FINAL – IMPACT FEES

Prepared for:

Jefferson County, WV

February 19, 2015

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EXECUTIVE SUMMARY

TischlerBise was retained by the Jefferson County Commission to recalibrate the County's impact fees using current level of service standards for:

- Parks & Recreation
- Law Enforcement
- EMS

Impact fees are one-time payments used to defray the cost impacts of facilities necessary to accommodate new development. The payment amount represents new growth's fair share of capital facility needs. TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for the fee amounts. Specific capital costs have been identified using local data and current dollars. Level of Service (LOS) standards and cost factors are presented in this report and are the basis for the calculations. It should be noted that although growth affects both capital and operating expenses, the impact fee analysis addresses new development's impact on *capital* facilities only. It is further limited to capital improvements that provide additional capacity as opposed to maintenance or rehabilitation.

APPROACH AND METHODOLOGY

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

A general requirement common to impact fee calculations is the evaluation of *credits*. Two types of credits should be considered, **future revenue credits** and **site-specific credits**. Revenue credits may be necessary to avoid potential double payment situations arising from a one-time facility fee plus the payment of other revenues that may also fund growth-related capital improvements. Revenue credits are dependent upon the fee methodology used in the cost analysis.

To avoid this potential double payment situation, future revenue credits are appropriate to account for outstanding debt on County facilities. A credit is necessary since new residential units that will pay the fee will also contribute to future principal payments on this remaining debt through property taxes. A credit is not necessary for interest payments because interest costs are not included in the costs.

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

Figure 1 shows the method used to derive each component of the fees in Jefferson County.

Figure 1. Proposed Impact Fees: Methodologies

Type of Fee	Cost Recovery (past)	Incremental Expansion (present)	Plan-Based (future)
Parks & Recreation		Park Land Community Center Improvements Vehicles and Equipment	
Law Enforcement		Facilities Vehicles Equipment	
EMS	Facilities	Equipment	

MAXIMUM SUPPORTABLE IMPACT FEES

Figure 2 displays the current impact fees for Jefferson County. As shown below, the current fees include three residential floor area types, including Single Family Detached, Townhome/Duplex, and Multifamily. However, an ordinance was passed in 2013 that reduced the nonresidential fees by 99.5% to encourage nonresidential growth starting July 2013.

Figure 2. Current Impact Fees

Development Type	Parks & Rec	Law Enforcement	EMS
Residential (per housing unit)			
Single Family Detached	$752	$262	$698
Townhome/Duplex	$575	$200	$533
Multifamily	$566	$197	$525
Nonresidential (per 1,000 sq ft of floor area)			
Commercial*	$0	$101	$1,903
Office/Institutional*	$0	$42	$776
Business Park	$0	$33	$618
Light Industrial	$0	$18	$338
Warehousing	$0	$13	$240
Manufacturing	$0	$10	$185

*Nonresidential fees are averages of floor areas for each land use type.

Figure 3 provides the schedule of *Maximum Supportable Impact Fees* for Jefferson County Parks & Recreation, Law Enforcement, and EMS. The amounts shown are "maximum supportable" amounts based on the methodologies, level of service, and costs for the capital improvements identified herein. The fees represent the highest amount feasible for each type of applicable development, which represent new growth's fair share of the capital costs as detailed in this report. Jefferson County can adopt amounts that are lower than the maximum amounts shown. However, a reduction in fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in the County's level of service.

As shown in Figure 3, the categories have changed slightly, to "Single Family, Townhouse and Mobile Home," "Duplex," and "Multi-family" The U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS) which is limited by sample-size constraints in areas with relatively few residents. Data on detached housing units are now combined with attached single units (commonly known as townhouses). **Because of this, separate fees can no longer be determined for Single Family Detached and Townhouses.** A Single Unit (as discussed in the Land Use Assumptions Appendix to this report) includes single family detached units, single family attached units, and mobile homes. 2+ Units refers to structures with 2 or more units, which include Duplexes and Multi-family (apartments and condos), which is why these two categories have the same fee.

Figure 3. Maximum Supportable Impact Fees

Development Type	Parks & Rec			Law Enforcement			EMS		
Residential (per housing unit)	***Current Fee***	***Proposed Fee***	***Change***	***Current Fee***	***Proposed Fee***	***Change***	***Current Fee***	***Proposed Fee***	***Change***
Single Unit (Single-Family, Townhouse & Mobile Home)	$752	$625	($127)	$262	$230	($32)	$698	$69	($629)
Duplex	$575	$460	($115)	$200	$169	($31)	$533	$51	($482)
Multi-Family (Apartments & Condos)	$566	$460	($106)	$197	$169	($28)	$525	$51	($474)
Nonresidential (per 1,000 sq ft of floor area)									
Commercial*	$0	$0	N/A	$101	$397	$296	$1,903	$74	($1,829)
Office/Institutional*	$0	$0	N/A	$42	$155	$113	$776	$123	($653)
Business Park	$0	$0	N/A	$33	$175	$142	$618	$114	($504)
Light Industrial	$0	$0	N/A	$18	$98	$80	$338	$85	($253)
Warehousing	$0	$0	N/A	$13	$50	$37	$240	$34	($206)
Manufacturing	$0	$0	N/A	$10	$53	$43	$185	$66	($119)

*Nonresidential fees are averages of floor areas for each land use type.

OVERVIEW

INTRODUCTION TO IMPACT FEES

Definition

Impact fees, also known as development fees, are one-time payments used to fund capital improvements necessitated by new growth. Impact fees have been utilized by local governments in various forms for at least fifty years. Impact fees do have limitations, and should not be regarded as the total solution for infrastructure financing needs. Rather, they should be considered one component of a comprehensive portfolio to ensure adequate provision of public facilities with the goal of maintaining current levels of service in a community. Any community considering facility fees should note the following limitations:

- Impact fees can only be used to finance capital infrastructure and cannot be used to finance ongoing operations and/or maintenance and rehabilitation costs;
- Impact fees cannot be deposited in the County's General Fund. The funds must be accounted for separately in individual accounts and earmarked for the capital expenses for which they were collected; and
- Impact fees cannot be used to correct existing infrastructure deficiencies unless there is a funding plan in place to correct the deficiency for all current residents and businesses in the community.

Legal Framework

U. S. Constitution. Like all land use regulations, development exactions—including impact and facility fees—are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. 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. 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.

