.

**Figure A2: Prince George County Residential Building Permits, 2001-2005**

	2001	2002	2003	2004	2005
Single Family Detached	202	244	173	245	223
All Other Housing Types	39	34	32	28	0
<b>Total</b>	<b>241</b>	<b>278</b>	<b>205</b>	<b>273</b>	<b>223</b>

	5 year average (2001-2005)					
Annual Building Permits	241	278	205	273	223	244

The County projects that this level of growth will continue into the future. By 2020, TischlerBise projects that the County will grow to 15,860 housing units. To project population through 2020, TischlerBise multiplied projected housing units by the current weighted average persons per housing unit of 2.61, resulting in 46,465 persons by 2020. The projection assumes that the group quarters population reported in the 2000 Census of 5,016 will remain constant. Figure A3 shows projections for housing units and population through 2020.

**Figure A3: Housing Unit and Population Projections to 2020**

	Annual estimated increase in housing units	Five year increments						
		2006	2007	2008	2009	2010	2015	2020
<b>TOTAL HOUSING UNITS</b>	244	12,444	12,688	12,932	13,176	13,420	14,640	15,860
<b>% annual change</b>		2.0%	2.0%	1.9%	1.9%	1.9%	1.7%	1.6%

	Average persons per housing unit	Five year increments						
		2006	2007	2008	2009	2010	2015	2020
<b>POPULATION</b>	2.61	37,538	38,175	38,813	39,451	40,088	43,277	46,465
Population -- 244 new housing units/year		1.7%	1.7%	1.7%	1.6%	1.6%	1.5%	1.4%

Using the 2000 Census housing unit mix (72% of all units were single-family detached and all other housing types accounted for 28% of total housing units), TischlerBise projected the total number of housing units and types in the County through 2020. This is shown in Figure A4.

**Figure A4: Housing Type Projections**

HOUSING UNIT TYPES	Housing Mix	2006	2007	2008	2009	Five year increments		
						2010	2015	2020
Single Family Detached	72%	8,927	9,102	9,277	9,452	9,627	10,502	11,377
All Other Housing	28%	3,518	3,587	3,656	3,725	3,794	4,138	4,483
<b>TOTAL</b>		<b>12,444</b>	<b>12,688</b>	<b>12,932</b>	<b>13,176</b>	<b>13,420</b>	<b>14,640</b>	<b>15,860</b>
% annual change		2.0%	2.0%	1.9%	1.9%	1.9%	1.7%	1.6%

**STUDENT GENERATION RATES**

Student generation rates by type of housing unit will be used for the County school cash proffer. The term “student generation rate” refers to the number of public school students per housing unit in Prince George County. Public school students are a subset of school-aged children, which includes students in private schools and home-schooled children.

Based on discussions with County staff, it was decided that TischlerBise would calculate student generating rates using 2000 U.S. Census data calibrated to current enrollment and housing unit figures. This was done to reflect the impact on school facilities for all ages of occupied housing units. This method was selected in order to ensure the cash proffer amount reflects the impact a housing unit has over the long term.

To estimate local student generation rates, TischlerBise obtained 2000 Census 5-Percent Public Use Microdata Sample (PUMS) files from the U.S. Census. TischlerBise then estimated student generation rates using these data files. The student generation rates have been adjusted for local conditions using actual enrollment totals from fall 2005 provided by Prince George County Public Schools.

Figure A5 provides student generation rates by type of residential unit. The top of the figure shows the student generation rate for the County in the year 2000 (from the U.S. Census). The bottom of Figure A5 provides the adjusted rates for Prince George County based on enrollments for the 2005-06 school year. To adjust rates to local conditions for the current year, TischlerBise estimates enrollments based on the Census-derived student generation rates and current housing units in the County and compares to enrollments from 2005-06. For example, the elementary student generation rate of .174 for a single family detached unit, as shown in the top portion of Figure A5, is multiplied by current housing units to derive estimated enrollments. This is: 8,752 SFD units x .174 to yield 1,524 estimated elementary students from single-family detached units. This is repeated for all other housing types to arrive at an estimated total of 2,268 elementary students. (Results are shown in the “Estimated Students” column in the figure).

