DRAFT

Impact Fee Study

Prepared for:

Jefferson County, West Virginia

December 4, 2024

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EXECUTIVE SUMMARY

Jefferson County, West Virginia, contracted with TischlerBise to update the County's impact fees using current level-of-service standards. Impact fees are one-time payments used to construct system improvements needed to accommodate future development. The fee represents future development's proportionate share of infrastructure costs. Impact fees may be used for infrastructure improvements or debt service for growth-related infrastructure. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement, or correcting existing deficiencies. This update of Jefferson County's impact fees includes the following capital facilities:

1. County Administration
2. EMS
3. Law Enforcement
4. Parks and Recreation
5. Schools

GENERAL LEGAL FRAMEWORK

Both state and federal courts have recognized the imposition of impact fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety, and welfare by ensuring that development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive community input, with stakeholder meetings, work sessions, and public hearings provide opportunity for comments and refinements to the impact fees.

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

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

Supreme Court in the *Dolan* case. Individual elements of the nexus standard are discussed further in the following paragraphs.

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

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

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

CONCEPTUAL IMPACT FEE CALCULATION

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the impact fee formula is to determine infrastructure units per service unit, typically called level-of-service (LOS) standards. In keeping with the park example, a common LOS standard is improved park acres per thousand people. The third step in the impact fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish a cost per acre for land acquisition and/ or park improvements.

METHODOLOGY

Impact fees for the capital facilities made necessary by future development must be based on the same level of service (LOS) provided to existing development in the service area. There are three basic methodologies used to calculate impact fees. They examine the past, present, and future status of infrastructure. Each methodology has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components. Reduced to its simplest terms, the process of calculating impact fees involves two main steps: (1) determining the cost of growth-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss basic methodologies for calculating impact fees and how those methodologies can be applied.

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- **Incremental Expansion** (concurrent improvements) - The incremental expansion methodology documents current LOS standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based methodology allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

EVALUATION OF CREDITS

There are two types of credits that should be addressed in impact fee studies and ordinances. The first type of credit is a revenue credit due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the impact fee. This type of credit is integrated into the fee calculation, thus reducing the fee amount.

The second type of credit is a site-specific credit, or developer reimbursement, for dedication of land or construction of system improvements. This type of credit is addressed in the administration and implementation of the impact fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

IMPACT FEE SUMMARY

IMPACT FEE COMPONENTS

Shown below, Figure 1 summarizes service areas, methodologies, and capital facilities for each infrastructure category.

Figure 1: Proposed Impact Fee Service Areas, Methodologies, and Capital Facilities

Infrastructure Category	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
County Administration	Jefferson County	N/A	Administrative Space	Impact Fee Report	Population, Jobs
EMS	Jefferson County	N/A	EMS Vehicles and Equipment	EMS Facilities, Impact Fee Report	Population, Nonresidential Vehicle Trips
Law Enforcement	Unincorporated Jefferson County	N/A	Sheriff Facilities and Vehicles	Impact Fee Report	Population, Nonresidential Vehicle Trips
Parks and Recreation	Jefferson County	N/A	Park Land, Park Improvements, Park Facilities, Park Vehicles and Equipment	Impact Fee Report	Population
School	Jefferson County	N/A	High School Facilities, Land	Impact Fee Report	Students

PROPOSED IMPACT FEES

Proposed impact fees for residential development will be assessed per dwelling unit, based on the type of unit. Nonresidential impact fees will be assessed per 1,000 square feet of floor area, based on the type of development (per room for hotels and per bed for nursing homes). Proposed impact fees are shown below in Figure 2.

Fees shown below represent the maximum allowable fees. Jefferson County may adopt fees that are less than the amounts shown; however, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements and/or a decrease in Jefferson County's level-of-service standards. All costs are in current dollars with no assumed inflation rate over time. If cost estimates change significantly over time, impact fees should be recalibrated.

Figure 2: Proposed Impact Fees

Residential Fees per Unit						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	**Total**
Single Family	$951	$509	$394	$1,179	$6,772	**$9,805**
Multi-Family	$671	$359	$278	$832	$1,198	**$3,338**

Nonresidential Fees per 1,000 Square Feet						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	Total
Light Industrial	$384	$119	$119	$0	$0	**$622**
Business Park	$754	$304	$303	$0	$0	**$1,360**
Manufacturing	$463	$116	$116	$0	$0	**$695**
Warehousing	$83	$42	$42	$0	$0	**$166**
Commercial/Shopping Center	$520	$596	$595	$0	$0	**$1,711**
Office/Institutional	$797	$265	$264	$0	$0	**$1,325**
Hotel (per room)	$136	$82	$82	$0	$0	**$300**
Nursing Home (per bed)	$499	$75	$74	$0	$0	**$648**

CURRENT IMPACT FEES

Current impact fees for residential development are assessed per dwelling unit, based on the type of unit. Nonresidential impact fees are assessed per 1,000 square feet of floor area, based on the type of development. The current fee schedule does not contain fee categories for hotel and nursing home land use categories. Current impact fees shown below in Figure 3 represent the current County fee schedule.

Figure 3: Current Impact Fees

Residential Fees per Unit						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	Total
Single Family Detached	$57	$119	$636	$1,131	$1	$1,944
Multi-Family	$40	$86	$455	$810	$1	$1,392

Nonresidential Fees per 1,000 Square Feet						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	Total
Light Industrial	$0	$0	$0	$0	$0	$0
Business Park	$0	$0	$0	$0	$0	$0
Manufacturing	$0	$0	$0	$0	$0	$0
Warehousing	$0	$0	$0	$0	$0	$0
Commercial/Shopping Center	$0	$0	$0	$0	$0	$0
Office/Institutional	$0	$0	$0	$0	$0	$0

DIFFERENCE BETWEEN PROPOSED AND CURRENT IMPACT FEES

The differences between proposed and current impact fees are displayed in Figure 4.

Figure 4: Difference Between Proposed and Current Impact Fees

Residential Fees per Unit						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	**Total**
Single Family	$894	$390	($242)	$48	$6,771	**$7,861**
Multi-Family	$631	$273	($177)	$22	$1,197	**$1,946**

Nonresidential Fees per 1,000 Square Feet						
Development Type	County Admin	EMS	Law Enforcement	Parks and Recreation	School	**Total**
Industrial	$384	$119	$119	$0	$0	**$622**
Business Park	$754	$304	$303	$0	$0	**$1,360**
Manufacturing	$463	$116	$116	$0	$0	**$695**
Warehousing	$83	$42	$42	$0	$0	**$166**
Commercial	$520	$596	$595	$0	$0	**$1,711**
Office & Institutional	$797	$265	$264	$0	$0	**$1,325**
Hotel (per room)	$136	$82	$82	$0	$0	**$300**
Nursing Home (per bed)	$499	$75	$74	$0	$0	**$648**

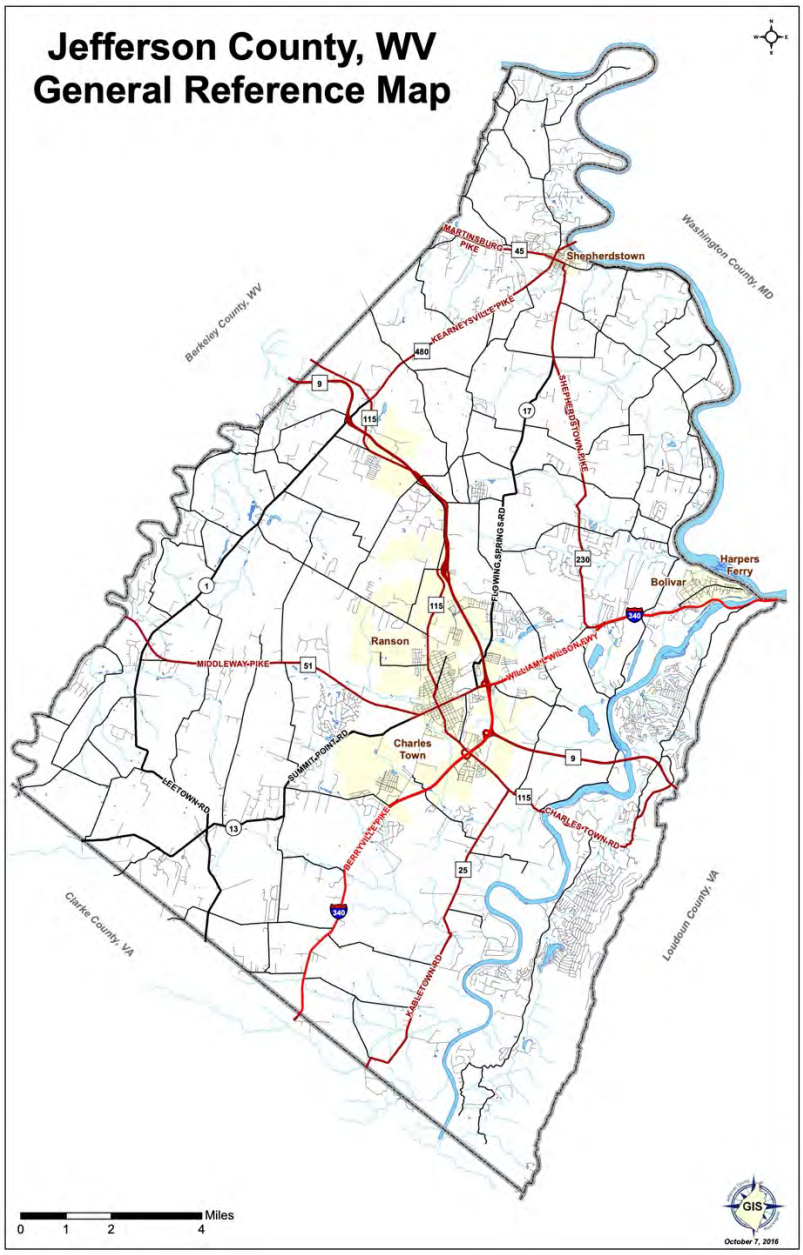
COUNTY ADMINISTRATION IMPACT FEES

METHODOLOGY

The County Administration impact fees include components for future County Administration building space and the cost of preparing the Impact Fee Study. The incremental expansion methodology is used for the building space component. The plan-based methodology is used for the Impact Fee Study.

SERVICE AREA

Jefferson County government provides administrative services throughout Jefferson County; therefore, there is a single service area for the County Administration impact fees.



PROPORTIONATE SHARE

Impact fees should not exceed a proportionate share of the capital cost needed to provide capital facilities to the development. The County Administration impact fees allocate the cost of capital facilities between residential and nonresidential development using functional population. Based on 2021 estimates (the latest data available at the time of this study) from the U.S. Census Bureau's OnTheMap web application, residential development accounts for approximately 78 percent of functional population and nonresidential development is responsible for the remaining 22 percent.

Figure CA1: Proportionate Share

Demand Units in 2021					
Residential				Demand Hours/Day	Person Hours
Population	58,473				
Residents Not Working		32,571		20	651,425
Employed Residents		25,902			
Employed in Jefferson County, WV			6,814	14	95,396
Employed outside Jefferson County, WV			19,088	14	267,232
				Residential Subtotal	1,014,053
				Residential Share	**78%**
Nonresidential					
Non-working Residents		32,571		4	130,285
Jobs Located in Jefferson County, WV		16,053			
Residents Employed in Jefferson County, WV			6,814	10	68,140
Non-Resident Workers (inflow commuters)			9,239	10	92,390
				Nonresidential Subtotal	290,815
				Nonresidential Share	**22%**
				Total	1,304,869

Source: TischlerBise calculation (population); U.S. Census Bureau, OnTheMap 6.23.5 Application and LEHD Origin-Destination Employment Statistics (employment).

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit, based on housing unit size. TischlerBise recommends using jobs as the best demand indicator for County Administration facilities. Employment density rates are highest for office/institutional development and lowest for industrial/warehouse development. Commercial development, such as a shopping center, falls between the other two categories. This ranking of employment density is consistent with the relative demand for County Administration services from nonresidential development.

IMPACT FEE COMPONENTS

County Administrative Space

Jefferson County's general government/administrative functions are currently housed in several facilities totaling 145,267square feet. The County intends to purchase an existing 91,600 square foot building and renovate/remodel to accommodate future growth in the County's administrative functions. The cost of this purchase and remodel totals $19.1 million, or $209 per square foot ($19,100,100 divided by 91,600 square feet). An incremental expansion approach is used to capture the growth-related portion of this purchase/renovation. This will ensure new development doesn't pay more than its proportionate share.

The existing level of service for residential development is 1.8356 square feet per person (145,267 square feet X 78 percent residential share / 61,728 persons). The existing nonresidential level of service is 1.1706 square feet per job (145,267 square feet X 22 percent nonresidential share / 27,302 jobs). The cost per square foot for the new building is used to determine the cost per demand unit. This results in a cost person of $382.75 per person (1.8356 square feet per person X $209 per square foot) and $244.08 per job (1.1706 square feet per job X $209 per square foot).

Figure CA2: County Administration Level of Service and Cost Allocation

Description	Square Feet
Courthouse	17,850
Old Jail Annex	14,498
Reininger	7,755
Moffet	5,172
Mason	13,272
Hunter House	5,825
Gray Building	8,250
St. Margaret's Judicial Building	28,684
Maintenance	15,000
911 Communications	10,000
Public Service Center	18,961
Total	145,267

Cost Factors	
Cost per Square Foot[1]	$209

Level-of-Service (LOS) Standards	
Existing Square Feet	145,267
Residential	
Residential Share	78%
2024 Population	61,728
Square Feet per Person	1.8356
Cost per Person	**$382.75**
Nonresidential	
Nonresidential Share	22%
2024 Jobs	27,302
Square Feet per Job	1.1706
Cost per Job	**$244.08**

Source: Jefferson County

As discussed above, the County plans on purchasing and remodeling a 91,600 square foot building to house growth-related needs for Administrative space. Of the 91,600 square feet, 50,985 square feet is simply re-housing existing County employees/departments. Therefore, as shown below in Figure CA3, the growth-related portion of the 91,600 square foot building is 40,615 square feet. As will be illustrated in the next section (Figure CA4), the projected demand from new growth over the next ten years will not exceed the growth-related portion.

Figure CA3: County Administration Level of Service Analysis

Building	Square Feet
Purchase/Renovation of New Building	91,600
less Exisiting Space Being Replaced	
Public Service Center	18,961
Reininger	7,755
Moffet	5,172
Mason	13,272
Hunter House	5,825
Subtotal	50,985
Net Increase in Square Footage	**40,615**

Impact Fee Study – Plan-Based

The cost to prepare the County Administration impact fees equals $6,600, and Jefferson County plans to update its impact fees every five years. Based on this cost, proportionate share, and five-year projections of future residential and nonresidential development, the cost is $0.86 per person and $0.64 per job.