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 or facility fees.

Required Findings

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 development impact fees under the U. S. Constitution, we prefer a more rigorous formulation that recognizes three elements: "impact or 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. The reasonable relationship language of the statute is considered less strict than the rational nexus standard used by many courts. Individual elements of the nexus standard are discussed further in the following paragraphs.

Demonstrating an Impact. All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the supply of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Impact/facility fees may be used to recover the cost of development-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 improvement 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.

Demonstrating a Benefit. A sufficient benefit relationship requires that facility fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. 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 Act authorizing the County's impact fee requires that facilities funded with fee revenues be available *exclusively* to development paying the fees. In other words, existing development may benefit from these improvements as well.

Procedures for the earmarking and expenditure of fee revenues are typically mandated by the State enabling act, as are procedures to ensure that the fees are expended expeditiously or refunded. All of these requirements are intended to ensure that developments benefit from the fees they are required to pay. Thus, an adequate showing of benefit must address procedural as well as substantive issues.

Demonstrating Proportionality. The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case (although the relevance of

that decision to impact fees has been debated) and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related 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.

Methodologies and Credits

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

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

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

Cost Recovery Fee Calculation. The rationale for the cost recovery approach is that new development is paying for its share of the useful life and remaining capacity of facilities already built or land already purchased from which new growth will benefit. This methodology is often used for systems that were oversized such as sewer and water facilities. To calculate a fee using the cost recovery approach, the facility cost is divided by ultimate number of demand units the facility will serve.

Incremental Expansion Fee Calculation. The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as square feet per student). The level of service standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, the fee revenues would not be for renewal and/or replacement of existing facilities. Rather, revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best

suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community. This approach is utilized for this study.

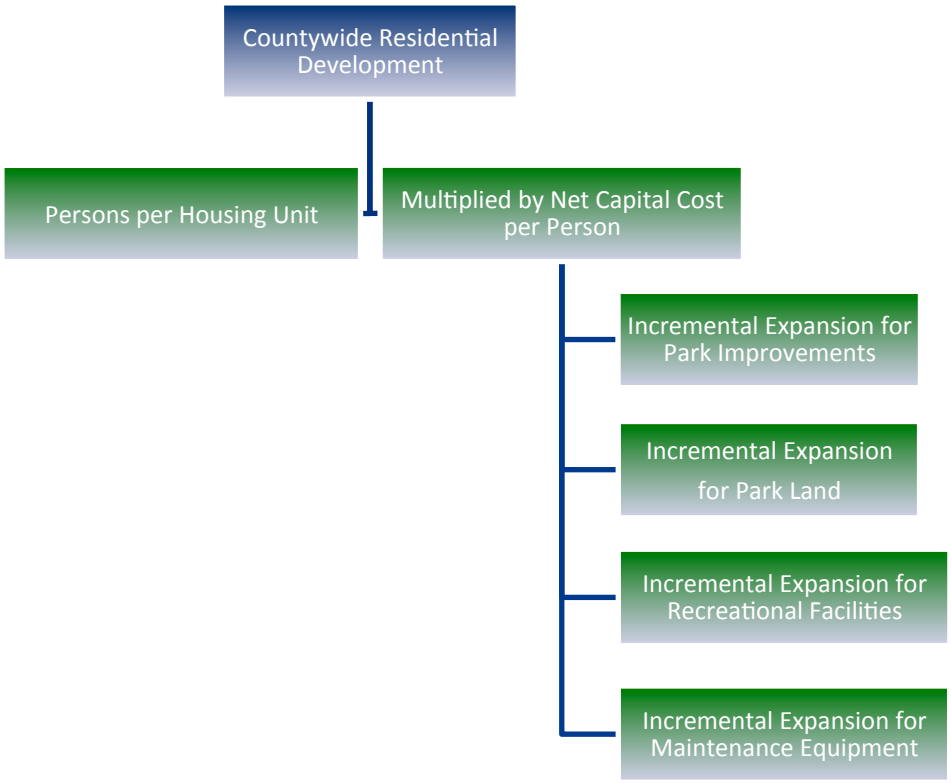
Credits. Regardless of the methodology, a consideration of "credits" is integral to the development of a legally valid impact fee methodology. There are two types of "credits" each with specific, distinct characteristics, but both of which should be addressed in the development of facility fees. The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

PARKS & RECREATION

METHODOLOGY

The incremental expansion method is used to calculate all components of the Parks & Recreation Impact Fee, including park improvements, park land, recreational facilities, and maintenance equipment. The methodology for the parks and recreation impact fee is diagrammed in Figure 4. All cost components are allocated 100% to residential development.

Figure 4. Parks & Recreation Impact Fee Methodology



CAPITAL COSTS PER PERSON

The Parks & Recreation Impact Fee includes components for park improvements, park land, recreational facilities, and maintenance equipment. This section of the report details the current LOS and cost factors which are used in the impact fee calculations.

Park Improvements

Figure 5 displays the inventory of park improvements in Jefferson County.

Figure 5. Parks Improvement Inventory

Improvements	#	*2014 Cost*
Bolivar Nature Park		
Gazebo	1	$32,300
Infrastructure*	1	$2,260
Landscaping	1	$2,150
Nature Trail	1	$1,080
Picnic Tables	3	$3,230
Sign	1	$1,080
Total	**8**	**$42,100**

Improvements	#	*2014 Cost*
Leetown Park		
Concession Stand	1	$52,500
Tennis Courts	2	$100,000
Pavillion	1	$53,840
Softball Fields w/ Lights	2	$90,000
Storage / Dugouts	4	$53,840
Perimeter Fencing	1	$126,000
Playground Equipment	1	$92,259
Horseshoe Pits	1	$1,080
Picnic Tables	6	$6,460
Sign	1	$1,080
Landscaping	1	$6,460
Infrastructure*	1	$107,670
Total	**22**	**$691,189**

Improvements	#	*2014 Cost*
Harvest Hills Park		
Sign	1	$1,080
Total	**1**	**$1,080**

Improvements	#	*2014 Cost*
Heather Marriot Park		
Sign	1	$1,080
Total	**1**	**$1,080**