The results are then compared to the actual elementary enrollment in Prince George County for 2005-06. Therefore, an adjustment of the 2000 Census rate is necessary to account for the higher actual number of students. The adjusted rate is 15% percent higher than the Census 2000 rate. An example of the adjusted multiplier calculation is as follows: single family detached 2005-06 enrollment, 2,626 is divided by Census estimated population of 2,268 and then multiplied by the student generation rate of .174, resulting in an adjusted student generation rate of .202  $((2,626/2,268) \times .174 = .202)$ . This is repeated for all other housing types and for all remaining school levels.

As shown in the figure, the student generation rate for *all grade levels* in Prince George County for a single family detached unit is estimated at .513 public school student per unit and .454 for all other housing types.

**Figure A5: Census Calibrated Student Generation Rates**

<b>Prince George County Public School Students Per Housing Unit, 2000 (Census)</b>				
	<i>Elementary K-5th Grades</i>	<i>Middle/Junior 6-9 Grades</i>	<i>High 10-12 Grades</i>	<i>All Grades</i>
Single Family Detached	0.174	0.141	0.111	0.427
All Other Housing Types	0.216	0.105	0.059	0.380

*Source: cross-tabulation by TischlerBise using Census Bureau, Year 2000 5% Public Use Microdata Sample for Prince George Public Use Microdata Area (PUMA) VA 02300.*

<b>Prince George County Public School Students Per Housing Unit, 2005-2006 (Calibrated to Local Conditions)</b>				
<i>Elementary School (Grades K-5) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	1,524		0.202
All Other Housing Types	3,449	744		0.250
<b>TOTAL</b>	<b>12,200</b>	<b>2,268</b>	<b>2,626</b>	
<i>Middle/Junior High School (Grades 6-9) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	1,236		0.184
All Other Housing Types	3,449	361		0.136
<b>TOTAL</b>	<b>12,200</b>	<b>1,596</b>	<b>2,075</b>	
<i>High School (Grades 10-12) Students per Housing Unit in 2005-2006</i>				
	<i>Housing Units*</i>	<i>Estimated Students</i>	<i>Actual FTE Students SY05-06**</i>	<i>Adjusted Rates</i>
Single Family Detached	8,752	975		0.128
All Other Housing Types	3,449	204		0.068
<b>TOTAL</b>	<b>12,200</b>	<b>1,179</b>	<b>1,351</b>	

<b>Prince George County Public School Students Per Housing Unit, 2005-06 (Adjusted)</b>				
	<i>Elementary K-5th Grades</i>	<i>Middle/Junior 6-9 Grades</i>	<i>High 10-12 Grades</i>	<i>All Grades</i>
Single Family Detached	0.202	0.184	0.128	0.513
All Other Housing Types	0.250	0.136	0.068	0.454

\*See Appendix A for description of current housing unit estimates.  
 \*\*Official enrollments as of Fall 2005 per Prince George County Public Schools.

*Source: cross-tabulation by TischlerBise using Census Bureau, Year 2000 5% Public Use Microdata Sample for Prince George Public Use Microdata Area (PUMA) VA 02300 and calibrated to Prince George County School enrollment.*



## STUDENT ENROLLMENT PROJECTIONS

To project student enrollment through 2020, TischlerBise multiplied the projected housing units shown in Figure A4 by the student generation rates for *all grades* shown at the bottom of Figure A5. Figure A6 shows student enrollment projections by housing type through 2020.