Figure CA4: Impact Fee Study

Infrastructure Category	Cost	Proportionate Share		Service Unit	2024	2029	5-Year Change	Cost per Service Unit
County Administration	$6,600	Residential	78%	Population	61,728	67,748	6,020	$0.86
		Nonresidential	22%	Jobs	27,302	29,572	2,270	$0.64

PROJECTED DEMAND

Administrative Space

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development accounts for 22,100 square feet of the new 91,600 square foot County Administration Building (12,040 additional persons X 1.8356 square feet per person). With the projected increase of 4,405 jobs over the next 10 years, future nonresidential development accounts for 5,157 square feet of the new 91,600 square foot County Administration Building (4,405 additional jobs X 1.1706 square per job). Total demand is approximately 27,257 square feet at a cost of approximately $5.6 million.

Figure CA5: Projected Demand for Administrative Facilities

Incremental

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
County Administration Facilities	1.8356 Square Feet	per Person	$209
	1.1706 Square Feet	per Job	

	Demand for County Administration Facilities					
	Year	Population	Jobs	Square Feet		
				Residential	Nonresidential	Total
Base	2024	61,728	27,302	113,308	31,959	145,267
Year 1	2025	62,932	27,821	115,518	32,566	148,084
Year 2	2026	64,136	28,259	117,728	33,078	150,807
Year 3	2027	65,340	28,697	119,938	33,591	153,529
Year 4	2028	66,544	29,134	122,148	34,103	156,252
Year 5	2029	67,748	29,572	124,358	34,616	158,974
Year 6	2030	68,952	30,010	126,568	35,128	161,697
Year 7	2031	70,156	30,434	128,778	35,625	164,403
Year 8	2032	71,360	30,859	130,988	36,122	167,110
Year 9	2033	72,564	31,283	133,198	36,619	169,817
Year 10	2034	73,768	31,708	135,408	37,116	172,524
	10-Yr Increase	12,040	4,405	22,100	5,157	27,257

Growth-Related Expenditures	**$4,608,156**	**$1,075,264**	**$5,683,420**

PROPOSED COUNTY ADMINISTRATION IMPACT FEES

Infrastructure components and cost factors for County Administration impact fees are summarized in the upper portion of FigureCA6. For County Administration impact fees, the capital cost is $383.61 per person and $244.72 per job.

County Administration impact fees for residential development are assessed according to the number of persons per housing unit. The single-family fee of $951 is calculated using a cost of $383.61 per person multiplied by a demand unit of 2.48 persons per housing unit.

Nonresidential impact fees are assessed according to the number of jobs per 1,000 square feet of floor area (per room for Hotel and per bed Nursing Home). The commercial/shopping center fee of $520 per 1,000 square feet of floor area is derived from a cost of $244.72 per job multiplied by a demand unit of 2.12 jobs per 1,000 square feet.

Figure CA6: Proposed County Administration Impact Fees

Fee Component	Cost per Person	Cost per Job
County Administration Space	$382.75	$244.08
Impact Fee Report	$0.86	$0.64
Total	**$383.61**	**$244.72**

Residential Fees per Unit				
Development Type	Persons per Housing Unit[1]	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.48	$951	$57	$894
Multi-Family	1.75	$671	$40	$631

Nonresidential Fees per 1,000 Square Feet				
Development Type	Jobs per 1,000 Square Feet[1]	Proposed Fees	Current Fees	Increase / Decrease
Light Industrial	1.57	$384	$0	$384
Business Park	3.08	$754	$0	$754
Manufacturing	1.89	$463	$0	$463
Warehousing	0.34	$83	$0	$83
Commercial/Shopping Center	2.12	$520	$0	$520
Office/Institutional	3.26	$797	$0	$797
Hotel (per room)	0.56	$136	n/a	n/a
Nursing Home (per bed)	2.04	$499	n/a	n/a

1. See Land Use Assumptions

PROJECTED COUNTY ADMINISTRATION IMPACT FEE REVENUE

Projected fee revenue shown below is based on the development projections, shown in Appendix A, and the proposed County Administration impact fees shown in Figure CA. As Figure CA7 indicates, new development from 2024 to 2034, will contribute approximately $5.69 million towards the $19.1 million County Administrative space expansion.

Figure CA7: Projected County Administration Impact Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Administrative Facilities	$5,683,420	$13,416,580	$19,100,000
Impact Fee Report	$7,200	$0	$6,600
Total	$5,690,620	$13,416,580	$19,106,600

Year		Single Family $951 per unit	Multi-Family $671 per unit	Industrial $384 per 1,000 sq ft	Comm/Shop $520 per 1,000 sq ft	Office/Inst $797 per 1,000 sq ft
		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2024	21,162	3,552	2,679	3,495	4,813
Year 1	2025	21,597	3,624	2,730	3,561	4,905
Year 2	2026	22,032	3,696	2,773	3,617	4,982
Year 3	2027	22,466	3,767	2,816	3,673	5,059
Year 4	2028	22,901	3,839	2,859	3,729	5,136
Year 5	2029	23,336	3,911	2,902	3,785	5,214
Year 6	2030	23,771	3,983	2,945	3,841	5,291
Year 7	2031	24,206	4,055	2,986	3,896	5,366
Year 8	2032	24,640	4,126	3,028	3,950	5,440
Year 9	2033	25,075	4,198	3,069	4,004	5,515
Year 10	2034	25,510	4,270	3,111	4,059	5,590
10-Year Increase		4,348	718	432	564	777
Projected Revenue		$4,136,450	$482,002	$166,178	$293,181	$618,724

Projected Fee Revenue	$5,696,534
Total Expenditures	$19,106,600
Existing Development Share	$13,410,066

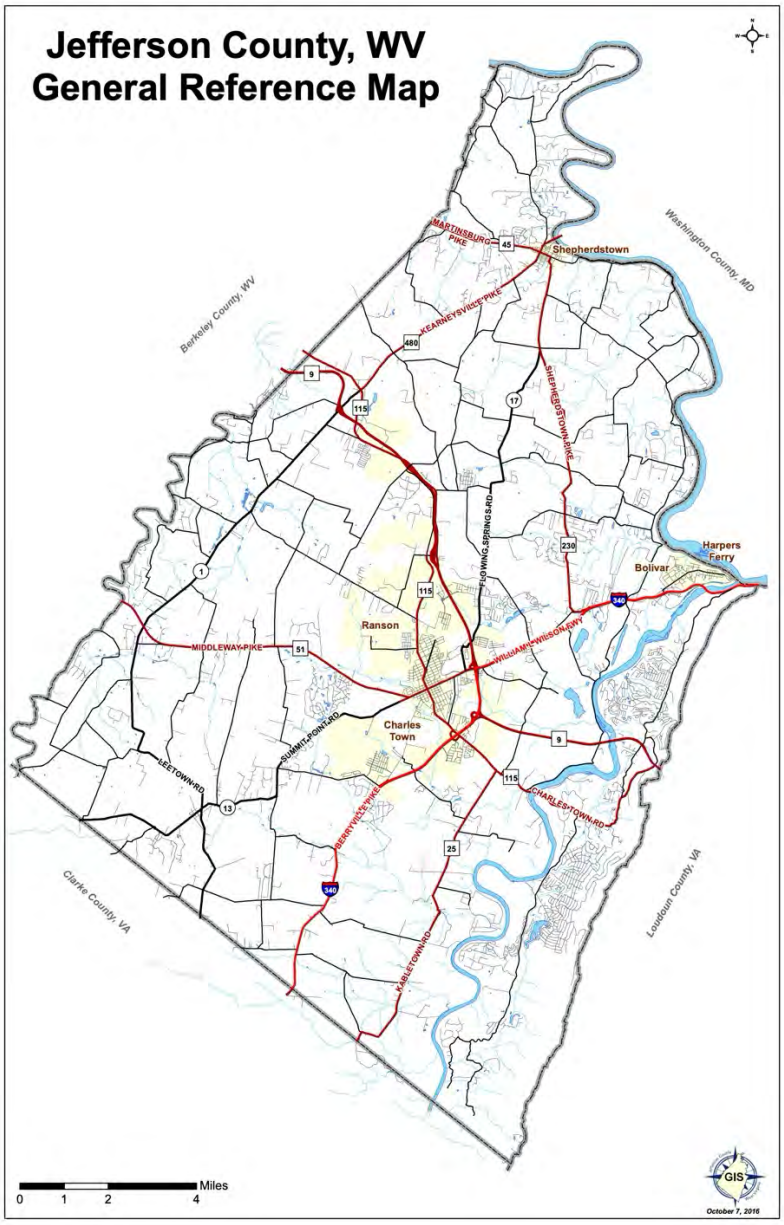
EMS IMPACT FEES

METHODOLOGY

The EMS impact fees include components for EMS facilities, EMS vehicles and equipment, and the cost of preparing the Impact Fee Study. The plan-based methodology is used for future stations, and the incremental expansion methodology is used for EMS vehicles and equipment. The plan-based methodology is used for the Impact Fee Study.

SERVICE AREA

Jefferson County provides EMS services throughout Jefferson County; therefore, there is a single service area for the EMS impact fees.



PROPORTIONATE SHARE

Impact fees should not exceed a proportionate share of the capital cost needed to provide capital facilities to the development. The EMS impact fees allocate the cost of capital facilities between residential and nonresidential development using functional population. Based on 2021 estimates (the latest data available at the time of this study) from the U.S. Census Bureau's OnTheMap web application, residential development accounts for approximately 78 percent of functional population and nonresidential development is responsible for the remaining 22 percent.

Figure E1: Proportionate Share

Demand Units in 2021					
Residential				Demand Hours/Day	Person Hours
Population	58,473				
Residents Not Working		32,571		20	651,425
Employed Residents		25,902			
Employed in Jefferson County, WV			6,814	14	95,396
Employed outside Jefferson County, WV			19,088	14	267,232
				Residential Subtotal	1,014,053
				Residential Share	**78%**
Nonresidential					
Non-working Residents		32,571		4	130,285
Jobs Located in Jefferson County, WV		16,053			
Residents Employed in Jefferson County, WV			6,814	10	68,140
Non-Resident Workers (inflow commuters)			9,239	10	92,390
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				Nonresidential Share	**22%**
				Total	1,304,869

Source: TischlerBise calculation (population); U.S. Census Bureau, OnTheMap 6.23.5 Application and LEHD Origin-Destination Employment Statistics (employment).

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit, based on housing unit size. Since nonresidential calls for service were unavailable by specific nonresidential use (i.e. retail, office, industrial, etc.), TischlerBise recommends using average weekday nonresidential vehicle trips as the best demand indicator for EMS facilities. Trip generation rates are highest for commercial development, such as a shopping center, and lowest for industrial/warehouse development. Office/institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for law enforcement protection from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for fire and emergency medical services. If employees per 1,000 square feet of building area were used as the demand indicator, EMS impact fees would be too high for office/institutional development.

IMPACT FEE COMPONENTS

EMS Facilities

The Emergency Service Agency currently occupies 7,148 square feet of building space. Jefferson County plans to construct a new 34,000 square foot Public Safety building, of which the Emergency Services Authority will occupy 14,000 square feet. This new Public Safety building is estimated to cost $10.2 million, with the Sheriff and Emergency Services Agency splitting the cost evenly.

A plan-based approach is used to calculate the EMS station impact fee with the level of service set to the projected residential and nonresidential demand base in 2034. This ensures existing and new development are treated equally, and new development does not pay for a higher level of service than what is currently provided. The planned level of service for residential development is 0.3066 square feet per person (29,000 square feet X 78 percent residential share / 73,768 County residents in 2034). The planned nonresidential level of service is 0.0730 square feet per vehicle trip (29,000 square feet X 22 percent nonresidential share / 87,443 vehicle trips in 2034). Using a construction cost of $383 per square foot (based on the planned Public Safety building costs of $11.1 million divided by 29,000 square feet), the weighted average facilities cost is $117.37 per person (0.3066 square feet per person X $383 per square foot) and $27.93 per vehicle trip (0.0730 square feet per vehicle trip X $383 per square foot).

Figure E2: EMS Station Level of Service and Cost Allocation

Cost	Square Feet	Cost/ SF	Cost
EMS Share of Public Safety Building	14,000	$364	$5,100,000
Blue Ridge Mountain Station	15,000	$400	$6,000,000
TOTAL	**29,000**	**$383**	**$11,100,000**

Cost Factors	
Cost per Square Foot	$383

Level-of-Service (LOS) Standards	
2034 Square Feet	29,000

Residential	
Residential Share	78%
2034 Population	73,768
Square Feet per Person	0.3066
Cost per Person	**$117.37**
Nonresidential	
Nonresidential Share	22%
2034 Nonresidential Trips	87,443
Square Feet per Trip	0.0730
Cost per Job	**$27.93**

Source: Jefferson County EMS Department

EMS Vehicles and Equipment

Jefferson County plans to expand its current inventory of EMS vehicles and equipment to serve future development. The current inventory includes 235 units with a total replacement value of $6,883,500, so this analysis uses the average cost of $29,291 per unit.

This analysis uses functional population to allocate the proportionate share of demand to residential and nonresidential development. The existing level of service for residential development is 0.0030 units per person (235 units X 78 percent residential share / 61,728 persons). The existing nonresidential level of service is 0.0007 units per nonresidential vehicle trip (235 units X 22 percent nonresidential share / 75,294 nonresidential vehicle trips). Using the average cost of $29,291 per unit, the EMS vehicles and equipment cost is $86.98 per person (0.0030 units per person X $29,291 per unit) and $20.11 per nonresidential vehicle trip (0.0007 units per trip X $29,291 per unit).

Figure E3: Level of Service and Cost Allocation

Description	Units	Unit Cost	Total Cost
Ambulances	10	$400,000	$4,000,000
Lifepak Cardiac Monitor	13	$60,000	$780,000
LUCAS CPR Device	12	$18,000	$216,000
Field Chase Vehicles	3	$85,000	$255,000
Staff Vehicles	3	$65,000	$195,000
Deceased Transport Van	1	$40,000	$40,000
CAD Tablets	20	$2,500	$50,000
Structural Fire Turnout PPE Ensemb	75	$4,500	$337,500
3 Body Mortuary Refrigerator	1	$10,000	$10,000
JCESA Owned Mobile Radios	28	$5,000	$140,000
JCESA Owned Portable Radios	37	$5,000	$185,000
Fire Engine for Training	1	$100,000	$100,000
Stair Chairs for Ambulances	10	$10,000	$100,000
Stretchers for Ambulances	11	$25,000	$275,000
Power Loads for Ambulances	10	$20,000	$200,000
Total	**235**	**$29,291**	**$6,883,500**

Cost Factors	
Average Cost per Unit	$29,291

Level-of-Service (LOS) Standards	
Existing Units	235
Residential	
Residential Share	78%
2024 Population	61,728
Units per Person	0.0030
Cost per Person	**$86.98**
Nonresidential	
Nonresidential Share	22%
2024 Nonresidential Vehicle Trips	75,294
Units per Job	0.0007
Cost per Job	**$20.11**

Source: Jefferson County EMS Department

Impact Fee Study

The cost to prepare the EMS impact fees equals $7,900, and Jefferson County plans to update its impact fees every five years. Based on this cost, proportionate share, and five-year projections of future residential and nonresidential development, the cost is $1.02 per person and $0.77 per nonresidential vehicle trip.