Improvements	#	*2014 Cost*
Mount Mission Park		
Pavillion/ Kitchen	1	$60,000
Playground Equipment	1	$80,750
Old Church Bldg. (Storage)	1	$220,050
Perimeter Fencing	1	$12,920
Baseball Field	1	$53,840
Picnic Tables	9	$6,460
Sign	1	$1,080
Landscaping	1	$2,260
Horseshoe Pits	1	$1,080
Total	**17**	**$438,440**

Improvements	#	*2014 Cost*
Sam Michaels Park		
Pavillion	1	$175,000
Maintenance Building	1	$192,500
Soccer Field Complex	1	$161,510
Walking Trail	1	$40,931
Pavillion/ Kitchen	2	$50,000
Playground Equipment	2	$59,988
Fencing/ Dog Park	1	$100,000
Stage	1	$50,000
Baseball Field with Lights	3	$333,780
Concession Stand	1	$50,000
Picnic Tables	6	$6,460
Horseshoe Pits	1	$1,080
Volleyball Courts	2	$5,380
Cross Country Tail	1	$32,300
Sign	1	$1,080
Landscaping	1	$3,230
Infrastructure*	1	$3,230,100
Total	**27**	**$4,493,339**

Improvements	#	*2014 Cost*
Moulton Park		
Camping Pads	11	$11,025
Fence	1	$12,920
Boat Ramp	1	$21,530
Parking Lot	1	$21,530
Sign	1	$1,080
Infrastructure*	1	$2,260
Total	**16**	**$70,345**

Improvements	#	*2014 Cost*
South Jefferson Park		
Concession Stand	1	$64,600
Baseball Fields w/ Lights	7	$398,380
Perimeter Fencing	1	$107,670
Maintenance Building	1	$48,450
Basketball Courts	1	$32,300
Tennis Courts	2	$64,600
Volleyball Court	1	$5,380
Playground Equipment	1	$80,750
Picnic Tables	1	$6,460
Sign	1	$1,080
Soccer Field	1	$53,840
Landscaping	1	$3,230
Infrastructure*	1	$107,670
Total	**20**	**$974,410**

Total	**112**	**$6,711,983**

Source: Inventory and costs from 2010 Park & Recreation Impact Fee Study. Costs updated to February 2014 dollars for inflation. Some items and costs were added using "2013 Current Inventory and Acreage of Each Park", provided by Jefferson County Parks and Recreation Commission staff.

*Infrastructure includes site preparation, utilities, parking, and internal road improvements.

A summary of the inventory of park improvements by park is shown in Figure 6. (James Hite Park is not included because there are not any improvements at this point.) In total, there are 112 improvements on 265.17 acres of parks that have a replacement cost of approximately $6,711,983. The level of service is 2.0 improvements per thousand persons, which is found by dividing the number of improvements (112 by the 2014 population (57,012) and multiplying by 1,000. The average cost per improvement is approximately $60,000 (replacement value of $6,536,983 divided by 112 improvements). Multiplying the average cost per improvement ($60,000) by the level of service (2.0 improvements per 1,000) results in a cost per person of $117.87.

Figure 6. Park Improvement LOS Standards

Park	*Acres*	*# of Improvements*	*Total Cost*
Bolivar Nature Park	6.80	8	$42,100
Leetown Park	10.87	22	$691,189
Harvest Hills Park	21.77	1	$1,080
Heather Marriot Park	11.00	1	$1,080
Moulton Park	2.88	16	$70,345
Mount Mission Park	3.50	17	$438,440
Sam Michael's Park	137.24	27	$4,493,339
South Jefferson Park	71.11	20	$974,410
Total	**265.17**	**112**	**$6,711,983**

Average Cost Per Improvement	**$60,000**

Level of Service (LOS) Standards

Total Improvements	112
2014 Jefferson County Population	57,012
Improved Park Acres	265.17
Improved Acres per 1,000 Persons	4.7
LOS: Improvements per 1,000 Persons	**2.0**

Cost Analysis

LOS: Improvements per 1,000 Persons	2.0
Cost per Improvement	$60,000
Improvement Cost per Person	**$117.87**

Park Land

An inventory of parks in Jefferson County is shown in Figure 7. In total, there are 384.90 acres of parks. This results in level of service of 6.8 acres per thousand persons, which is found by dividing the total number of park acres (384.90) by the 2014 Jefferson County population (57,012) and multiplying by 1,000. The cost per acre to purchase land is $10,800. To determine the cost per demand unit, the level of service standard of 6.8 acres per thousand persons is multiplied by the average cost per acre ($10,800) and divided by 1,000 to determine a cost per person of $72.91.

Figure 7. Park Land LOS Standards

Parks	*Total Acres*
Bolivar Nature Park	6.80
Leetown Park	10.87
James Hite Park	119.73
Harvest Hills Park	21.77
Heather Marriot Park	11.00
Moulton Park	2.88
Mount Mission Park	3.50
Sam Michael's Park	137.24
South Jefferson Park	71.11
Total	**384.90**

Source: Jefferson County staff.

Park Cost per Acre[1]	**$10,800**

1. Cost per acre from 2010 Impact Fee Study, updated for inflation.

Level of Service (LOS) Standards

Total Park Acres	385
2014 Jefferson County Population	57,012
LOS: Acres per 1,000 Persons	**6.8**

Cost Analysis

LOS: Acres per 1,000 persons	6.8
Cost per Acre	$10,800
Park Cost per Person	**$72.91**

Recreational Facilities

Jefferson County has one recreational facility, the Jefferson County Community Center, as shown in Figure 8. It is 19,577 square feet, and has a replacement cost of $3,375,000. The level of service is 343.4 square feet per thousand persons, which is found by dividing the total square feet (19,577) by the 2014 population (57,012) and multiplying by 1,000

The cost per square foot ($172) is multiplied by the level of service (343.4 square feet per 1,000 persons) and divided by 1,000 to yield a cost per person of $59.20.

Figure 8. Recreational Facility LOS Standards

Recreational Facility	*Sq Ft*	*Cost*	*Cost per Sq Ft*
Jefferson County Community Center (Sam Michaels Park)	19,577	$3,375,000	$172

Level of Service (LOS) Standards	
Total Square Feet	19,577
2014 Jefferson County Population	57,012
LOS: Square Feet per 1,000 Persons	**343.4**

Cost Analysis	
LOS: Square Feet per 1,000 Persons	343.38
Cost per Square Foot	$172
Recreational Facility Cost per Person	**$59.20**

Maintenance Equipment

Figure 9 displays the inventory of parks and recreation maintenance equipment. There are 21 units of maintenance equipment which have a replacement cost of $344,265. The level of service is 0.4 units per thousand persons, which is found by dividing the total number of units (21) by the 2014 Jefferson County population (57,012) and multiplying by 1,000. The average cost per unit of maintenance equipment is $16,000. To determine the cost per demand unit, the level of service standard of 0.4 units per 1,000 persons is multiplied by the average cost per piece of maintenance equipment ($16,000) and divided by 1,000, for a cost per person of $5.89.