**Figure A6: Student Enrollment Projections to 2020**

SCHOOL ENROLLMENT	Student Generation Rates	Five year increments						
		2006	2007	2008	2009	2010	2015	2020
Single Family Detached	0.51	4,577	4,667	4,757	4,847	4,936	5,385	5,834
All Other Housing	0.45	1,596	1,627	1,658	1,689	1,721	1,877	2,034
<b>TOTAL</b>		<b>6,173</b>	<b>6,294</b>	<b>6,415</b>	<b>6,536</b>	<b>6,657</b>	<b>7,262</b>	<b>7,868</b>
% annual change		2.0%	2.0%	1.9%	1.9%	1.9%	1.7%	1.6%

## GROWTH AT FORT LEE

An unknown factor in projecting the County’s residential growth is the impact of future changes at the Army’s Fort Lee, which is located in the County. As of the 2000 Census, the Fort had a household population of 4,578 and group quarters population of 2,691. The Fort, which serves primarily as a training center for the Army, will take on additional training schools as part of the Base Realignment and Closure (BRAC) process. In addition, the Army’s Defense Commissary Agency, currently headquartered at Fort Lee, is expected to move its operations from Texas and other locations in Virginia to the Fort. According to the BRAC final report, these additions are expected to bring an additional 6,139 military, 1,149 civilian and 56 contractor jobs to the Fort.<sup>1</sup>

The County expects many of the new personnel will move to the County, impacting future population, housing and school enrollment projections. At this time, there are many uncertainties related to the BRAC increases at the Fort. The BRAC final report gives the Fort until September 2011 to implement BRAC changes in full, but the Defense Department has not yet released a timetable as to when these changes will begin. In addition, the County does not yet have demographic information on the personnel coming to the Fort. Information the County would need includes whether new personnel will be bringing families (as the children would presumably enroll in County schools) and/or whether new personnel are anticipated to be stationed at Fort Lee on a short-term or long-term basis (impacting population and housing projections). Lastly, an analysis of where personnel are expected to live – on-base, in the County or in nearby communities – will be an important consideration in developing County projections. Due to these unknown factors, the BRAC related impacts are not incorporated in the above housing, population and school enrollment projections. The County is advised to revisit these projections as more information becomes available from the Army and Fort Lee.

<sup>1</sup> Defense Base Closure and Realignment Commission (2005). *Defense Base Closure and Realignment Commission Report*. Arlington, VA: Defense Base Closure and Realignment Commission.



## **NONRESIDENTIAL DEMAND**

In addition to data on residential development, the calculation of cash proffers requires data on nonresidential construction in Prince George County. To convert employment projections to gross floor area of nonresidential development, average square feet per employee multipliers are used. The multipliers shown in Figure A7 are derived from national data published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI).

These multipliers are also used to calculate the number of average weekday vehicle trips from nonresidential development in Prince George County. The multipliers used in the Prince George County study reflect existing development in the County, anticipating that future development will be of similar scale, and are highlighted in grey.

**Figure A7: Floor Area Per Employee and Nonresidential Trip Rates**

<i>ITE Code</i>	<i>Land Use / Size</i>	<i>Demand Unit</i>	<i>Wkdy Trip Ends Per Dmd Unit*</i>	<i>Wkdy Trip Ends Per Employee*</i>	<i>Emp Per Dmd Unit**</i>	<i>Sq Ft Per Emp</i>
<b><i>Commercial / Shopping Center</i></b>						
820	10K gross leasable area	1,000 Sq Ft	152.03	na	3.33	300
821	25K gross leasable area	1,000 Sq Ft	110.32	na	3.33	300
820	50K gross leasable area	1,000 Sq Ft	86.56	na	2.86	350
820	100K gross leasable area	1,000 Sq Ft	67.91	na	2.50	400
820	200K gross leasable area	1,000 Sq Ft	53.28	na	2.22	450
820	400K gross leasable area	1,000 Sq Ft	41.80	na	2.00	500
<b><i>General Office</i></b>						
710	10K gross floor area	1,000 Sq Ft	22.66	5.06	4.48	223
710	25K gross floor area	1,000 Sq Ft	18.35	4.43	4.15	241
710	50K gross floor area	1,000 Sq Ft	15.65	4.00	3.91	256
710	100K gross floor area	1,000 Sq Ft	13.34	3.61	3.69	271
710	200K gross floor area	1,000 Sq Ft	11.37	3.26	3.49	287
<b><i>Industrial</i></b>						
770	Business Park***	1,000 Sq Ft	12.76	4.04	3.16	317
151	Mini-Warehouse	1,000 Sq Ft	2.50	56.28	0.04	22,512
150	Warehousing	1,000 Sq Ft	4.96	3.89	1.28	784
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
<b><i>Other Nonresidential</i></b>						
720	Medical-Dental Office	1,000 Sq Ft	36.13	8.91	4.05	247
620	Nursing Home	bed	2.37	6.55	0.36	na
610	Hospital	1,000 Sq Ft	17.57	5.20	3.38	296
565	Day Care	student	4.48	28.13	0.16	na
530	High School	student	1.71	19.74	0.09	na
520	Elementary School	student	1.29	15.71	0.08	na
520	Elementary School	1,000 Sq Ft	14.49	15.71	0.92	1,084
320	Lodging	room	5.63	12.81	0.44	na