Figure E4: Impact Fee Study

Infrastructure Category	Cost	Proportionate Share		Service Unit	2024	2029	5-Year Change	Cost per Service Unit
EMS	$7,900	Residential	78%	Population	61,728	67,748	6,020	$1.02
		Nonresidential	22%	Vehicle Trips	27,302	29,572	2,270	$0.77

PROJECTED DEMAND

EMS Facilities

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development accounts for 3,692 square feet of the planned 29,000 square feet of EMS facility space (12,040 additional persons X 0.3066 square feet per person). With the projected increase of 12,149 nonresidential vehicle trips over the next 10 years, future nonresidential development accounts for 886 square feet of the planned 29,000 square feet of EMS space (12,149 additional nonresidential trips X 0.0730 square per trip). Total demand is approximately 4,578 square feet of the planned 29,000 square feet at a cost of approximately $1.75 million.

Figure E5: Projected Demand for EMS Facilities

Type of Infrastructure	Level of Service	Demand Unit	Total Cost
EMS Facilities	0.3066 Square Feet	per Person	$383
	0.0730 Square Feet	per Vehicle Trip	

	Demand for EMS Facilities					
	Year	Population	Vehicle Trips	Square Feet		
				Residential	Nonresidential	Total
Base	2024	61,728	75,294	18,928	5,494	24,422
Year 1	2025	62,932	76,725	19,297	5,598	24,895
Year 2	2026	64,136	77,932	19,667	5,686	25,353
Year 3	2027	65,340	79,139	20,036	5,774	25,810
Year 4	2028	66,544	80,347	20,405	5,862	26,267
Year 5	2029	67,748	81,554	20,774	5,950	26,724
Year 6	2030	68,952	82,761	21,143	6,038	27,182
Year 7	2031	70,156	83,932	21,512	6,124	27,636
Year 8	2032	71,360	85,102	21,882	6,209	28,091
Year 9	2033	72,564	86,273	22,251	6,295	28,545
Year 10	2034	73,768	87,443	22,620	6,380	29,000
	10-Yr Increase	12,040	12,149	3,692	886	4,578

Growth-Related Expenditures	**$1,413,065**	**$339,287**	**$1,752,352**

EMS Vehicles and Equipment

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development demands an additional 35.8 units (12,040 additional persons X 0.0030 units per person). With projected growth of 12,149 nonresidential vehicle trips over the next 10 years, future nonresidential development demands an additional 8.3 units (12,149 additional nonresidential trips X 0.0007 units per trip). Total demand is approximately 44 units of EMS vehicles and equipment at a cost of approximately $1.29 million.

Figure E6: Projected Demand for EMS Vehicles and Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
EMS Vehicles and Equipment	0.0030 Units	per Person	$29,291
	0.0007 Units	per Trip	

	Demand for EMS Vehicles and Equipment					
	Year	Population	Nonresidential Trips	Units		
				Residential	Nonresidential	Total
Base	2024	61,728	75,294	183.3	51.7	235.0
Year 1	2025	62,932	76,725	186.9	52.7	239.6
Year 2	2026	64,136	77,932	190.5	53.5	244.0
Year 3	2027	65,340	79,139	194.0	54.3	248.4
Year 4	2028	66,544	80,347	197.6	55.2	252.8
Year 5	2029	67,748	81,554	201.2	56.0	257.2
Year 6	2030	68,952	82,761	204.8	56.8	261.6
Year 7	2031	70,156	83,932	208.3	57.6	266.0
Year 8	2032	71,360	85,102	211.9	58.4	270.3
Year 9	2033	72,564	86,273	215.5	59.2	274.7
Year 10	2034	73,768	87,443	219.1	60.0	279.1
	10-Yr Increase	12,040	12,149	35.8	8.3	44.1

Growth-Related Expenditures	**$1,047,205**	**$244,354**	**$1,291,559**

PROPOSED EMS IMPACT FEES

Infrastructure components and cost factors for EMS impact fees are summarized in the upper portion of Figure E7. For EMS impact fees, the capital cost is $205.37 per person and $48.81 per job.

EMS impact fees for residential development are assessed according to the number of persons per housing unit. The single-family fee of $509 is calculated using a cost of $205.37 per person multiplied by a demand unit of 2.48 persons per housing unit.

Nonresidential impact fees are assessed according to the number of nonresidential vehicle trips per 1,000 square feet of floor area (per room for Hotel and per bed Nursing Home). The commercial/shopping center fee of $596 per 1,000 square feet of floor area is derived from a cost of $48.81 per job multiplied by a demand unit of 12.21 average daily trips per 1,000 square feet.

Figure E7: Proposed Impact Fees

Fee Component	Cost per Person	Cost per Trip
EMS Facilities	$117.37	$27.93
EMS Vehicles and Equipment	$86.98	$20.11
Impact Fee Report	$1.02	$0.77
Total	$205.37	$48.81

Residential Fees per Unit				
Development Type	Persons per Housing Unit[1]	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.48	$509	$119	$390
Multi-Family	1.75	$359	$86	$273

Nonresidential Fees per 1,000 Square Feet				
Development Type	Avg Weekday Vehicle Trips[1]	Proposed Fees	Current Fees	Increase / Decrease
Light Industrial	2.44	$119	$0	$119
Business Park	6.22	$304	$0	$304
Manufacturing	2.38	$116	$0	$116
Warehousing	0.86	$42	$0	$42
Commercial/Shopping Center	12.21	$596	$0	$596
Office/Institutional	5.42	$265	$0	$265
Hotel (per room)	1.68	$82	$0	$82
Nursing Home (per bed)	1.53	$75	$0	$75

1. See Land Use Assumptions

PROJECTED EMS IMPACT FEE REVENUE

Projected fee revenue shown below is based on the development projections, shown in Appendix A, and the proposed EMS impact fees shown in Figure E7. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with impact fee revenue. Projected impact fee revenue over the next 10 years equals $3.06 million and total projected expenditures equal $6.39 million, meaning the County will need to fund $3.3 million from non-impact fee revenue.

Figure E8: Projected EMS Impact Fee Revenue

Fee Component	Growth Share	Existing Share	Total
EMS Facilities	$1,752,352	$3,347,648	$5,100,000
EMS Vehicles and Equipment	$1,291,559	$0	$1,291,559
Impact Fee Report	$7,900	$0	$7,900
Total	$3,051,811	$3,347,648	$6,399,459

		Single Family $509 per unit	Multi-Family $359 per unit	Industrial $119 per 1,000 sq ft	Comm/Shop $596 per 1,000 sq ft	Office/Inst $265 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2024	21,162	3,552	2,678,869	3,494,705	4,813,460
Year 1	2025	21,597	3,624	2,729,773	3,561,112	4,904,926
Year 2	2026	22,032	3,696	2,772,730	3,617,150	4,982,111
Year 3	2027	22,466	3,767	2,815,687	3,673,189	5,059,297
Year 4	2028	22,901	3,839	2,858,643	3,729,228	5,136,482
Year 5	2029	23,336	3,911	2,901,600	3,785,267	5,213,667
Year 6	2030	23,771	3,983	2,944,556	3,841,305	5,290,853
Year 7	2031	24,206	4,055	2,986,198	3,895,629	5,365,676
Year 8	2032	24,640	4,126	3,027,840	3,949,953	5,440,499
Year 9	2033	25,075	4,198	3,069,482	4,004,276	5,515,322
Year 10	2034	25,510	4,270	3,111,123	4,058,600	5,590,145
10-Year Increase		4,348	718	432,254	563,895	776,685
Projected Revenue		$2,214,543	$258,051	$51,369	$336,122	$205,452

Projected Fee Revenue	$3,065,537
Total Expenditures	$6,399,459
Existing Development Share	$3,347,648

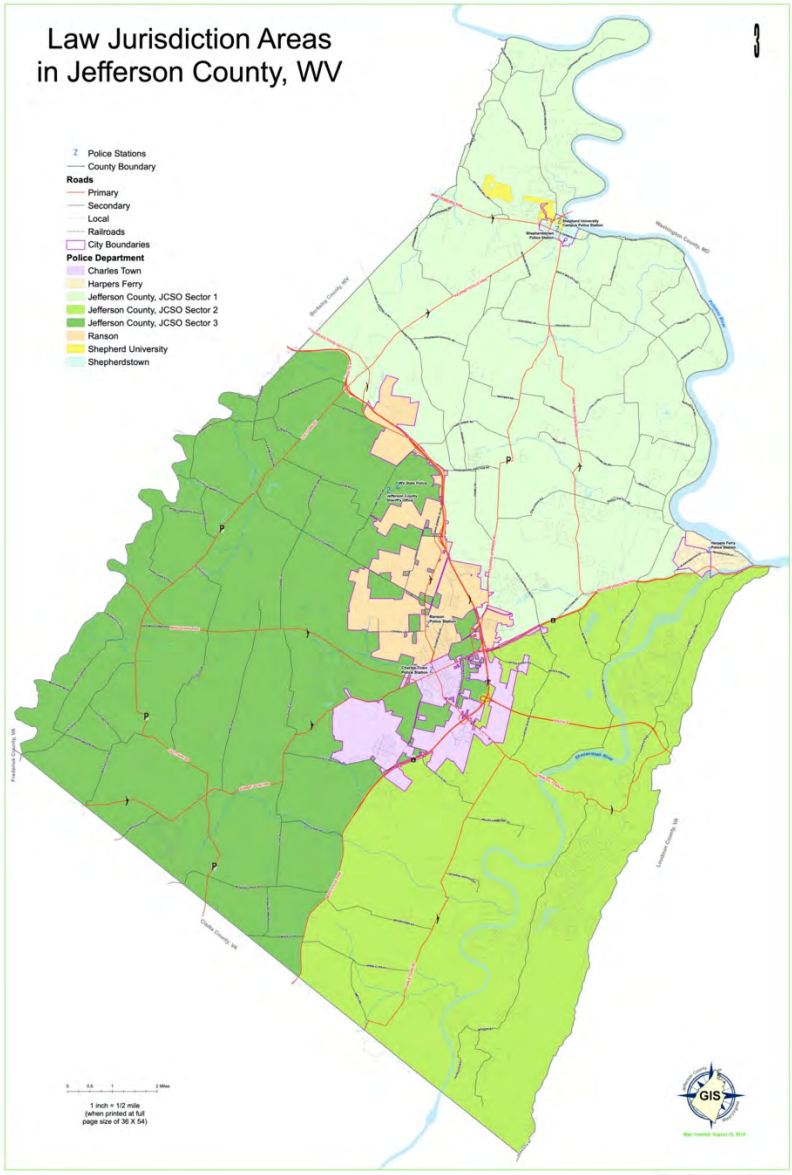
LAW ENFORCEMENT IMPACT FEES

METHODOLOGY

The Law Enforcement impact fees include components for Sheriff facilities, Sheriff vehicles, law enforcement equipment, and the cost of preparing the Impact Fee Study. The incremental expansion methodology is used for Sheriff facilities and vehicles/equipment. A plan-based methodology is used for the Impact Fee Study.

SERVICE AREA

Jefferson County provides law enforcement services in unincorporated areas of Jefferson County; therefore, there is a single service area for the Law Enforcement impact fees (unincorporated areas only).



PROPORTIONATE SHARE

Impact fees should not exceed a proportionate share of the capital cost needed to provide capital facilities to the development. The Law Enforcement impact fees allocate the cost of capital facilities between residential and nonresidential development using functional population. Based on 2021 estimates (the latest data available at the time of this study) from the U.S. Census Bureau's OnTheMap web application, residential development accounts for approximately 78 percent of functional population and nonresidential development is responsible for the remaining 22 percent.

Figure L1: Proportionate Share

Demand Units in 2021					
Residential				Demand Hours/Day	Person Hours
Population	58,473				
Residents Not Working		32,571		20	651,425
Employed Residents		25,902			
Employed in Jefferson County, WV			6,814	14	95,396
Employed outside Jefferson County, WV			19,088	14	267,232
				Residential Subtotal	1,014,053
				Residential Share	**78%**
Nonresidential					
Non-working Residents		32,571		4	130,285
Jobs Located in Jefferson County, WV		16,053			
Residents Employed in Jefferson County, WV			6,814	10	68,140
Non-Resident Workers (inflow commuters)			9,239	10	92,390
				Nonresidential Subtotal	290,815
				Nonresidential Share	**22%**
				Total	1,304,869

Source: TischlerBise calculation (population); U.S. Census Bureau, OnTheMap 6.23.5 Application and LEHD Origin-Destination Employment Statistics (employment).

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit, based on housing unit size. Since nonresidential calls for service were unavailable by specific nonresidential use (i.e. retail, office, industrial, etc.), TischlerBise recommends using average weekday nonresidential vehicle trips as the best demand indicator for law enforcement facilities. Trip generation rates are highest for commercial development, such as a shopping center, and lowest for industrial/warehouse development. Office/institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for law enforcement protection from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for law enforcement services. If employees per 1,000 square feet of building area were used as the demand indicator, Law Enforcement impact fees would be too high for office/institutional development.

IMPACT FEE COMPONENTS

Sheriff Facilities

The Sheriff currently occupies two separate buildings totaling 16,660 square feet. Jefferson County plans to construct a new 34,000 square foot Public Safety building, of which the Sheriff will occupy 20,000 square feet. The Sheriff's Office would vacate their present space as part of this construction plan. This new Public Safety building is estimated to cost $10.2 million, with the Sheriff and Emergency Services Agency splitting the cost evenly.

To determine the existing level of service for the Sheriff's Office, this analysis uses functional population to allocate the proportionate share of demand to residential and nonresidential development. Since law enforcement services are provided primarily to unincorporated County areas, unincorporated County population and nonresidential vehicle trips are used as the demand base. The existing level of service for residential development is 0.2833 square feet per person (16,660 square feet X 78 percent residential share / 45,864 unincorporated County residents). The existing nonresidential level of service is 0.0870 square feet per vehicle trip (16,660 square feet X 22 percent nonresidential share / 42,114 unincorporated County vehicle trips). Using a construction cost of $255 per square foot (based on the planned Public Safety building cost of $5.1 million divided by 20,000 square feet), the Sheriff facilities cost is $72.25 per person (0.2833 square feet per person X $255 per square foot) and $22.19 per vehicle trip (0.0870 square feet per vehicle trip X $255 per square foot).