Figure 9. Maintenance Equipment LOS Standards

Item	*#*	*Total Cost*
Dump Truck	1	$50,000
Pick-Up Truck	4	$160,765
Scag Mowers	6	$53,000
Tractors	6	$59,500
Trailers	3	$11,000
Miscellaneous Tools	1	$10,000
Total	**21**	**$344,265**

Source: Jefferson County Parks and Recreation Commission.

Average Cost per Unit	**$16,000**
Level of Service (LOS) Standards	
Total Maintenance Equipment Units	21
2014 Jefferson County Population	57,012
LOS: Units per 1,000 Persons	**0.4**
Cost Analysis	
LOS: Units per 1,000 Persons	0.4
Cost per Piece of Maintenance Equipment	$16,000
Maintenance Equipment Unit Cost per Person	**$5.89**

PROJECTED NEED FOR PARK INFRASTRUCTURE

The need for additional parks and recreation infrastructure, based on projected population growth over the next six years and level of service standards as discussed above, is shown in Figure 10. Level of service standards and costs for park improvements and maintenance equipment are shown in Figure 10. Over the next six years, it is projected that Jefferson County will spend about $669,000 on 11 park improvements, $414,000 on 38 acres of parks, $336,000 on 1,950 square feet of recreational facilities and $33,000 on 2 maintenance equipment units. The projected demand for parks and recreation infrastructure totals approximately $1.45 million.

Figure 10. Parks & Recreation Projected Growth Needs

	Park Improvements		Park Land		Recreational Facilities		Maintenace Equipment	
LOS	2.0	improvements per 1,000 persons	6.8	acres per 1,000 persons	343.4	square feet per 1,000 persons	0.4	units per 1,000 persons
Cost	$60,000	per improvement	$10,800	per acre	$172	per square foot	$16,000	per unit

		Projected Demand				
		Persons	Park Improvements	Park Land (acres)	Recreational Facilities (sq ft)	Maintenace Equipment (units)
Base	2014	57,012	112	385	19,577	21
1	2015	57,891	114	391	19,879	21
2	2016	58,851	116	397	20,208	22
3	2017	59,811	117	404	20,538	22
4	2018	60,771	119	410	20,868	22
5	2019	61,731	121	417	21,197	23
6	2020	62,691	123	423	21,527	23
6-Yr Total		**5,679**	**11**	**38**	**1,950**	**2**
Cost of Park Improvements			$669,000			
Cost of Park Land				$414,000		
Cost of Recreational Facilities					$336,000	
Cost of Maintenance Equipment						$33,000
Total Cost						**$1,452,000**

IMPACT FEE CONSULTANT STUDY COST

The cost of preparing the Parks & Recreation Impact Fee is also included in the fee calculations. This cost ($12,340) is allocated to the projected increase in persons over the next five years (4,719). On average, the County updates its impact fee methodologies and components every five years. This results in a consultant cost per demand unit of $2.62 per person ($12,340 / 4,719 persons = $2.62 per person.)

PROPOSED IMPACT FEES FOR PARKS & RECREATION

Infrastructure standards used in the Parks & Recreation Impact Fee calculations are listed at the top of Figure 11. The net capital cost for Parks & Recreation is $258.49 for each resident added to Jefferson County. Impact fees per unit are derived by multiplying persons per housing unit by the total infrastructure cost per person. Therefore, the impact fee for a single unit is $625 (2.42 persons per housing unit X $258.49 infrastructure cost per person = $625).

Figure 11. Proposed Parks & Recreation Impact Fees

Cost per Person	
Improvements	$117.87
Parks	$72.91
Recreational Facilities	$59.20
Vehicles and Equipment	$5.89
Consultant Cost	$2.62
Net Cost per Person	**$258.49**

Residential (per housing unit)	*Land Use Assumptions Category*	*Persons per Housing Unit*	***Proposed Fee***	*Current Fee*	*Increase (Decrease)*	*% Change*
Single Unit (Single-Family, Townhouse & Mobile Home)	*Single Unit*	2.42	**$625**	$752	($127)	-17%
Duplex	*2+ Units*	1.78	**$460**	$575	($115)	-20%
Multi-Family (Apartments & Condos)	*2+ Units*	1.78	**$460**	$566	($106)	-19%