\* Trip Generation, Institute of Transportation Engineers, 2003.

\*\* Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

\*\*\* According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

## JOB & NONRESIDENTIAL SQUARE FOOTAGE ESTIMATES

TischlerBise obtained employment data for jobs located in the County in 2004 from the U.S. Bureau of Labor Statistic's Quarterly Census of Employment and Wages. These estimates indicate that 11,293 persons were employed in the County in 2004. For purposes of the cash proffer study, TischlerBise further allocated these jobs to categories of commercial/retail, office, public sector, goods production and other. Using the employment density multipliers in the far right column of Figure A7, the number of jobs for each category was converted into nonresidential square footage. As shown in Figure A8, TischlerBise estimates there was 3,432,000 square feet of nonresidential development in Prince George County in 2004.

**Figure A8: Job and Nonresidential Square Footage Estimates**

	2004 Jobs*	Pct at Nonres Locations	Square Feet Per Employee**	2004 Nonres Floor Area (rounded)
<b>Commercial/Retail</b>				
Retail Trade	1,516			
Arts, Entertainment, and Recreation	203			
Accommodation and Food Services	810			
Subtotal	2,529	22%	300	759,000
<b>Office</b>				
Information	58			
Finance and Insurance	75			
Real Estate and Rental and Leasing	67			
Professional and Technical Services	294			
Administrative and Waste Services	1,184			
Other Services, Ex. Public Admin	180			
Subtotal	1,858	16%	241	448,000
<b>Public Sector</b>				
Educational Services	1,158			
Health Care and Social Assistance	322			
Public Administration	2,444			
Subtotal	3,924	35%	241	946,000
<b>Goods Production</b>				
Agriculture, Forestry, Fishing & Hunting	14			
Construction	562			
Manufacturing	834			
Wholesale Trade	480			
Transportation and Warehousing	1,028			
Subtotal	2,918	26%	433	1,264,000
<b>Other</b>				
Undisclosed	64			
Subtotal	64	1%	241	15,000
<b>TOTAL at Nonresidential Locations</b>				
	11,293	100%		3,432,000

Source: U.S. Census of Employment and Wages, 2004.

\*\* ITE, Trip Generation Manual.

## JOB & NONRESIDENTIAL SQUARE FOOTAGE PROJECTIONS

Figure A9 lists the projected number and type of jobs in Prince George County as well as projected nonresidential square footage over the next fifteen years.

To project the future number of jobs in the County, TischlerBise assumed the 2004 ratio of nonresidential development to residential development would remain constant and the number of jobs would increase proportionally. The County's 2004 job to population ratio is .31 (11,293 jobs/36,500 persons). This ratio is used to project the future number of jobs in the County based on the population projections from Figure A3.

Using the employment density multipliers from Figure A7, the projected number and type of future jobs are converted into nonresidential square footage projections.