Figure L2: Level of Service and Cost Allocation for Sheriff Facilities

Description	Square Feet
Sheriff's Building	15,660
Blue Ridge Community Facility	1,000
Total	16,660

Cost Factors	
Cost per Square Foot[1]	$255

Level-of-Service (LOS) Standards	
Existing Square Feet	16,660
Residential	
Residential Share	78%
2024 Unicorporated Population	45,864
Square Feet per Person	0.2833
Cost per Person	**$72.25**
Nonresidential	
Nonresidential Share	22%
2024 Uninc.Nonresidential Trips	42,114
Square Feet per Vehicle Trip	0.0870
Cost per Vehicle Trip	**$22.19**

Source: Jefferson County Sheriff's Office

Sheriff Vehicles

Jefferson County plans to expand its current inventory of Sheriff vehicles to serve future development. The current inventory includes 64 units with a total replacement value of $4,983,597, which equates to a weighted average cost of $77,869 per unit.

This analysis uses functional population to allocate the proportionate share of demand to residential and nonresidential development. The existing level of service for residential development is 0.0011 units per person (64 units X 78 percent residential share/45,864 residents). The existing nonresidential level of service is 0.0003 units per vehicle trip (64 units X 22 percent nonresidential share/42,114 vehicle trips). Using the average cost of $77,869 per unit, the Sheriff vehicles cost is $84.76 per person (0.0011 units per person X $77,869 per unit) and $26.03 per vehicle trip (0.0003 units per vehicle trip X $77,869 per unit).

Figure L3: Level of Service and Cost Allocation for Sheriff Vehicles

Description	Units	Unit Cost	Total Cost
SUV	59	$80,000	$4,720,000
Ford E350 Van	1	$56,000	$56,000
GMC Van	1	$56,000	$56,000
Ford Taurus	1	$48,880	$48,880
Chevy Equinox	1	$53,837	$53,837
Chevy Malibu	1	$48,880	$48,880
Total	64	$77,869	$4,983,597

Cost Factors	
Average Cost per Unit	$77,869

Level-of-Service (LOS) Standards	
Existing Units	64
Residential	
Residential Share	78%
2024 Unicorporated Population	45,864
Units per Person	0.0011
Cost per Person	**$84.76**
Nonresidential	
Nonresidential Share	22%
2024 Uninc.Nonresidential Trips	42,114
Units per Vehicle Trip	0.0003
Cost per Vehicle Trip	**$26.03**

Source: Jefferson County Sheriff's Office

Impact Fee Study

The cost to prepare the Law Enforcement impact fees equals $7,200, and Jefferson County plans to update its impact fees every five years. Based on this cost, proportionate share, and five-year projections of future residential and nonresidential development, the cost is $1.76 per person and $0.45 per vehicle trip.

Figure L4: Impact Fee Study

Infrastructure Category	Cost	Proportionate Share		Service Unit	2024	2029	5-Year Change	Cost per Service Unit
Law Enforcement	$7,200	Residential	78%	Unincorp. Population	45,864	49,061	3,198	$1.76
		Nonresidential	22%	Unincorp. Vehicle Trips	42,114	45,616	3,502	$0.45

PROJECTED DEMAND

Sheriff Facilities

Based on a 10-year projected population increase of 6,395 persons in unincorporated areas, future residential development demands an additional 1,812 square feet of Sheriff space (6,395 additional persons X 0.2833 square feet per person). With projected growth of 6,795 vehicle trips in unincorporated areas, future nonresidential development demands an additional 591 square feet (6,795 additional vehicle trips X 0.0870 square feet per vehicle trip). This additional space (2,403 square feet) has an estimated cost of approximately $612,861. This demand of 2,403 square feet is less than the increase in Sheriff space as part of the planned Public Safety building (3,340 square feet), so new development has not corrected any existing deficiencies through the fee calculation.

Figure L5: Projected Demand for Sheriff Space

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
Sheriff Facilities	0.2833 Square Feet	per Person	$255
	0.0870 Square Feet	per Vehicle Trip	

	Demand for Sheriff Facilities					
	Year	Population	Vehicle Trips	Square Feet		
				Residential	Nonresidential	Total
Base	2024	45,864	42,114	12,995	3,665	16,660
Year 1	2025	46,503	42,915	13,176	3,735	16,911
Year 2	2026	47,143	43,590	13,357	3,794	17,151
Year 3	2027	47,782	44,265	13,538	3,852	17,391
Year 4	2028	48,422	44,941	13,720	3,911	17,631
Year 5	2029	49,061	45,616	13,901	3,970	17,871
Year 6	2030	49,701	46,291	14,082	4,029	18,111
Year 7	2031	50,341	46,946	14,263	4,086	18,349
Year 8	2032	50,980	47,601	14,444	4,143	18,587
Year 9	2033	51,620	48,255	14,626	4,200	18,825
Year 10	2034	52,259	48,910	14,807	4,257	19,063
	10-Yr Increase	6,395	6,795	1,812	591	2,403

Growth-Related Expenditures	**$462,053**	**$150,808**	**$612,861**

Sheriff Vehicles

Based on a projected population increase of 6,395 persons in the unincorporated areas between 2024 and 2034, future residential development demands an additional 7 units (6,395 additional persons X 0.0011 units per person). With projected growth of 6,795 vehicle trips in unincorporated areas between

2024 and 2034, future nonresidential development demands an additional 2.3 units (6,795 additional vehicle trips X 0.0003 units per vehicle trip). Future development in unincorporated areas demands an additional 9.2 Sheriff vehicles at a cost of $718,935 (9.2 vehicles X $77,869 per unit).

Figure L6: Projected Demand for Sheriff Vehicles

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Sheriff Vehicles	0.0011 Units	per Person	$77,869
	0.0003 Units	per Vehicle Trip	

	Demand for Sheriff Vehicles					
	Year	Population	Vehicle Trips	Units		
				Residential	Nonresidential	Total
Base	2024	45,864	42,114	49.9	14.1	64.0
Year 1	2025	46,503	42,915	50.6	14.3	65.0
Year 2	2026	47,143	43,590	51.3	14.6	65.9
Year 3	2027	47,782	44,265	52.0	14.8	66.8
Year 4	2028	48,422	44,941	52.7	15.0	67.7
Year 5	2029	49,061	45,616	53.4	15.3	68.7
Year 6	2030	49,701	46,291	54.1	15.5	69.6
Year 7	2031	50,341	46,946	54.8	15.7	70.5
Year 8	2032	50,980	47,601	55.5	15.9	71.4
Year 9	2033	51,620	48,255	56.2	16.1	72.3
Year 10	2034	52,259	48,910	56.9	16.4	73.2
	10-Yr Increase	6,395	6,795	7.0	2.3	9.2

Growth-Related Expenditures	**$542,025**	**$176,910**	**$718,935**

Proposed Law Enforcement Impact Fees

Infrastructure components and cost factors for Law Enforcement impact fees are summarized in the upper portion of Figure L7. For Law Enforcement impact fees, the capital cost is $158.76 per person and $48.68 per trip.

Law Enforcement impact fees for residential development are assessed according to the number of persons per housing unit. The single-family fee of $394 is calculated using a cost of $158.76 per person multiplied by demand units of 2.48 persons per housing unit.

Nonresidential impact fees are assessed according to the number of jobs per 1,000 square feet of floor area (per room for Hotel and per bed Nursing Home). The commercial/shopping center fee of $595 per 1,000 square feet of floor area is derived from a cost of $48.68 per trip multiplied by a demand unit of 12.21 average weekday vehicle trips per 1,000 square feet.

Figure L7: Proposed Impact Fees

Fee Component	Cost per Person	Cost per Trip
Sheriff Facilities	$72.25	$22.19
Sheriff Vehicles	$84.76	$26.03
Impact Fee Report	$1.76	$0.45
Total	**$158.76**	**$48.68**

Residential Fees per Unit				
Development Type	Persons per Housing Unit[1]	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.48	$394	$636	($242)
Multi-Family	1.75	$278	$455	($177)

Nonresidential Fees per 1,000 Square Feet				
Development Type	Avg Weekday Vehicle Trips[1]	Proposed Fees	Current Fees	Increase / Decrease
Light Industrial	2.44	$119	$0	$119
Business Park	6.22	$303	$0	$303
Manufacturing	2.38	$116	$0	$116
Warehousing	0.86	$42	$0	$42
Commercial/Shopping Center	12.21	$595	$0	$595
Office/Institutional	5.42	$264	$0	$264
Hotel (per room)	1.68	$82	n/a	n/a
Nursing Home (per bed)	1.53	$74	n/a	n/a

1. See Land Use Assumptions

Projected Law Enforcement Impact Fee Revenue

Projected fee revenue shown below is based on the development projections, shown in Appendix A, and the proposed Law Enforcement impact fees shown in Figure L7. If development occurs at a more rapid

rate than projected, the demand for infrastructure will increase and impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with impact fee revenue. Projected impact fee revenue over the next 10 years equals $1.34 million and total projected expenditures equal $5.8 million, meaning the County will need to fund $4.48 million from non-impact fee revenue.

Figure L8: Projected Law Enforcement Impact Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Sheriff Facilities	$612,861	$4,487,139	$5,100,000
Sheriff Vehicles	$718,935	$0	$718,935
Impact Fee Report	$7,200	$0	$7,200
Total	$1,338,996	$4,487,139	$5,826,135

Year		Single Family $394 per unit	Multi-Family $278 per unit	Industrial $119 per 1,000 sq ft	Comm/Shop $595 per 1,000 sq ft	Office/Inst $264 per 1,000 sq ft
		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2024	15,813	2,314	1,498	1,955	2,692
Year 1	2025	16,070	2,316	1,527	1,992	2,743
Year 2	2026	16,326	2,318	1,551	2,023	2,787
Year 3	2027	16,583	2,319	1,575	2,055	2,830
Year 4	2028	16,839	2,321	1,599	2,086	2,873
Year 5	2029	17,096	2,323	1,623	2,117	2,916
Year 6	2030	17,353	2,325	1,647	2,149	2,959
Year 7	2031	17,609	2,327	1,670	2,179	3,001
Year 8	2032	17,866	2,328	1,694	2,209	3,043
Year 9	2033	18,122	2,330	1,717	2,240	3,085
Year 10	2034	18,379	2,332	1,740	2,270	3,127
10-Year Increase		2,566	18	242	315	434
Projected Revenue		$1,010,309	$5,001	$28,658	$187,517	$114,618

Projected Fee Revenue	$1,346,103
Total Expenditures	$5,826,135
Existing Development Share	$4,480,033

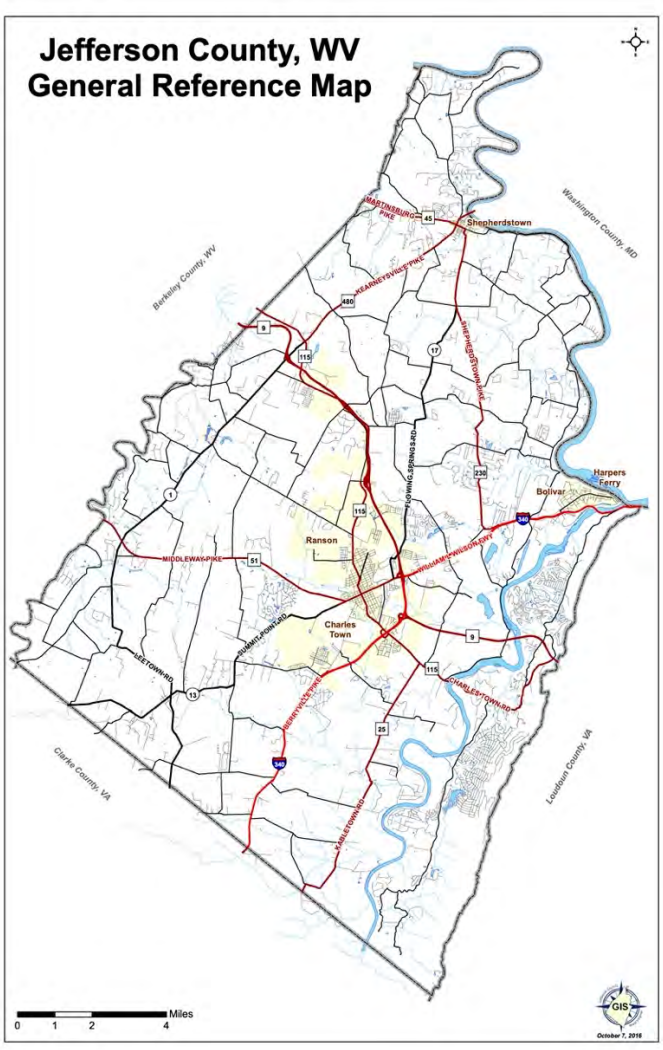
PARKS AND RECREATION IMPACT FEES

METHODOLOGY

The Parks and Recreation impact fees include components for park land, park improvements, park facilities, park vehicles and equipment, and the cost of preparing the Impact Fee Study. The incremental expansion methodology is used for park land, park improvements, park facilities, and park vehicles and equipment. A plan-based methodology is used for the Impact Fee Study. The Parks and Recreation impact fees allocate 100 percent of the cost of capital facilities to residential development.

SERVICE AREA

Jefferson County provides park and recreation amenities throughout Jefferson County; therefore, there is a single service area for the Parks and Recreation impact fees.



IMPACT FEE COMPONENTS

Park Land

Jefferson County plans to expand its current inventory of park land to serve future development. The current inventory includes 470.9 acres.

This analysis allocates 100 percent of demand to residential development. The existing level of service for residential development is 0.0076 acres per person (470.9 acres X 100 percent residential share / 61,728 persons). Based on recent land acquisition costs provided by staff, the analysis uses a cost of $10,500 per acre. The park land cost is $80.10 per person (0.0076 acres per person X $10,500 per acre).

Figure P1: Park Land Level of Service and Cost Allocation for Park Land

Description	Acres
Bolivar Nature Park	6.80
Harvest Hills Park	21.77
Heather Marriot Park	11.00
James Hite Park	119.73
Leetown Park	10.87
Moulton Park	88.88
Mount Mission Park	3.50
Sam Michael's Park	137.24
South Jefferson Park	71.11
Total	**470.9**

Cost Factors	
Cost per Acre	$10,500

Level-of-Service (LOS) Standards	
Existing Acres	470.9
Residential	
Residential Share	100%
2024 Population	61,728
Acres per Person	0.0076
Cost per Person	**$80.10**

Source: Jefferson County Parks Department

Park Improvements

Jefferson County plans to expand its current inventory of park improvements to serve future development. The current inventory includes 270 units with a total cost of $19,932,712, which equates to a weighted average cost per improvement of $73,825.