LAW ENFORCEMENT

METHODOLOGY

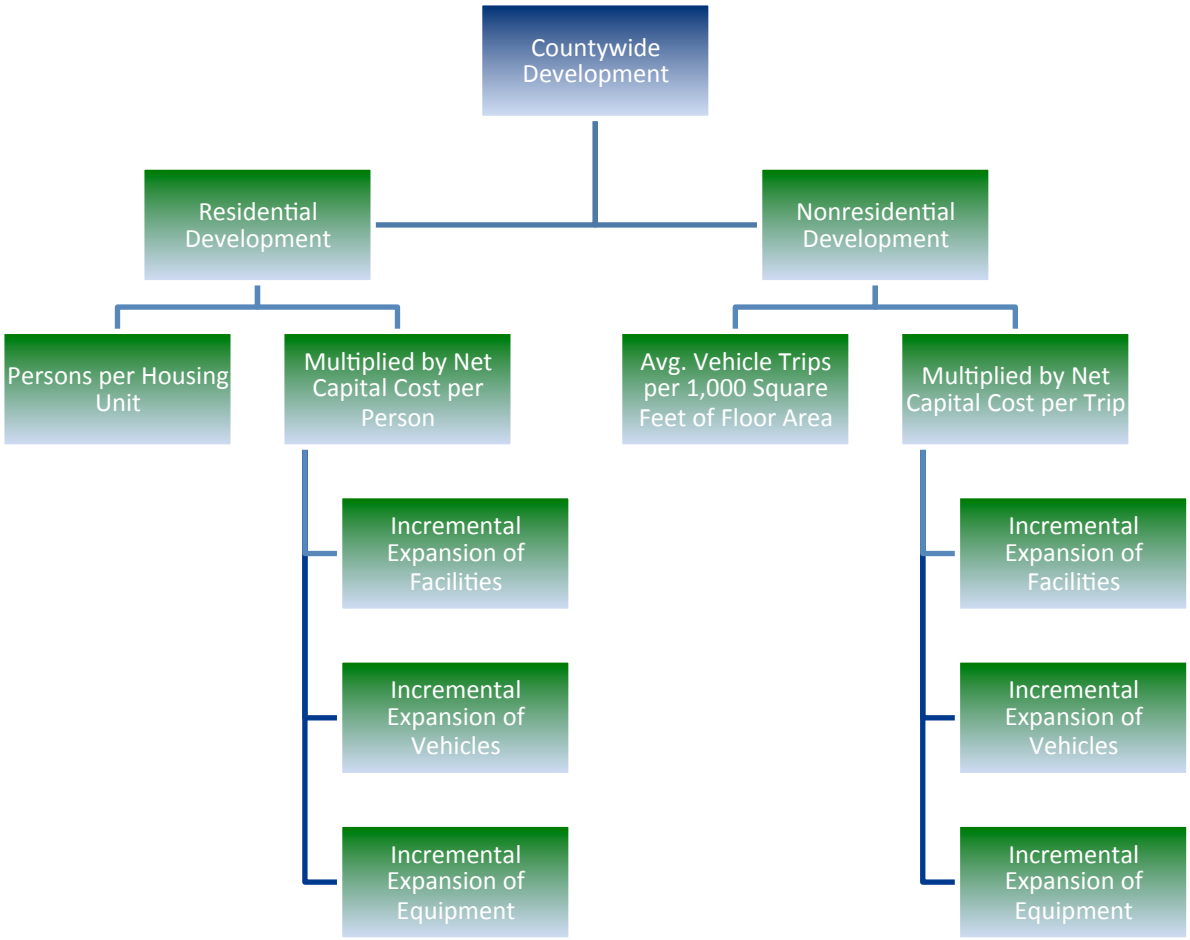
The Law Enforcement impact fee for Jefferson County utilizes an incremental expansion methodology, with infrastructure costs allocated to both residential and nonresidential development based on a functional population analysis (discussed in Figure 12). The methodology for the Law Enforcement Impact Fee is diagrammed in Figure 12. For residential development, Law Enforcement Impact Fees are a function of population growth.

For nonresidential impact fees, TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for police facilities and equipment. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for public safety from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, police impact fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, police impact fees would be too high for industrial development.

Average weekday vehicle trip ends are from the reference book, Trip Generation (Ninth Edition, 2012), published by the Institute of Transportation Engineers (ITE). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points—thereby allocating the trip to the appropriate land use.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial. For commercial/shopping center development, the trip adjustment factor is less than 50 percent because retail uses attract 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 an average size shopping center, the ITE manual indicates that on average 25 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 75 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 75 percent multiplied by 50 percent, or approximately 38 percent of the trip ends.

Figure 12. Law Enforcement Impact Fee Methodology



PROPORTIONATE SHARE

In Jefferson County development fees are based on both residential and nonresidential development. As shown in Figure 13, functional population was used to allocate law enforcement costs to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population" by accounting for people living and working in a jurisdiction. Residents that don't work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents that work in Jefferson County are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2011 functional population data for Jefferson County the cost allocation for residential development is 77% while nonresidential development accounts for 23% of the demand for law enforcement infrastructure.

Figure 13. Functional Population

	Service Units in 2011			*Demand Hours/Day*	*Person Hours*
Residential					
	Population*	54,377			
57%	Residents Not Working	30,901		20	618,012
43%	Resident Workers**	23,476			
30%	Worked in County**		6,987	14	97,818
70%	Worked Outside County**		16,489	14	230,846
			Residential Subtotal		946,676
			Residential Share =>		**77%**
Nonresidential					
	Non-working Residents	30,901		4	123,602
	Jobs Located in County**	15,420			
	Residents Working in County**		6,987	10	69,870
	Non-Resident Workers (inflow commuters)		8,433	10	84,330
			Nonresidential Subtotal		277,802
			Nonresidential Share =>		**23%**
			TOTAL		1,224,478

Source: Inflow/Outflow Analysis, OnTheMap web application, US Cenusus Bureau data for all jobs.

CAPITAL COSTS PER PERSON

The Law Enforcement Impact Fee includes components for facilities, vehicles, and equipment. This section of the report details the current LOS and cost factors which are used in the impact fee calculations.

Facilities

An inventory of law enforcement facilities in Jefferson County is shown in Figure 14. In total, there are 16,000 square feet of facilities devoted to law enforcement. The current residential level of service is derived by multiplying the total square footage of law enforcement facilities (16,000) by the residential proportionate share factor (77%) and dividing by the total population (16,000 X 77% / 57,012) resulting in .22 sq. ft. per person. Similarly, nonresidential level of service is derived by multiplying total square footage by the nonresidential proportionate share and dividing by total average weekday vehicle trips (16,000 X 23% / 57,894) resulting in .06 sq. ft. per trip.

The cost per demand unit is derived using the average replacement cost per square foot ($251) and existing levels of service discussed above. For residential development, the cost per person is $54.24 (0.22 square feet per person X $251 per square foot). The cost per average weekday vehicle trip for nonresidential development is $15.95 (0.06 square feet per vehicle trip X $251 per square foot).

Revenues from the facilities component of the law enforcement impact fees will likely be used to expand evidence storage, training space, and the firing range.

Figure 14. Law Enforcement Facility LOS Standards

	Square Feet	*Cost per Sq Ft*[1]	*Total Cost*
Sheriff's Building - Bardane	15,000	$260	$3,900,000
Blue Ridge Community Facility	1,000	$120	$120,000
Total	**16,000**		**$4,020,000**

Average Cost per Sq Ft	**$251**

Source: Jefferson County Sheriff's Department. 2010 Law Enforcement Impact Fee Study.
1. Costs used in 2010 Law Enforcement Impact Fee Study, updated in May 2011, were updated for inflation to show February 2014 costs. Sheriff's Building includes total acquisition and construction costs.