**Figure A9: Job and Nonresidential Square Footage Projections**

	Year =>	2004	2005	2006	2007	2008	2009	Five-Year Increments		
								2010	2015	2020
<b>Jobs</b>										
Population		36,500	36,900	37,538	38,175	38,813	39,451	40,088	43,277	46,465
Jobs		11,293	11,417	11,614	11,811	12,009	12,206	12,403	13,390	14,376
% annual change			1.1%	1.7%	1.7%	1.7%	1.6%	1.6%	1.5%	1.4%
Jobs: Population Ratio		0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
<b>Employment</b>										
TOTAL Jobs in City	<i>Job mix</i>	11,293	11,417	11,614	11,811	12,009	12,206	12,403	13,390	14,376
Commercial/Retail	22%	2,529	2,557	2,601	2,645	2,689	2,733	2,778	2,999	3,219
Office	16%	1,858	1,878	1,911	1,943	1,976	2,008	2,041	2,203	2,365
Public Sector	35%	3,924	3,967	4,036	4,104	4,173	4,241	4,310	4,653	4,995
Goods Production	26%	2,918	2,950	3,001	3,052	3,103	3,154	3,205	3,460	3,715
Other	1%	64	65	66	67	68	69	70	76	81
<b>Nonresidential Floor Area (1,000 SF)</b>										
	<i>SF/Employee</i>									
Commercial/Retail	300	759	767	780	794	807	820	833	900	966
Office	241	448	453	460	468	476	484	492	531	570
Public Sector	241	946	956	972	989	1,005	1,022	1,038	1,121	1,204
Goods Production	433	1,264	1,278	1,300	1,322	1,344	1,367	1,389	1,499	1,610
Other	241	15	16	16	16	16	17	17	18	20
TOTAL Floor Area		3,432	3,469	3,529	3,589	3,649	3,709	3,769	4,069	4,369

## AVERAGE DAILY VEHICLE TRIP ESTIMATES

Figure A10 below provide a summary of the residential and nonresidential vehicle trip calculations used in this analysis.

Average Weekday Vehicle Trip Ends are from the reference book, Trip Generation, published by the Institute of Transportation Engineers (ITE), in 2003. A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip rates have been adjusted to avoid overestimating the number of actual trips because one vehicle trip is counted in the trip rates of both the origination and destination points. A simple factor of 50% has been applied to the residential, office, public sector, goods production and other categories. The commercial category has a trip factor of less than 50% because this type of development attracts vehicles as they pass-by on arterial

and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. The ITE Manual indicates that on average 52% of the vehicles entering shopping centers under 25,000 square feet are passing by on the way to some other primary destination and 48% of the attraction trips have the shopping center as their primary destination. Therefore, the adjusted trip factor is 24% ( $0.48 \times 0.50$ ).

There is an average of 96,459 vehicle trips generated by existing development in Prince George County on an average weekday. As the table below indicates, residential development generates 54,533 vehicle trips and nonresidential development generates 41,926 vehicle trips on an average weekday.

**Figure A10: Average Daily Trips**

**Residential Vehicle Trips on an Average Weekday (2006)**

Residential Units	Assumptions	
Single Family Detached	8,927	
All Other Housing	3,518	
Average Weekday Vehicle Trip Ends per Unit*	Trip Rate	Trip Factor
Single Family Detached	9.57	50%
All Other Housing	6.72	50%
Residential Vehicle Trip Ends of an Average Weekday		
Single Family Detached	42,714	
All Other Housing	11,820	
<b>Total Residential Trips</b>	<b>54,533</b>	

**Nonresidential Vehicle Trips on an Average Weekday**

Nonresidential Gross Floor Area (1,000 sq. ft.)**	Assumptions	
Retail/Commercial	780	
Office	460	
Public Sector	972	
Goods Production	1,300	
Other	16	
Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.*	Trip Rate	Trip Factor
Retail/Commercial	110.32	28%
Office	18.35	50%
Public Sector	18.35	50%
Goods Production	6.97	50%
Other	18.35	50%
Nonresidential Vehicle Trips on an Average Weekday		
Retail/Commercial	24,102	
Office	4,225	
Public Sector	8,922	
Goods Production	4,531	
Other	146	
<b>Total Nonresidential Trips</b>	<b>41,926</b>	
<b>TOTAL TRIPS</b>	<b>96,459</b>	