Figure P2: Existing Inventory of Park Improvements

Description	Improvements	Unit Cost	Total Cost
Amphitheatre	1	$650,000	$650,000
Baseball Field	2	$400,000	$800,000
Baseball Field w Lights	2	$500,000	$1,000,000
Basketball Court	1	$100,000	$100,000
Benches	36	$500	$18,000
Bleachers	22	$1,300	$28,600
Boat Ramp	1	$21,530	$21,530
Camping Pads	11	$1,002	$11,022
Concession Stand	4	$300,000	$1,200,000
Cross Country Trail	1	$32,300	$32,300
Dog Park	1	$350,000	$350,000
Dugouts	6	$15,000	$90,000
Electric/Solar Gates	2	$3,200	$6,400
Fence	5	$12,920	$64,600
Football Field	1	$400,000	$400,000
Gazebo	1	$56,250	$56,250
Horseshoe Pits	2	$6,250	$12,500
Maintenance Building (Michaels)	1	$192,500	$192,500
Maintenance Building (S Jeff.)	1	$48,450	$48,450
Nature Trail	1	$1,080	$1,080
Old Church Bldg. (Storage)	1	$22,050	$22,050
Parking Lot	11	$21,530	$236,830
Pavilion	5	$55,000	$275,000
Grills	20	$800	$16,000
Picnic Tables	76	$6,480	$492,480
Playground	6	$260,000	$1,560,000
Restrooms	9	$150,000	$1,350,000
Sign	11	$7,920	$87,120
Soccer / Multi-Use Field	17	$500,000	$8,500,000
Softball Fields with Lights	3	$500,000	$1,500,000
Tennis Courts	4	$100,000	$400,000
Volleyball Court	1	$50,000	$50,000
Walking Trail	4	$90,000	$360,000
Total	**270**	**$73,825**	**$19,932,712**

This analysis allocates 100 percent of demand for park improvements to residential development. The existing residential level of service is 0.0044 improvements per person (270 improvements X 100 percent residential share / 61,728 persons). Using the average cost of $73,825 per improvement, the park improvement cost is $322.91 per person (0.0044 improvements per person X $73,825 per unit).

Figure P3: Level of Service and Cost Allocation for Park Improvements

Cost Factors	
Average Cost per Unit	$73,825

Level-of-Service (LOS) Standards	
Existing Improvements	270
Residential	
Residential Share	100%
2020 Population	61,728
Improvements per Person	0.0044
Cost per Person	**$322.91**

Source: Jefferson County Parks Department

Recreation

Jefferson County plans to expand or construct new recreation center space to serve future development. The current inventory includes 18,571 square feet. This analysis allocates 100 percent of demand to residential development. The existing level of service for residential development is 0.3009 square feet per person (18,571 square feet X 100 percent residential share / 61,728 persons). Using and estimated construction cost of $205 per square foot, the recreation center cost is $61.67 per person (0.3009 square feet per person X $205 per square foot).

Figure P4: Level of Service and Cost Allocation for Recreation

Description	Square Feet
Jefferson County Community Center	18,571

Cost Factors	
Total Square Feet	18,571
Cost per Square Foot*	$205

Level-of-Service (LOS) Standards	
Existing Square Feet	18,571
Residential	
Residential Share	100%
2024 Population	61,728
Square Feet per Person	0.3009
Cost per Person	**$61.67**

Source: Jefferson County Parks Department

*RS Means Construction Index

Park Vehicles and Equipment

Jefferson County plans to expand its current inventory of park vehicles and equipment to serve future development. The current inventory includes 27 units with a total cost of $525,600, which equates to a weighted average cost per unit of $19,467.

This analysis allocates 100 percent of demand to residential development. The existing level of service for residential development is 0.0004 units per person (27 units X 100 percent residential share / 61,728 persons). Using the average cost of $19,467 per unit, the park vehicles and equipment cost is $8.51 per person (0.0004 units per person X $19,467 per unit).

Figure P5: Level of Service and Cost Allocation for Park Vehicles and Equipment

Description	Units	Unit Cost	Total Cost
Dump Truck	1	$50,000	$50,000
Pick-Up Truck	3	$40,000	$120,000
Scag Mowers	2	$9,000	$18,000
Tractors	3	$17,000	$51,000
Trailers	4	$4,000	$16,000
Miscellaneous Tools	1	$10,000	$10,000
Mobile Recreation Van	1	$55,000	$55,000
John Deere Gator	1	$12,000	$12,000
Golf Cart	1	$12,000	$12,000
John Deere Zero Turn Mowers	8	$22,500	$180,000
Troy Built Snowblower	1	$900	$900
Backpack Blower	1	$700	$700
Total	**27**	**$19,467**	**$525,600**

Cost Factors	
Average Cost per Unit	$19,467

Level-of-Service (LOS) Standards	
Existing Units	27
Residential	
Residential Share	100%
2024 Population	61,728
Units per Person	0.0004
Cost per Person	$8.51

Source: Jefferson County Parks Department

Impact Fee Study

The cost to prepare the Parks and Recreation impact fees equals $12,500, and Jefferson County plans to update its impact fees every five years. Based on this cost, proportionate share, and five-year projections of future residential development, the cost is $2.08 per person.

Figure P6: Impact Fee Study

Infrastructure Category	Cost	Proportionate Share		Service Unit	2024	2029	5-Year Change	Cost per Service Unit
Parks and Recreation	$12,500	Residential	100%	Population	61,728	67,748	6,020	$2.08
		Nonresidential	0%					$0.00

PROJECTED DEMAND

Park Land

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development demands an additional 91.8 acres (12,040 additional persons X 0.0076 acres per person).The park land cost is $964,374 (91.8 acres X $10,500 per acre).

Figure P7: Projected Demand for Park Land

Type of Infrastructure	Level of Service	Demand Unit	Cost per Acre
Park Land	0.0076 Acres	per Person	$10,500

	Demand for Park Land					
	Year	Population	Jobs	Acres		
				Residential	Nonresidential	Total
Base	2024	61,728	27,302	470.9	0.0	470.9
Year 1	2025	62,932	27,821	480.1	0.0	480.1
Year 2	2026	64,136	28,259	489.3	0.0	489.3
Year 3	2027	65,340	28,697	498.5	0.0	498.5
Year 4	2028	66,544	29,134	507.6	0.0	507.6
Year 5	2029	67,748	29,572	516.8	0.0	516.8
Year 6	2030	68,952	30,010	526.0	0.0	526.0
Year 7	2031	70,156	30,010	535.2	0.0	535.2
Year 8	2032	71,360	30,010	544.4	0.0	544.4
Year 9	2033	72,564	30,010	553.6	0.0	553.6
Year 10	2034	73,768	30,010	562.7	0.0	562.7
	10-Yr Increase	**12,040**	**2,708**	**91.8**	**0.0**	**91.8**

Growth-Related Expenditures	**$964,374**	**$0**	**$964,374**

Park Improvements

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development demands an additional 52.7 park improvements (12,040 additional persons X 0.0044 improvements per person). The park improvement cost is $3,887,712 (52.7 improvements X $73,825 per unit).

Figure P8: Projected Demand for Park Improvements

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park	0.0044 Improvements	per Person	$73,825

	Demand for Park Improvements					
	Year	Population	Jobs	Improvements		
				Residential	Nonresidential	Total
Base	2024	61,728	27,302	270.0	0.0	270.0
Year 1	2025	62,932	27,821	275.3	0.0	275.3
Year 2	2026	64,136	28,259	280.5	0.0	280.5
Year 3	2027	65,340	28,697	285.8	0.0	285.8
Year 4	2028	66,544	29,134	291.1	0.0	291.1
Year 5	2029	67,748	29,572	296.3	0.0	296.3
Year 6	2030	68,952	30,010	301.6	0.0	301.6
Year 7	2031	70,156	30,010	306.9	0.0	306.9
Year 8	2032	71,360	30,010	312.1	0.0	312.1
Year 9	2033	72,564	30,010	317.4	0.0	317.4
Year 10	2034	73,768	30,010	322.7	0.0	322.7
	10-Yr Increase	**12,040**	**2,708**	**52.7**	**0.0**	**52.7**

Growth-Related Expenditures	**$3,887,712**	**$0**	**$3,887,712**

Recreation Center Space

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development demands an additional 3,622 square feet of recreation center space (12,040 additional persons X 0.3009 square feet per person). The recreation center space cost is $742,535 (3,622 square feet X $205 per square foot).

Figure P9: Projected Demand for Recreation Center Space

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
Recreation Center Space	0.3009 Square Feet	per Person	$205

Demand for Recreation Center					
Year	Population	Jobs	Square Feet		
			Residential	Nonresidential	Total
2024	61,728	27,302	18,571.0	0.0	18,571.0
2025	62,932	27,821	18,933.2	0.0	18,933.2
2026	64,136	28,259	19,295.4	0.0	19,295.4
2027	65,340	28,697	19,657.6	0.0	19,657.6
2028	66,544	29,134	20,019.8	0.0	20,019.8
2029	67,748	29,572	20,382.1	0.0	20,382.1
2030	68,952	30,010	20,744.3	0.0	20,744.3
2031	70,156	30,010	21,106.5	0.0	21,106.5
2032	71,360	30,010	21,468.7	0.0	21,468.7
2033	72,564	30,010	21,830.9	0.0	21,830.9
2034	73,768	30,010	22,193.1	0.0	22,193.1
10-Yr Increase	**12,040**	**2,708**	**3,622**	**0.0**	**3,622**
Growth-Related Expenditures			**$742,535**	**$0**	**$742,535**

Park Vehicles and Equipment

Based on a projected population increase of 12,040 persons over the next 10 years, future residential development demands an additional 5.3 units of vehicles/equipment (12,040 additional persons X 0.0004 units per person). The park vehicles and equipment cost is approximately $102,500 (5.3 units X $19,467 per unit).

Figure P10: Projected Demand for Park Vehicles and Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park Vehicles	0.0004 Units	per Person	$19,467

	Demand for Park Vehicles and Equipment					
	Year	Population	Jobs	Units		
				Residential	Nonresidential	Total
Base	2024	61,728	27,302	27.0	0.0	27.0
Year 1	2025	62,932	27,821	27.5	0.0	27.5
Year 2	2026	64,136	28,259	28.1	0.0	28.1
Year 3	2027	65,340	28,697	28.6	0.0	28.6
Year 4	2028	66,544	29,134	29.1	0.0	29.1
Year 5	2029	67,748	29,572	29.6	0.0	29.6
Year 6	2030	68,952	30,010	30.2	0.0	30.2
Year 7	2031	70,156	30,010	30.7	0.0	30.7
Year 8	2032	71,360	30,010	31.2	0.0	31.2
Year 9	2033	72,564	30,010	31.7	0.0	31.7
Year 10	2034	73,768	30,010	32.3	0.0	32.3
10-Yr Increase		**12,040**	**2,708**	**5.3**	**0.0**	**5.3**

Growth-Related Expenditures	**$102,514**	**$0**	**$102,514**

PROPOSED PARKS AND RECREATION IMPACT FEES

Infrastructure components and cost factors for Parks and Recreation impact fees are summarized in the upper portion of Figure P11. For Parks and Recreation impact fees, the capital cost is $475.28 per person.

Parks and Recreation impact fees for residential development are assessed according to the number of persons per housing unit. The single-family fee of $1,179 is calculated using a cost of $475.28 per person multiplied by a demand unit of 2.48 persons per housing unit.

Jefferson County will not assess Parks and Recreation impact fees on nonresidential development.

Figure P11: Proposed Parks and Recreation Impact Fees

Fee Component	Cost per Person	Cost per Job
Park Land	$80.10	$0.00
Park Improvements	$322.91	$0.00
Recreation Center Space	$61.67	$0.00
Park Vehicles and Equipment	$8.51	$0.00
Impact Fee Report	$2.08	$0.00
Total	$475.28	$0.00

Residential Fees per Unit				
Development Type	Persons per Housing Unit[1]	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.48	$1,179	$1,131	$48
Multi-Family	1.75	$832	$810	$22

Nonresidential Fees per 1,000 Square Feet				
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees	Current Fees	Increase / Decrease
Light Industrial	1.57	$0	$0	$0
Business Park	3.08	$0	$0	$0
Manufacturing	1.89	$0	$0	$0
Warehousing	0.34	$0	$0	$0
Commercial/Shopping Center	2.12	$0	$0	$0
Office/Institutional	3.26	$0	$0	$0
Hotel (per room)	0.13	$0	$0	$0
Nursing Home (per bed)	0.92	$0	$0	$0

1. See Land Use Assumptions

PROJECTED PARKS AND RECREATION IMPACT FEE REVENUE

Projected fee revenue shown below is based on the development projections, shown in Appendix A, and the proposed Parks and Recreation impact fees shown in Figure P11. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with impact fee revenue. Projected impact fee revenue equals $5,749,859 and projected expenditures equal $5,749,859.