Level of Service (LOS) Standards	Residential		Nonresidential	
Proportionate Share	77%		23%	
2014 Demand Units	57,012	persons	57,894	trips
Level of Service	**0.22**	**sq ft per person**	**0.06**	**sq ft per trip**
Facility Cost per Demand Unit	**$54.24**	**per person**	**$15.95**	**per trip**

Vehicles

An inventory of law enforcement vehicles in Jefferson County is shown in Figure 15. In total, there are 51 law enforcement vehicles. This results in a residential level of service of 0.0007 vehicles per person, which is found by multiplying the total number of vehicles (51) by the residential proportionate share factor (77%) and then dividing by the 2014 Jefferson County population (57,012). The nonresidential level of service is 0.0002 vehicles per nonresidential vehicle trip, which is found by multiplying the number of vehicles (51) by the nonresidential proportionate share factor (23%) and then dividing by the current average weekday trips to nonresidential development (57,894) in 2014.

The cost per demand unit is derived using the average replacement cost per vehicle ($54,000) and existing levels of service discussed above. For residential development, the cost per person is $37.20 (0.0007 vehicles per person X $54,000 per vehicle). The cost per average weekday vehicle trip for nonresidential development is $10.94 (0.0002 vehicles per nonresidential trip X $54,000 per vehicle).

Figure 15. Law Enforcement Vehicle LOS Standards

Vehicle	*#*	*Replacement Cost*	*Total Cost*
Ford Crown Victoria	31	$57,300	$1,776,300
Ford Explorer	9	$54,800	$493,200
Jeep Cherokee	3	$56,460	$169,380
Chevrolet Motorhome	1	$161,050	$161,050
BMW 5401	1	$6,750	$6,750
Buick LeSabre	1	$5,200	$5,200
Chrysler Concorde	1	$3,120	$3,120
Ford Taurus	1	$48,880	$48,880
Dodge Durango	3	$28,110	$84,330
Total	**51**		**$2,748,210**

Average Cost per Vehicle	**$54,000**

Source: Jefferson County Sheriff's Department. 2010 Law Enforcement Impact Fee Study.
show February 2014 costs. Costs are insurance estimate of replacement cost.

Level of Service (LOS) Standards	Residential		Nonresidential	
Proportionate Share	77%		23%	
2014 Demand Units	57,012	persons	57,894	trips
Level of Service	**0.0007**	**vehicles per person**	**0.0002**	**vehicles per trip**
Vehicle Cost per Demand Unit	**$37.20**	**per person**	**$10.94**	**per trip**

Equipment

An inventory of law enforcement equipment in Jefferson County is shown in Figure 16. In total, there are 6 units of equipment. This results in a residential level of service of 0.00008 units per person, which is found by multiplying the total number of units (6) by the residential proportionate share factor (77%) and then dividing by the 2014 Jefferson County population (57,012). The nonresidential level of service is 0.000024 units per nonresidential vehicle trip, which is found by multiplying the number of units (6) by the nonresidential proportionate share factor (23%) and dividing by the current number of average nonresidential weekday trips (57,894) in 2014. According to information provided by the County, the average cost of a law enforcement equipment unit is $25,000.

The cost per demand unit is derived using the average cost per unit of equipment ($25,000) and existing levels of service discussed above. For residential development, the cost per person is $2.14 (0.00008 equipment units per person X $25,000 per unit). The cost per average weekday vehicle trip for nonresidential development is $0.60 (0.000024 equipment units per nonresidential trip X $25,000 per unit).

Figure 16. Law Enforcement Equipment LOS Standards

Equipment	*#*	*Cost per Unit**	*Total Cost*
Traffic Monitoring Camera	6	$25,000	$150,000
Total	**6**		**$150,000**

Average Cost per Unit	**$25,000**

Source: Jefferson County Sheriff's Department. 2010 Law Enforcement Impact Fee Study.
*Costs used in 2010 Law Enforcement Impact Fee Study, updated in May 2011, were updated for inflation to show February 2014 costs. Cost provided by vendor.

Level of Service (LOS) Standards	Residential		Nonresidential	
Proportionate Share	77%		23%	
2014 Demand Units	57,012	persons	57,894	trips
Level of Service	**0.00008**	**units per person**	**0.000024**	**units per vehicle trip**
Equipment Cost per Demand Unit	**$2.14**	**per person**	**$0.60**	**per trip**

PROJECTED NEED FOR LAW ENFORCEMENT INFRASTRUCTURE

The need for additional law enforcement infrastructure, based on projected population growth over the next six years and level of service standards as discussed above, is shown in Figure 17. Level of service standards and costs for law enforcement facilities, vehicles, and equipment are shown in Figure 17. Over the next six years, it is projected that Jefferson County will spend about $365,000 on 1,455 square feet of law enforcement facilities, $250,000 on 5 law enforcement vehicles, and $14,000 on a portion of one equipment unit. The projected demand for law enforcement infrastructure totals approximately $629,000.

Figure 17. Projected Growth Needs

	Facilities		Vehicles		Equipment	
Res LOS	0.2	sq ft per person	0.0007	vehicles per person	0.00008	units per person
Nonres LOS	0.1	sq ft per trip	0.0002	vehicles per nonres vehicle trip	0.00002	units per nonres vehicle trip
Cost	$251	per sq ft	$54,000	per vehicle	$25,000	per unit

		Projected Demand				
		Persons	*Trips*	*Facilities (square feet)*	*Vehicles*	*Equipment*
Base	2014	57,012	57,894	16,000	51	6
1	2015	57,891	58,491	16,228	52	6
2	2016	58,851	59,088	16,473	53	6
3	2017	59,811	59,685	16,719	53	6
4	2018	60,771	60,283	16,964	54	6
5	2019	61,731	60,880	17,209	55	6
6	2020	62,691	61,477	17,455	56	7
6-Yr Total		**5,679**	**3,583**	**1,455**	**5**	**0.5**
Cost of Facilities				$365,000		
Cost of Vehicles					$250,000	
Cost of Equipment						$14,000
Total Cost						**$629,000**

IMPACT FEE CONSULTANT STUDY COST

The cost of preparing the Law Enforcement Impact Fee is also included in the fee calculations. This cost ($9,340) is divided between residential and nonresidential development using the proportionate shares discussed above (77% and 23%), and allocated to the five-year projected increase in persons (4,719) and trips (2,986). On average, the County updates its impact fee methodologies and components every five years. This results in a consultant cost per person of $1.52 ($9,340 * 77% / 4,719 persons = $1.52 per person). The consultant cost per trip is $0.72 ($9,340 * 23% / 2,986 = $0.72 per trip).