\*Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2003)

\*\*Floor area estimates were derived using sq. ft. per employee factors from ULI and ITE

**SUMMARY OF DEVELOPMENT PROJECTIONS 2006-2020**

Annual demographic and development projections for the cash proffer study are summarized in Figure A11 below. Prince George County is projected to add approximately 228 housing units and 595 persons per year over the next fifteen years. The County's schools are projected to add 112 students per year. From 2006 to 2020, TischlerBise projects an average annual increase in employment of 184 jobs and approximately 56,000 square feet of nonresidential floor area. However, actual nonresidential construction is often built in

irregular intervals compared to residential development, with minor construction followed by large-scale projects.

**Figure A11: Development Projections 2006-2020**

	2006	2007	2008	2009	Five-Year Increments			Total Increase	Annual Increase
					2010	2015	2020		
Population	37,538	38,175	38,813	39,451	40,088	43,277	46,465	8,927	595
Housing Units	12,444	12,688	12,932	13,176	13,420	14,640	15,860	3,416	228
Students	6,173	6,294	6,415	6,536	6,657	7,262	7,868	1,695	113
Jobs	11,614	11,811	12,009	12,206	12,403	13,390	14,376	2,762	184
Nonresidential Sq. Ft. (1,000's)	3,529	3,589	3,649	3,709	3,769	4,069	4,369	839	56
Ave Wkdy Vehicle Trips	96,459	98,241	100,022	101,803	103,585	112,492	121,399	24,940	1,663
Ave Wkdy Nonres Vehicle Trips	41,926	42,638	43,350	44,062	44,774	48,335	51,897	9,971	665
<b>Housing Units</b>									
Single Family Detached	8,927	9,102	9,277	9,452	9,627	10,502	11,377	2,450	163
All Other Housing	3,518	3,587	3,656	3,725	3,794	4,138	4,483	966	64
<b>Students</b>									
Single Family Detached	4,577	4,667	4,757	4,847	4,936	5,385	5,834	1,257	84
All Other Housing	1,596	1,627	1,658	1,689	1,721	1,877	2,034	438	29
<b>Jobs</b>									
Retail/Commercial	2,601	2,645	2,689	2,733	2,778	2,999	3,219	619	41
Office	1,911	1,943	1,976	2,008	2,041	2,203	2,365	454	30
Public Sector	4,036	4,104	4,173	4,241	4,310	4,653	4,995	960	64
Goods Production	3,001	3,052	3,103	3,154	3,205	3,460	3,715	714	48
Other	66	67	68	69	70	76	81	16	1
<b>Nonresidential SF (1,000's)</b>									
Retail/Commercial	780	794	807	820	833	900	966	186	12
Office	460	468	476	484	492	531	570	110	7
Public Sector	972	989	1,005	1,022	1,038	1,121	1,204	231	15
Goods Production	1,300	1,322	1,344	1,367	1,389	1,499	1,610	309	21
Other	16	16	16	17	17	18	20	4	0.25
<b>Ave Wkdy Vehicle Trips</b>									
Single Family Detached	42,714	43,551	44,389	45,226	46,064	50,251	54,439	11,725	782
All Other Housing	11,820	12,051	12,283	12,515	12,747	13,905	15,064	3,245	216
Retail/Commercial	24,102	24,512	24,921	25,330	25,740	27,787	29,834	5,732	382
Office	4,225	4,296	4,368	4,440	4,512	4,870	5,229	1,005	67
Public Sector	8,922	9,074	9,225	9,377	9,528	10,286	11,044	2,122	141
Goods Production	4,531	4,608	4,685	4,762	4,839	5,224	5,609	1,078	72
Other	146	148	150	153	155	168	180	35	2
<b>TOTAL</b>	<b>96,459</b>	<b>98,241</b>	<b>100,022</b>	<b>101,803</b>	<b>103,585</b>	<b>112,492</b>	<b>121,399</b>	<b>24,940</b>	<b>1,663</b>