Figure P12: Projected Parks and Recreation Impact Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Park Land	$964,374	$0	$964,374
Park Improvements	$3,887,712	$0	$3,887,712
Recreation Center Space	$782,758	$0	$782,758
Park Vehicles and Equipment	$102,514	$0	$102,514
Impact Fee Report	$12,500	$0	$12,500
Total	$5,749,859	$0	$5,749,859

		Single Family $1,187 per unit	Multi-Family $838 per unit	Industrial $0 per 1,000 sq ft	Comm/Shop $0 per 1,000 sq ft	Office/Inst $0 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2024	22,196	3,849	2,679	3,495	4,813
Year 1	2025	22,631	3,921	2,730	3,561	4,905
Year 2	2026	23,066	3,993	2,773	3,617	4,982
Year 3	2027	23,501	4,065	2,816	3,673	5,059
Year 4	2028	23,935	4,137	2,859	3,729	5,136
Year 5	2029	24,370	4,208	2,902	3,785	5,214
Year 6	2030	24,805	4,280	2,945	3,841	5,291
Year 7	2031	25,240	4,352	2,945	3,841	5,291
Year 8	2032	25,675	4,424	2,945	3,841	5,291
Year 9	2033	26,109	4,496	2,945	3,841	5,291
Year 10	2034	26,544	4,567	2,945	3,841	5,291
10-Year Increase		4,348	718	266	347	477
Projected Revenue		$5,149,778	$600,081	$0	$0	$0

Projected Fee Revenue	$5,749,859
Total Expenditures	$5,749,859
Existing Development Share	$0

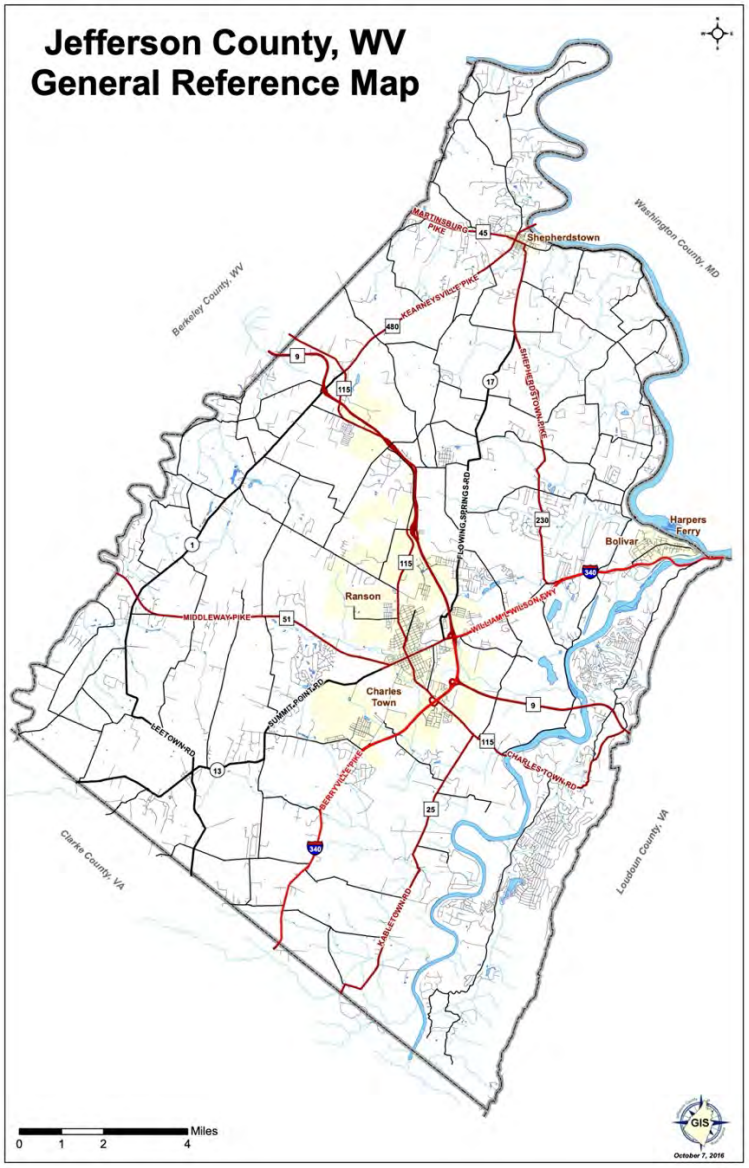
SCHOOL IMPACT FEES

METHODOLOGY

The School impact fees include components for high school classroom space and the cost of preparing the Impact Fee Study. A land component is not included because the County already owns land for a future high school. The incremental expansion methodology is used for high school classroom space. A plan-based methodology is used for the Impact Fee Study.

SERVICE AREA

Jefferson County Schools provide public school facilities throughout Jefferson County; therefore, there is a single service area for the School impact fees.



PROPORTIONATE SHARE

Impact fees should not exceed a proportionate share of the capital cost needed to provide capital facilities to the development. The School impact fees allocate 100 percent of the cost of capital facilities to residential development.

STUDENT GENERATION RATES

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

TischlerBise derives custom student generation rates for Jefferson County using demographic data from survey responses published by the U.S. Census Bureau in files known as Public Use Microdata Samples (PUMS) and 2021-2022 school year enrollment data from the Jefferson County Schools. TischlerBise uses American Community Survey (ACS) 2018-2022 PUMS data – the most recent year available – to derive the number of students per housing unit by type of unit. PUMS data are only available for areas of roughly 100,000 persons, and Jefferson County is included in West Virginia Public Use Microdata Area (PUMA) 00400. As shown in Appendix E, PUMA 00400 includes Berkeley County, Hampshire County, Jefferson County, Mineral County, and Morgan County. As shown on the following pages, this analysis calculates unadjusted student generation rates based on all public school students and housing units in PUMA 00400 and then adjusts these rates based on local enrollment and housing unit estimates for Jefferson County.

Public School Students and Housing Units – PUMA 00400

Given demographic characteristics and potential for future development in Jefferson County, student generation rates are calculated for the following housing unit types: (1) Single-Family and (2) Multi-Family. Student generation rates are calculated for three school levels: (1) elementary (grades Pre-K to 5), (2) middle (grades 6 to 8), and (3) high (grades 9 to 12). Shown below, Figure S1 includes total public school students by school level and total housing units by housing unit type for PUMA 00400. This reflects all public school students who live in PUMA 00400.

Figure S1: Public School Students and Housing Units in PUMA 00400 by Housing Unit Type

Public School Students by Housing Unit Type for PUMA Region 400

	Public School Students		Total
	Single-Family	Multi-Family	
Elementary	12,944	976	13,920
Middle	7,827	582	8,409
High	10,815	200	11,015
Total	31,586	1,758	33,344

	Housing Units		Total
	Single-Family	Multi-Family	
Housing Units	92,815	9,703	102,518

Source: Cross tabulation by TischlerBise using U. S. Census Bureau, 2018-2022 ACS 5-Year Estimates Weighted Public Use Microdata Sample for West Virginia PUMA 400.

Unadjusted Student Generation Rates – PUMA 00400

Next, using the totals shown in Figure S1, student generation rates by housing unit type are calculated by dividing the number of students in each type of housing unit by the total number of housing units. Shown below, Figure S2 represents the unadjusted student generation rates by housing unit type for PUMA 00400.

Figure S2: Unadjusted Student Generation Rates by Housing Unit Type

Unadjusted Student Generation Rates

Unadjusted Public School Students per Dwelling

	Housing Unit Type		Weighted Average
	Single-Family	Multi-Family	
Elementary	0.139	0.101	0.136
Middle	0.084	0.060	0.082
High	0.117	0.021	0.107
Total	0.340	0.181	0.325

Source: Cross tabulation by TischlerBise using U. S. Census Bureau, 2018-2022 ACS 5-Year Estimates Weighted Public Use Microdata Sample for West Virginia PUMA 400.

Public School Students and Housing Units – Jefferson County

To reflect demand for public school facilities in Jefferson County, this analysis applies the unadjusted student generation rates in Figure S2 to housing unit estimates from 2018-2022 American Community Survey (ACS) 5-year estimates shown at the bottom of Figure S3. For example, applying the unadjusted student generation rate 0.021 high school students in multi-family units (shown above in Figure S2) to the local estimate of 3,535 multi-family units provides an estimate of 73 high school students in existing multi-family units. This analysis compares the enrollment estimates from the previous step, equaling 7,577 students, to the actual enrollment of 8,659 students for the 2021-2022 school year.

Figure S3: Public School Students in Jefferson County by Housing Unit Type

Estimated Public School Students by Housing Unit Type

	Public School Students		Total	Jefferson County 2021-2022
	Single-Family	Multi-Family		
Elementary	2,843	356	3,198	3,795
Middle	1,719	212	1,931	2,074
High	2,375	73	2,448	2,790
Total	6,937	640	7,577	8,659

	Housing Units		Total	2022 Housing Units
	Single-Family	Multi-Family		
Housing Units	20,383	3,535	23,918	23,918

Source: TischlerBise estimates for Jefferson County using U.S. Census Bureau, 2018-2022 ACS 5-Year Estimates Weighted PUMS for West Virginia PUMA 400 (calibrated to JCS enrollment for 2021-2022 and 2018-2022 ACS housing unit estimate.)

Adjusted Student Generation Rates – Jefferson County Schools

By adjusting estimated enrollment to actual enrollment, the adjusted student generation rate for all housing units in Jefferson County is 0.363 students per housing unit – 0.389 students per single-family unit and 0.206 students per multi-family unit. Student generation rates are shown with three decimal places, but it is often easier to understand the rates based on the expected number of students from 100 housing units. For example, Jefferson County should expect 100 new housing units to generate approximately 36 additional public school students (100 units X 0.363 public school students per unit). Continuing the example, those 100 housing units are expected to generate 16 elementary school students (100 units X 0.159 students per unit), 9.0 middle school students (100 units X 0.087 students per unit), and 12 high school students (100 units X 0.117 students per unit).

Figure S4: Adjusted Student Generation Rates by Housing Unit Type

Jefferson County Public School Students Per Housing Unit

Public School Students per Dwelling

	Housing Types		Weighted Average
	Single-Family	Multi-Family	
Elementary	0.165	0.119	0.159
Middle	0.091	0.064	0.087
High	0.133	0.023	0.117
Total	0.389	0.206	0.363

Source: TischlerBise tabulation of U.S. Census Bureau 2018-2022 5-Year Estimates ACS Weighted PUMS for West Virginia PUMA 400 (Calibrated to JCS enrollment for 2021-2022 and 2018-2022 ACS housing unit estimates.)

STUDENT ENROLLMENT

Historical Enrollment

Since the 2013-2014 school year, overall enrollment in Jefferson County has decreased by a total of 825 students. However, what is more telling is that the majority of this decline in enrollment has occurred over the last five years. Since the 2019-2020 school year overall enrollment has declined by 706 students. The largest decreases have been at the elementary school level, although middle school enrollment has been declining as well. Over the last five years, high school enrollment has increased by 12 students.

Figure S5: Historical Enrollment

Historical Enrollment				
School Year	Elementary	Middle	High	Total
2013-2014	4,418	2,147	2,496	9,061
2014-2015	4,432	2,088	2,546	9,066
2015-2016	4,367	2,084	2,687	9,138
2016-2017	4,363	2,058	2,781	9,202
2017-2018	4,363	2,065	2,745	9,173
2018-2019	4,210	2,080	2,744	9,034
2019-2020	4,108	2,068	2,766	8,942
2020-2021	3,695	2,080	2,718	8,493
2021-2022	3,795	2,074	2,790	8,659
2022-2023	3,665	1,954	2,773	8,392
2023-2024	3,552	1,906	2,778	8,236
10-Year Increase	(866)	(241)	282	(825)
5-Year Increase	(556)	(162)	12	(706)

Source: Jefferson County Schools

Projected Enrollment

Enrollment projections are based on student generation rates shown in Figure S4 and projected housing unit growth shown in Appendix A. As Figure S6 indicates, this methodology projects an additional 1,833 students over the next ten years. In reality, as Figure S5 indicated, enrollment has been declining, which suggests that while new housing units are generating school-age children, it is evident that as the City's existing development base ages in place, the influx of new school age children generated by new residential development is being more than offset by the loss of school age children by the existing development base.

Figure S6: Projected Enrollment

	2024	2025	2026	2027	2028	2029	2034	10-Year Increase
	Base Year	1	2	3	4	5	10	
Housing Units								
Single Family	21,162	21,597	22,032	22,466	22,901	23,336	25,510	**4,348**
Multi-Family	3,552	3,624	3,696	3,767	3,839	3,911	4,270	**718**
Total Housing Units	**24,714**	**25,221**	**25,727**	**26,234**	**26,740**	**27,247**	**29,780**	**5,066**
	2024	2025	2026	2027	2028	2029	2034	
Elementary	3,552	3,583	3,663	3,744	3,824	3,905	4,307	**755**
Middle	1,906	1,961	2,005	2,049	2,093	2,137	2,357	**451**
High	2,778	2,870	2,929	2,989	3,048	3,108	3,405	**627**
Totsl Enrollment	**8,236**	**8,413**	**8,597**	**8,781**	**8,965**	**9,149**	**10,069**	**1,833**

COST OF CONSTRUCTION

Construction costs were provided by Jefferson County Schools, based on estimated costs for a future high school. As shown below in Figure S7, the estimated cost of a new high school is $75,480,000. The County estimates the local share of the cost will be 85%, or $63,986,699. When compared to the square footage (170,000), the weighted average construction cost is $376 per square foot.

Figure S7: Local Cost of Construction

Project	Square Feet	Total	Local Share	Local Cost per SF
New High School	170,000	$75,480,000	$63,986,699	$376

Source: Jefferson County Schools. Local share assumed to be 85%

IMPACT FEE COMPONENTS

High Schools – Incremental Expansion

Shown below, Figure S8 includes the current inventory for high schools in Jefferson County. High schools include 122.6 acres and 397,124 square feet of floor area with capacity to serve 2,716 students. Total enrollment for the 2023-2024 school year of 2,778 students represents a utilization rate of 102 percent.

Figure S8: High School Inventory

High School	Acres[1]	Facility Square Feet[1]	Student Capacity[1]	2023-2024 Enrollment[2]	Utilization
Jefferson	64.6	188,124	1,406	1,394	99%
Washington	58.0	209,000	1,310	1,384	106%
Total	122.6	397,124	2,716	2,778	102%

1. Jefferson County Schools
2. West Virginia Department of Education

For high school facilities, the existing LOS is 142.95 square feet per student (397,124 square feet / 2,778 students). Since enrollment at the high school level exceeds capacity, enrollment rather than capacity is used to determine the level of service. Using the local share of construction cost estimate of $376 per square foot provided by the School Building Authority of West Virginia, the facilities cost is $53,806.49 per student (142.95 square feet per student X $376 per square foot).

Figure S9: High School Level of Service and Cost Allocation

Cost Allocation Factors	
Cost per Square Foot[1]	$376

Level-of-Service (LOS) Standards	
Existing Enrollment	2,778
Existing Square Feet	397,124
Square Feet per Student	142.95
Cost per Student	$53,806.49

1. Jefferson County and School Building Authority of West Virginia

Impact Fee Study – Plan-Based

The cost to prepare the Schools impact fees totals $28,600. Jefferson County plans to update its impact fees every five years. Based on this cost, proportionate share, and five-year projections of new residential development, the cost is $31.32 per student.

Figure S10: Impact Fee Study

Infrastructure Category	Cost	Proportionate Share		Service Unit	2024	2029	5-Year Change	Cost per Service Unit
School	$28,600	Residential	100%	Students	8,236	9,149	913	$31.32
		Nonresidential	0%					$0.00

CREDITS

Series 2021 Credit

Jefferson County Schools, through the Jefferson County Building Commission, will issue debt to finance future school facilities. This analysis includes a credit for future principal payments related to the Series 2021 debt. A credit is necessary since future residential units will pay for school facilities through the impact fee and will also contribute to future principal payments on this debt. A credit is not necessary for interest payments because interest costs are not included in the impact fee.

As shown in Figure S11, planned debt for future school facilities will be repaid through 2036. The remaining principal balance will be $36,555,000. Annual principal payments are divided by projected student enrollment to determine the credit per student. To account for the time value of money, annual payments per student are discounted using a net present value formula based on a discount rate of 5.00 percent. The net present value of future principal payments is $2,845.11 per student.

Figure S11: Credit for Future Principal Payments (Series 2021)

Year	Principal	Enrollment	Credit
2025	$2,605,000	8,413	$309.63
2026	$2,660,000	8,597	$309.41
2027	$2,715,000	8,781	$309.19
2028	$2,795,000	8,965	$311.77
2029	$2,905,000	9,149	$317.52
2030	$3,020,000	9,333	$323.58
2031	$3,145,000	9,517	$330.46
2032	$3,205,000	9,701	$330.38
2033	$3,270,000	9,885	$330.81
2034	$3,340,000	10,069	$331.72
2035	$3,410,000	10,253	$332.59
2036	$3,485,000	10,437	$333.92
Total	**$36,555,000**		**$3,870.98**

Discount Rate	5.00%
Net Present Value	**$2,845.11**

PROPOSED SCHOOL IMPACT FEES

Infrastructure components and cost factors for School impact fees are summarized in Figure S12. For School impact fees, the net cost is $50,992.70 per high school student. School impact fees are assessed according to the number of students per housing unit.