PROPOSED IMPACT FEES FOR LAW ENFORCEMENT

Proposed law enforcement impact fees are shown in Figure 18. For residential development, law enforcement impact fees are based on unit type and persons per housing unit. For example, the

proposed law enforcement fee for single unit housing units is $230 per unit (2.42 persons per housing unit x $95.10 net cost per person = $230 (truncated)). For nonresidential development, the fees are expressed per thousand square feet (KSF) of floor area.

Figure 18. Proposed Law Enforcement Impact Fees

Cost per Person	
Facilities	$54.24
Vehicles	$37.20
Equipment	$2.14
Professional Services	$1.52
Net Cost per Demand Unit	**$95.10**

Residential Development Fees per Housing Unit

Residential (per housing unit)	*Land Use Assumptions Category*	*Persons per Housing Unit*	***Proposed Fee***	*Current Fee*	*Increase (Decrease)*	*% Change*
Single Unit (Single-Family, Townhouse & Mobile Home)	*Single Unit*	2.42	**$230**	$262	($32)	-12%
Duplex	*2+ Units*	1.78	**$169**	$200	($31)	-16%
Multi-Family (Apartments & Condos)	*2+ Units*	1.78	**$169**	$197	($28)	-14%

Cost per Trip	
Facilities	$15.95
Vehicles	$10.94
Equipment	$0.60
Professional Services	$0.72
Net Cost per Demand Unit	**$28.22**

Nonresidential Development Fees per 1,000 Square Feet of Floor Area

Development Type	*Inbound Vehicle Trips*	***Proposed Fee***	*Current Fee**	*Increase (Decrease)*	*% Change*
Commercial*	14.09	**$397**	$101	$296	292%
Office/ Institutional*	5.52	**$155**	$42	$113	273%
Business Park	6.22	**$175**	$33	$142	430%
Light Industrial	3.49	**$98**	$18	$80	444%
Warehousing	1.78	**$50**	$13	$37	285%
Manufacturing	1.91	**$53**	$10	$43	430%

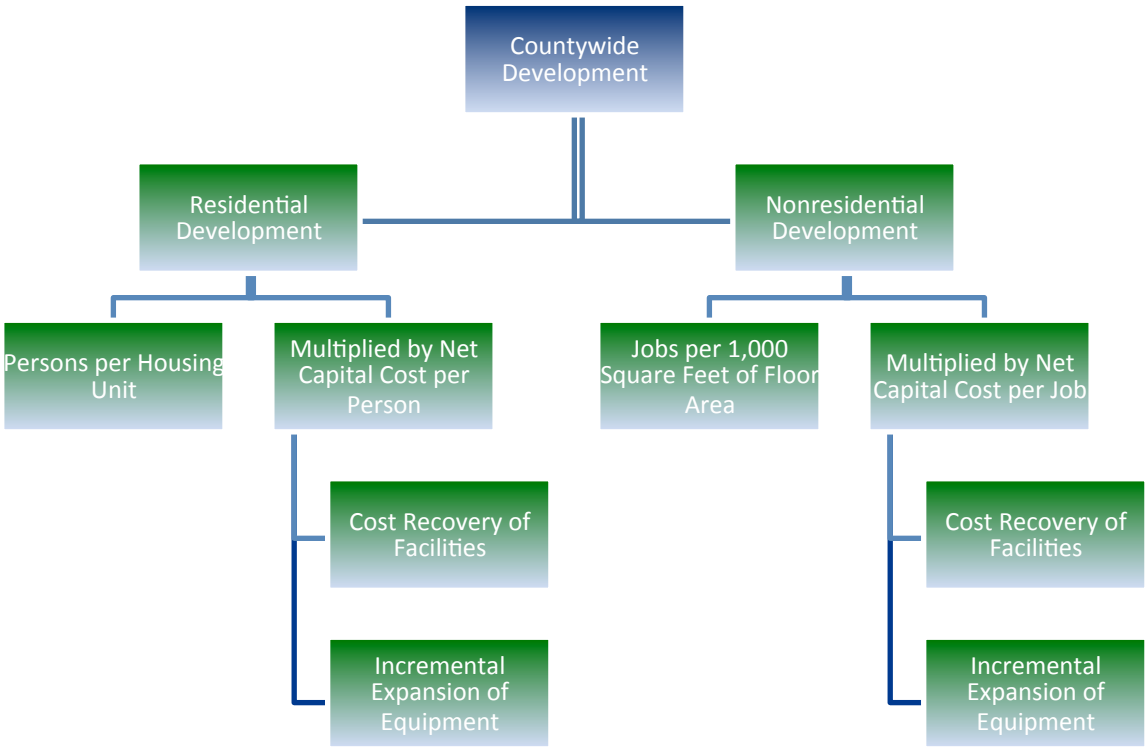
*Nonresidential fees are averages of floor areas for each land use type.

EMS

METHODOLOGY

Jefferson County provides emergency medical services to its residents and businesses through the Jefferson County Emergency Services Agency. Since the Emergency Services Agency (ESA) is the only entity that is entirely funded by County taxpayers, the EMS impact fee is limited to ESA assets. The EMS impact fee for Jefferson County utilizes an incremental expansion approach for equipment and a cost recovery approach for facilities, with infrastructure costs allocated to both residential and nonresidential development based on an analysis functional population. The formula for the EMS impact fee is diagrammed in Figure 19. For residential development, EMS impact fees are a function of population growth. EMS impact fees for nonresidential development are based on the estimated number of employees per 1,000 square feet of floor area.

Figure 19. EMS Impact Fee Methodology



PROPORTIONATE SHARE

In Jefferson County development fees are based on both residential and nonresidential development. As shown in Figure 20, functional population was used to allocate EMS (as well as law enforcement) costs to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls “daytime population” by accounting for people living and working in a jurisdiction.

Residents that don't work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents that work in Jefferson County are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2011 functional population data for Jefferson County the cost allocation for residential development is 77% while nonresidential development accounts for 23% of the demand for EMS infrastructure.