The single-family fee of $6,772 is the sum of the high school components – Jefferson County will not assess fees related to elementary and middle schools. The high school component of $6,772 is calculated using a cost of $50,992.70 per high school student multiplied by a demand unit of 0.133 high school students per housing unit.

Figure S6: Proposed School Impact Fees

Fee Component	Elementary	Middle	High
School Facilities (Local Share)	~~$40,419.91~~	~~$55,860.84~~	$53,806.49
Impact Fee Study	~~$31.32~~	~~$31.32~~	$31.32
Series 2021 Credit	~~($2,845.11)~~	~~($2,845.11)~~	($2,845.11)
Total			**$50,992.70**

Development Type	Students per Housing Unit			Proposed Fees	Current Fees	Increase / Decrease
	Elementary	Middle	High			
Single Family	~~0.165~~	~~0.091~~	0.133	**$6,772**	$1	$6,771
Multi-Family	~~0.119~~	~~0.064~~	0.023	**$1,198**	$1	$1,197

PROJECTED SCHOOL IMPACT FEE REVENUE

Projected fee revenue shown in Figure S13 is based on the development projections, shown in Appendix A, and the maximum allowable School impact fees. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and impact fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with impact fee revenue. Projected impact fee revenue equals $30.3 million and projected expenditures equal $75,480,000. The School Building Authority contribution is projected to be approximately $11.5 million. It is important to note that additional revenue will be realized between years 11-20.

Figure S13: Projected School Impact Fee Revenue

Fee Component	Total
School Facilities	$75,480,000
Total	**$75,480,000**

	Single Family $6,772 per unit	Multi-Family $1,198 per unit	Industrial $0 per 1,000 sq ft	Comm/Shop $0 per 1,000 sq ft	Office/Inst $0 per 1,000 sq ft
Year	Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base 2024	21,162	3,552	0	0	0
Year 1 2025	21,597	3,624	0	0	0
Year 2 2026	22,032	3,696	0	0	0
Year 3 2027	22,466	3,767	0	0	0
Year 4 2028	22,901	3,839	0	0	0
Year 5 2029	23,336	3,911	0	0	0
Year 6 2030	23,771	3,983	0	0	0
Year 7 2031	24,206	4,055	0	0	0
Year 8 2032	24,640	4,126	0	0	0
Year 9 2033	25,075	4,198	0	0	0
Year 10 2034	25,510	4,270	0	0	0
10-Year Increase	4,348	718	0	0	0
Projected Revenue	**$29,444,920**	**$860,124**	**$0**	**$0**	**$0**

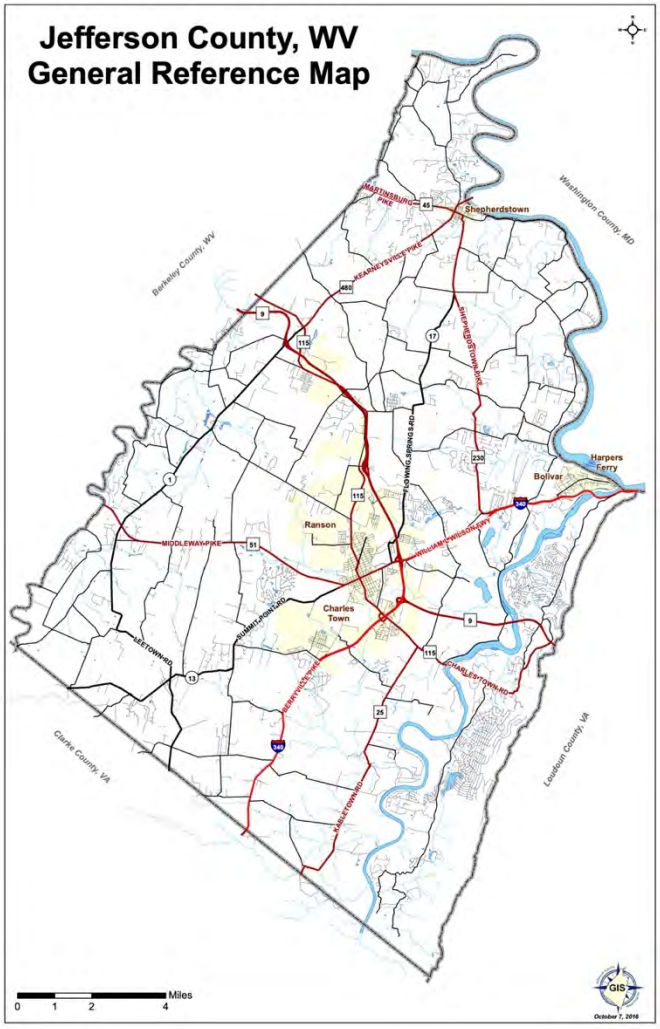
Projected Fee Revenue	$30,305,044
Total Expenditures	$75,480,000
School Building Authority	$11,493,301

APPENDIX A: LAND USE ASSUMPTIONS

Jefferson County, West Virginia, retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate impact fees based on that analysis. TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the calculation of the impact fees. Current demographic data estimates for January 1, 2024 are used in calculating levels of service (LOS) provided to existing development in Jefferson County. TischlerBise utilized a variety of data sources to estimate current and project future population, housing units, employment by type, and nonresidential floor area. These sources include the US Census Bureau, Esri, Inc., Institute of Transportation Engineers (ITE), and the Metro Washington Council of Governments.

The estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for areas within the boundaries of Jefferson County, West Virginia. The map below illustrates the areas within the Countywide Service Area for EMS, Municipal Facilities, Parks and Recreation, and School impact fees. Appendix C includes a map of the Law Enforcement Service Area.

Figure A1: Impact Fee Service Area



RESIDENTIAL DEMAND FACTORS

Housing Unit Size

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Impact fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the impact fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that Jefferson County impose impact fees for residential development according to the number of persons per housing unit (PPHU).

Occupancy calculations require data on population and the types of units by structure. The 2020 census did not obtain detailed information using a "long-form" questionnaire. Instead, the U.S. Census Bureau switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses, which share a common sidewall, but are constructed on an individual parcel of land). For impact fees in Jefferson County, detached stick-built units and attached are included in the "Single-Family" category. The second residential category includes duplexes and all other structures with two or more units on an individual parcel of land. This is referred to as the "Multi-Family" category. The "Multi-Family" category also includes mobile homes, boats, RV, vans, and all other units.

Figure A2 below shows the occupancy estimates for Jefferson County. Single-family units average 2.48 persons per housing unit and multi-family units average 1.75 persons per housing unit.

Figure A2: Persons per Housing Unit

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing	Housing Mix	Vacancy Rate
Single-Family Units[1]	50,489	18,348	2.75	20,383	2.48	85.2%	10.00%
Multi-Family Units[2]	6,182	3,124	1.98	3,535	1.75	14.8%	11.60%
Total	56,671	21,472	2.64	23,918	2.37	100.0%	10.20%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates, Tables B25024, B25032, B25033.

1. Includes detached and attached (i.e. townhouses) units.

2. Includes dwellings in structures with two or more units, mobile homes, and all other units.

Residential Construction Trends

The Jefferson County Office of Impact Fees provided data on recent housing unit permitting trends. As shown below in Figure A3, the County issued building permits for 2,533 units from 2019 to 2023. This is an annual average of 507 housing units. Figure A3 also shows that the distribution of units between the municipalities and the unincorporated County is almost equal, with the municipalities receiving 1,241 units and the unincorporated County receiving 1,292 units. These annual averages are much higher than the housing unit growth assumed in the Metro Washington Council of Governments, Round 10.0 Cooperative Forecasts. Therefore, the recent annual average housing permits are used to project future housing unit growth, to which the persons per housing unit factors shown above in Figure A2 are applied

to estimate annual population. The actual number of residential permits shown in Figure A3 for 2022 and 2023 are also added to the housing units in Figure A2 to estimate the current number of housing units in Jefferson County as of January 1, 2024.

Figure A3: 5-Year Housing Unit Trends in the County

Countywide

Year	SF	MF	Total
2019	214	11	**225**
2020	288	313	**601**
2021	443	1	**444**
2022	450	17	**467**
2023	779	17	**796**
Total	**2,174**	**359**	**2,533**
Average	**435**	**72**	**507**

Source: Jefferson County building permit data

Municipalities

Year	SF	MF	Total
2019	66	11	**77**
2020	115	313	**428**
2021	52	1	**53**
2022	199	14	**213**
2023	459	11	**470**
Total	**891**	**350**	**1,241**
Average	**178**	**70**	**248**

Source: Jefferson County building permit data

Unincorporated County

Year	SF	MF	Total
2019	148	0	**148**
2020	173	0	**173**
2021	391	0	**391**
2022	251	3	**254**
2023	320	6	**326**
Total	**1,283**	**9**	**1,292**
Average	**257**	**2**	**258**

Source: Jefferson County building permit data

NONRESIDENTIAL DEMAND FACTORS

TischlerBise uses the term jobs to refer to employment by place of work. In Figure A4, gray shading indicates the nonresidential development prototypes used by TischlerBise to derive employment densities and average weekday vehicle trip ends. For nonresidential development, TischlerBise uses data published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

The prototype for industrial development is Light Industrial (110) which generates 4.87 average weekday vehicle trip ends per 1,000 square feet of floor area and has 637 square feet of floor area per employee. For office and institutional development, the proxy is General Office (ITE 710); it generates 10.84 average weekday vehicle trip ends per 1,000 square feet of floor area and has 307 square feet of floor area per employee. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.01 average weekday vehicle trips per 1,000 square feet of floor area and has 471 square feet of floor area per employee.

Figure A4: Nonresidential Demand Units

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit[1]	Wkdy Trip Ends Per Employee[1]	Emp Per Dmd Unit	Sq Ft Per Emp
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
254	Assisted Living	bed	2.60	4.24	0.61	n/a
254	Assisted Living	1,000 Sq Ft	4.19	4.24	0.99	n/a
310	Hotel	room	7.99	14.34	0.56	n/a
320	Motel	room	3.35	25.17	0.13	n/a
520	Elementary School	student	2.27	22.50	0.10	n/a
525	High School	student	1.94	21.95	0.09	n/a
540	Community College	student	1.15	14.61	0.08	n/a
550	University/College	student	1.56	8.89	0.18	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
620	Nursing Home	bed	3.06	3.31	0.92	n/a
620	Nursing Home	1,000 Sq Ft	6.75	3.31	2.04	490
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

SUMMARY OF COUNTYWIDE GROWTH INDICATORS

Key land use assumptions for the Jefferson County Impact Fee Study are population, housing units, and employment. TischlerBise utilized the Metro Washington Council of Governments, Round 10.0 Cooperative Forecasts to estimate base year population. Base year housing units are estimated by adding permits in calendar years 2022 and 2023 to the 2018-2022 American Community Survey 5-Year Estimates. As stated previously, TischlerBise utilized building permit trend data provided by the Jefferson County Office of Impact Fees to project future residential development. These housing unit increases were then converted to population using the average persons per housing unit factors from the 2018-2022 American Community Survey 5-Year Estimates. For nonresidential development, the base year employment estimate, as well as future employment, is also calculated based on data used in the Metro Washington Council of Governments, Round 10.0 Cooperative Forecasts. TischlerBise converts employment estimates and projections to nonresidential floor area based on average square feet per job multipliers published by the Institute of Transportation Engineers (ITE). The projections contained in this document provide the foundation for the Impact Fee Study. These metrics are the service units and demand indicators used in the Impact Fee Study.

Development projections, summarized below, will be used to estimate impact fee revenue and to indicate the anticipated need for growth-related infrastructure. However, impact fee methodologies are designed to reduce sensitivity to development projections in the determination of the proportionate share fee amounts. If actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, Jefferson County will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development. During the next 10 years, countywide development projections indicate an increase of 5,066 housing units and approximately 1.77 million square feet of nonresidential floor area.

Figure A5: Summary of Growth Indicators - Countywide

Jefferson County, WV	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year
	Base Year	1	2	3	4	5	6	7	8	9	10	Increase
Population	**61,728**	**62,932**	**64,136**	**65,340**	**66,544**	**67,748**	**68,952**	**70,156**	**71,360**	**72,564**	**73,768**	**12,040**
Housing Units												
Single Family	21,162	21,597	22,032	22,466	22,901	23,336	23,771	24,206	24,640	25,075	25,510	4,348
Multi-Family	3,552	3,624	3,696	3,767	3,839	3,911	3,983	4,055	4,126	4,198	4,270	718
Total Housing Units	**24,714**	**25,221**	**25,727**	**26,234**	**26,740**	**27,247**	**27,754**	**28,260**	**28,767**	**29,273**	**29,780**	**5,066**
Employment												
Industrial	4,208	4,288	4,356	4,423	4,491	4,558	4,626	4,691	4,757	4,822	4,887	679
Commercial	7,425	7,566	7,685	7,804	7,923	8,042	8,161	8,277	8,392	8,507	8,623	1,198
Office & Institutional	15,669	15,967	16,218	16,469	16,721	16,972	17,223	17,467	17,710	17,954	18,197	2,528
Total Employment	**27,302**	**27,821**	**28,259**	**28,697**	**29,134**	**29,572**	**30,010**	**30,434**	**30,859**	**31,283**	**31,708**	**4,405**
Nonres. Floor Area												
Industrial	2,678,869	2,729,773	2,772,730	2,815,687	2,858,643	2,901,600	2,944,556	2,986,198	3,027,840	3,069,482	3,111,123	432,254
Commercial	3,494,705	3,561,112	3,617,150	3,673,189	3,729,228	3,785,267	3,841,305	3,895,629	3,949,953	4,004,276	4,058,600	563,895
Office & Institutional	4,813,460	4,904,926	4,982,111	5,059,297	5,136,482	5,213,667	5,290,853	5,365,676	5,440,499	5,515,322	5,590,145	776,685
Total Nonres. Floor Area	**10,987,034**	**11,195,811**	**11,371,992**	**11,548,172**	**11,724,353**	**11,900,534**	**12,076,715**	**12,247,503**	**12,418,291**	**12,589,080**	**12,759,868**	**1,772,834**

The projections for unincorporated Jefferson County are summarized below. During the next 10 years, unincorporated County development projections are for an increase of 2,584 housing units and approximately 991,600 square feet of nonresidential floor area.

Figure A6: Summary of Growth Indicators – Unincorporated County

Unincorporated Jefferson County, WV	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year
	Base Year	1	2	3	4	5	6	7	8	9	10	Increase
Population	**45,864**	**46,503**	**47,143**	**47,782**	**48,422**	**49,061**	**49,701**	**50,341**	**50,980**	**51,620**	**52,259**	**6,395**
Housing Units												
Single Family	15,813	16,070	16,326	16,583	16,839	17,096	17,353	17,609	17,866	18,122	18,379	2,566
Multi-Family	2,314	2,316	2,318	2,319	2,321	2,323	2,325	2,327	2,328	2,330	2,332	18
Total Housing Units	**18,127**	**18,385**	**18,644**	**18,902**	**19,161**	**19,419**	**19,677**	**19,936**	**20,194**	**20,453**	**20,711**	**2,584**
Employment												
Industrial	2,354	2,399	2,436	2,474	2,512	2,550	2,587	2,624	2,661	2,697	2,734	380
Commercial	4,153	4,232	4,298	4,365	4,432	4,498	4,565	4,629	4,694	4,758	4,823	670
Office & Institutional	8,764	8,931	9,071	9,212	9,352	9,493	9,633	9,770	9,906	10,042	10,178	1,414
Total Employment	**15,271**	**15,561**	**15,806**	**16,051**	**16,296**	**16,541**	**16,786**	**17,023**	**17,260**	**17,498**	**17,735**	**2,464**
Nonres. Floor Area (x1,000)												
Industrial	1,498,385	1,526,857	1,550,884	1,574,911	1,598,938	1,622,965	1,646,993	1,670,284	1,693,576	1,716,868	1,740,159	241,775
Commercial	1,954,710	1,991,853	2,023,198	2,054,542	2,085,887	2,117,231	2,148,575	2,178,961	2,209,346	2,239,731	2,270,116	315,406
Office & Institutional	2,692,335	2,743,495	2,786,668	2,829,840	2,873,013	2,916,185	2,959,358	3,001,209	3,043,060	3,084,911	3,126,762	434,427
Total Nonres. Floor Area	**6,145,429**	**6,262,205**	**6,360,750**	**6,459,294**	**6,557,838**	**6,656,382**	**6,754,926**	**6,850,453**	**6,945,981**	**7,041,509**	**7,137,037**	**991,608**

AVERAGE WEEKDAY VEHICLE TRIPS

Jefferson County will use average weekday vehicle trips (AWVT) as the nonresidential demand units for Fire/Emergency Medical Services and Law Enforcement fees.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development is Light Industrial (110) which generates 4.87 average weekday vehicle trip ends per 1,000 square feet of

floor area. For office and institutional development, the proxy is General Office (ITE 710), and it generates 10.84 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.01 average weekday vehicle trips per 1,000 square feet of floor area.

Figure A7: Average Weekday Vehicle Trip Ends by Land Use

Development Type	Dev. Unit	ITE Code	Weekday VTE	Trip Adj
Industrial	KSF	110	4.87	50%
Commercial	KSF	820	37.01	33%
Office & Institutional	KSF	710	10.84	50%

Trip Rate Adjustments

Average Weekday Vehicle Trips (AWVT) are used as a measure of demand by land use. Vehicle trips are estimated using average weekday vehicle trip ends from the reference book, *Trip Generation, 11th Edition*, published by the Institute of Transportation Engineers (ITE) in 2021. A vehicle trip end represents a vehicle entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate the impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. The basic trip adjustment factor is 50 percent. As discussed further below, the impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Adjustment for Pass-By Trips

For commercial development, the trip adjustment factor is less than 50 percent 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 the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

NONRESIDENTIAL VEHICLE TRIP PROJECTIONS

Countywide

Provided below are Countywide summaries of nonresidential vehicle trip projections used in the Impact Fee Study.

Figure A8: Countywide Nonresidential Vehicle Trip Projections Summary

Development Type	Dev. Unit	ITE Code	Weekday VTE	Trip Adj
Industrial	KSF	110	4.87	50%
Commercial	KSF	820	37.01	33%
Office & Institutional	KSF	710	10.84	50%

Jefferson County, WV	Base	1	2	3	4	5	10	10-Year
	2024	2025	2026	2027	2028	2029	2034	Increase
Industrial KSF	2,679	2,730	2,773	2,816	2,859	2,902	2,945	266
Commercial KSF	3,495	3,561	3,617	3,673	3,729	3,785	3,841	347
Office & Institutional KSF	4,813	4,905	4,982	5,059	5,136	5,214	5,291	477
Industrial Trips	6,523	6,647	6,752	6,856	6,961	7,065	7,170	647
Commercial Trips	42,682	43,493	44,177	44,862	45,546	46,231	46,915	4,233
Office & Institutional Trips	26,089	26,585	27,003	27,421	27,840	28,258	28,676	2,587
Nonresidential Trips	75,294	76,725	77,932	79,139	80,347	81,554	82,761	7,468

Unincorporated Jefferson County

Provided below are unincorporated County summary of nonresidential vehicle trip projections used in the Impact Fee Study.

Figure A9: Unincorporated Nonresidential Vehicle Trip Projections Summary

Development Type	Dev. Unit	ITE Code	Weekday VTE	Trip Adj
Industrial	KSF	110	4.87	50%
Commercial	KSF	820	37.01	33%
Office & Institutional	KSF	710	10.84	50%

Unincorporated Jefferson County, WV	Base 2024	1 2025	2 2026	3 2027	4 2028	5 2029	10 2034	10-Year Increase
Industrial KSF	898	912	925	937	950	963	1,024	126
Commercial KSF	1,171	1,189	1,206	1,223	1,240	1,257	1,336	165
Office & Institutional KSF	1,613	1,638	1,661	1,685	1,708	1,731	1,840	227
Industrial Trips	2,186	2,220	2,251	2,283	2,314	2,346	2,493	308
Commercial Trips	14,303	14,525	14,731	14,937	15,143	15,349	16,315	2,012
Office & Institutional Trips	8,743	8,878	9,004	9,130	9,256	9,382	9,973	1,230
Nonresidential Trips	25,232	25,623	25,986	26,350	26,713	27,077	28,781	3,550

APPENDIX B: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Jefferson County will collect impact fees from all new residential units. One-time impact fees are determined by site capacity (i.e. number of residential units).

Single-Family Units:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family Units:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."
2. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.
3. Boat, RV, Van, Etc. includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

NONRESIDENTIAL DEVELOPMENT

The proposed general nonresidential development categories (defined below) can be used for all new construction within Jefferson County. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

Commercial: Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Commercial* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, movie theaters, hotels, and motels.

Industrial: Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

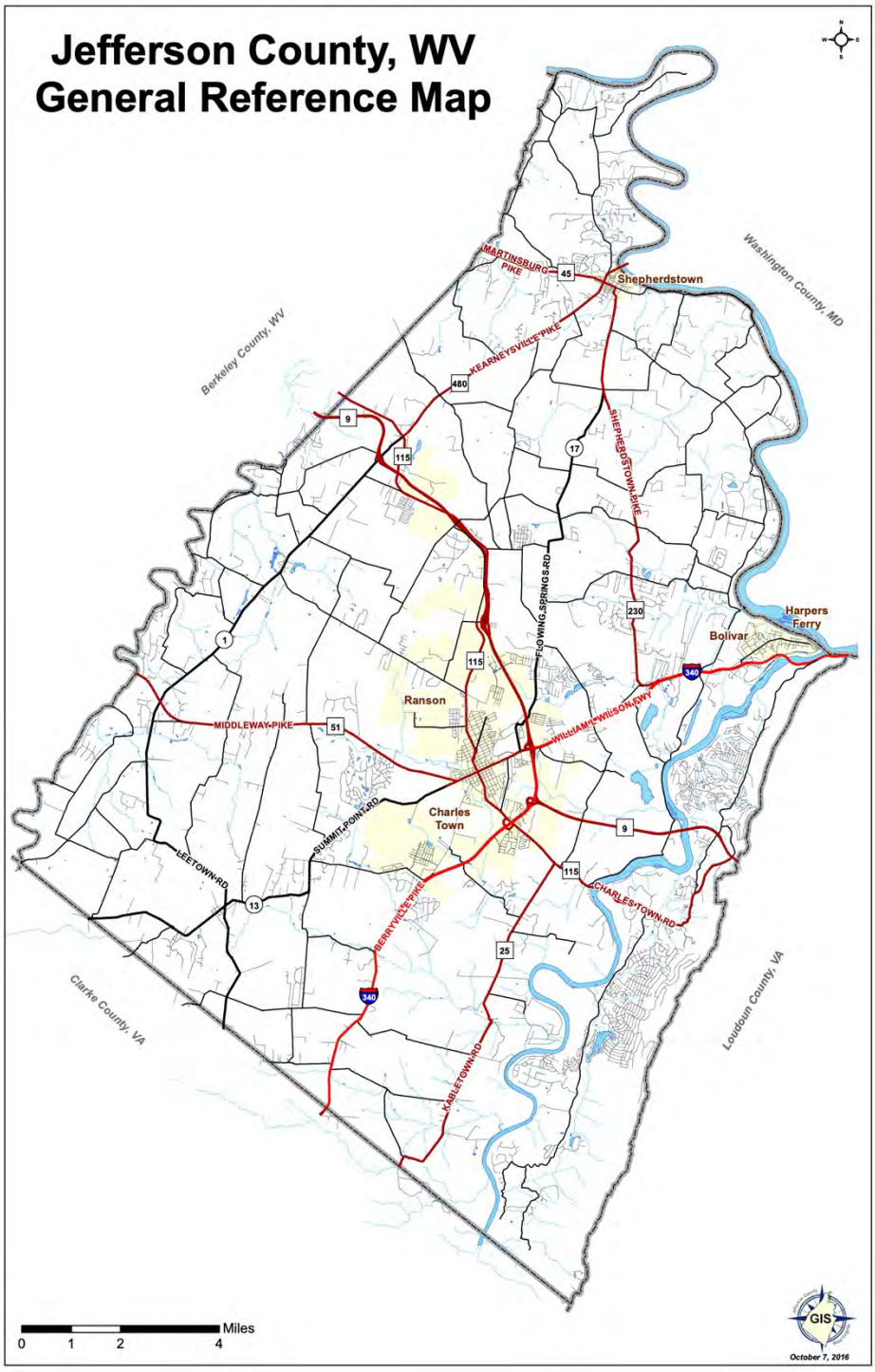
Institutional: Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, universities, churches, daycare facilities, hospitals, government buildings, assisted living facilities, and nursing home facilities.

Office: Establishments providing management, administrative, professional, or business services. By way of example, *Office* includes banks, business offices, medical offices, and veterinarian clinics.

APPENDIX C: SERVICE AREA MAPS

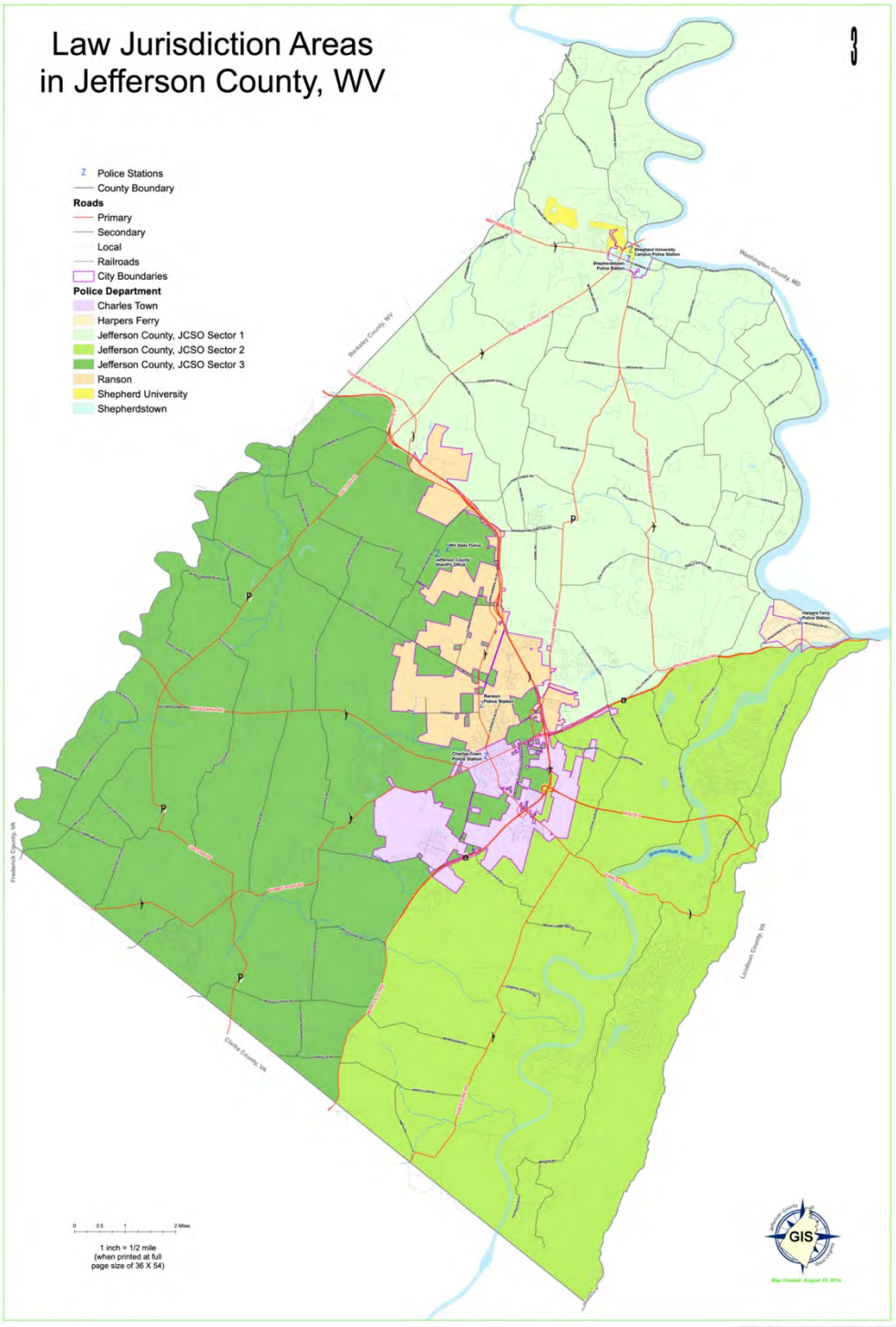
COUNTYWIDE SERVICE AREA

The map below represents the Countywide Service Area for County Administration, EMS, Parks and Recreation, and School impact fees.



LAW ENFORCEMENT SERVICE AREA

The map below represents the Law Enforcement Service Area. All development located within the Jefferson County Sheriff Office Jurisdiction will pay Law Enforcement impact fees. Development located in areas served by a local police department will not pay Law Enforcement impact fees.



APPENDIX D: PUBLIC USE MICRODATA AREA MAP