Figure 20. Functional Population

	Service Units in 2011			*Demand Hours/Day*	*Person Hours*
Residential					
	Population*	54,377			
57%	Residents Not Working	30,901		20	618,012
43%	Resident Workers**	23,476			
30%	Worked in County**		6,987	14	97,818
70%	Worked Outside County**		16,489	14	230,846
			Residential Subtotal		946,676
			Residential Share =>		**77%**
Nonresidential					
	Non-working Residents	30,901		4	123,602
	Jobs Located in County**	15,420			
	Residents Working in County**		6,987	10	69,870
	Non-Resident Workers (inflow commuters)		8,433	10	84,330
			Nonresidential Subtotal		277,802
			Nonresidential Share =>		**23%**
			TOTAL		1,224,478

Source: Inflow/Outflow Analysis, OnTheMap web application, US Cenusus Bureau data for all jobs.

CAPITAL COSTS PER PERSON

The EMS Impact Fee includes components for facilities and equipment. This section of the report details the current LOS and cost factors that are used in the impact fee calculations.

Facilities

The cost recovery of existing debt for the EMS facility is shown in Figure 21. The remaining principal and interest owed on the 2009 USDA loan is $1,970,124. Of this amount, $520,328 can be attributed to population and job growth (Remaining Principal and Interest x Growth Share). The population increase and job increase are derived by finding the difference between the 2014 population and jobs estimate and the 2039 (payoff of loan) population and jobs estimates.

The cost per demand unit is derived using the proportionate share, with the inclusion of the growth cost and the population or jobs increase. For residential development, the cost per person is $18.74 (77% proportionate share X $520,328 growth cost / 21,379 population increase). The cost per average job for nonresidential development is $25.45 (23% proportionate share X $520,328 growth cost / 4,702 job increase).

Figure 21. EMS Facility Cost Recovery

Year of Debt Obligation	Name of Debt Obligation	Growth Share*	Year of Final Payment	Remaining Principal and Interest	Growth Cost	Population Increase	Job Increase
2009	USDA Loan	26.4%	2039	$1,970,124	$520,328	21,379	4,702

Six-Year Growth Cost => $128,300

* Growth share formula is 1-((population & Jobs in 2014)/(population & jobs in 2039))

Cost Allocation		
	Share	*USDA Loan*
Residential (per person)	77%	$18.74
Nonresidential (per job)	23%	$25.45

Equipment

Figure 22 displays the inventory of EMS equipment in Jefferson County.

Figure 22. EMS Equipment Inventory

Jefferson County Emergency Services Agency		
Lifepack Heart Monitors	3	$81,000
Zoll Autopulse CPR Units	3	$52,000
Veh 11 - Drector	1	$54,000
Veh 11 - ALS Chase	2	$108,000
MCU 11 GMC Truck	1	$45,000
Ambulance 11	1	$135,000
Reserve 11	1	$135,000
Total	**12**	**$610,000**

Total	**12**	**610,000**

Source: Jefferson County, WV Emergency Services Agency.

A summary of the EMS equipment inventory is shown in Figure 23. As shown below, there are 12 units of EMS equipment. This results in a residential level of service of 0.0002 units per person, which is found by multiplying the total number of equipment units (12) by the residential proportionate share factor (77%) and then dividing by the 2014 Jefferson County population (12 X 77% / 57,012). The nonresidential level of service is 0.0002 vehicles per job, which is found by multiplying the number of equipment units (12) by the nonresidential proportionate share factor (23%) and then dividing by the current number of jobs (12 X 23% / 15,657) in 2014.

The cost per demand unit is derived using the average replacement cost per unit ($51,000) and existing levels of service discussed above. For residential development, the cost per person is $8.27 (0.0002 units per person X $51,000 per unit). The cost per average job for nonresidential development is $8.99 (.0002 vehicles per job X $51,000 per unit).

Figure 23. EMS Equipment LOS Standards

Company	*# of Units*	*Total Cost*
Jeff Co Emergency Services Agency	12	$610,000
Total	**12**	**$610,000**

Average Cost Per Unit	**$51,000**

Level of Service (LOS) Standards	Residential		Nonresidential	
Proportionate Share	77%		23%	
2014 Demand Units	57,012	persons	15,657	jobs
Level of Service	**0.0002**	**units per**	**0.0002**	**units per**
Equipment Cost per Demand Unit	**$8.27**	**per person**	**$8.99**	**per job**

PROJECTED NEED FOR EMS INFRASTRUCTURE

The need for additional EMS infrastructure, based on projected population growth over the next six years and level of service standards as discussed above, is shown in Figure 24. Level of service standards and costs for EMS equipment are shown in Figure 24.

Over the next six years, it is projected that Jefferson County will need to spend approximately $57,000 on 1 unit of equipment. The projected demand for EMS infrastructure totals approximately $57,000.

Figure 24. EMS Projected Growth Needs

		Equipment	
Res LOS		0.0002	units per person
Nonres LOS		0.0002	units per job
Cost		$51,000	per unit

		Projected Demand		
		Persons	*Jobs*	Equipment Units
Base	2014	57,012	15,657	12
1	2015	57,891	15,845	12
2	2016	58,851	16,033	12
3	2017	59,811	16,221	13
4	2018	60,771	16,409	13
5	2019	61,731	16,597	13
6	2020	62,691	16,785	13
6-Yr Total		**5,679**	**1,128**	**1.1**
Cost of Equipment				$57,000
Total Cost				**$57,000**

IMPACT FEE CONSULTANT STUDY COST

The cost of preparing the EMS Impact Fee is also included in the fee calculations. This cost ($11,140) is divided between residential and nonresidential development using the proportionate shares discussed above (77% and 23%), and allocated to the six-year projected increase in persons (4,719) and jobs (940). On average, the County updates its impact fee methodologies and components every five years. This results in a consultant cost per person of $1.82 ($11,140 * 77% / 4,719 persons = $1.82 per person). The consultant cost per job is $2.72 ($11,140 * 23% / 940 = $2.72 per trip).

PROPOSED IMPACT FEES FOR EMS

Proposed EMS Impact Fees are shown in Figure 25. For residential development, EMS Impact Fees are based on unit type and persons per housing unit. For example, the proposed EMS Impact Fee for single unit housing units is $69 per unit (2.42 persons per housing unit x $28.82 net cost per person = $69 (truncated)). For nonresidential development, the fees are expressed per thousand square feet (KSF) of floor area.

Figure 25. Proposed EMS Impact Fees

Cost per Person	
Facilities	$18.74
Equipment	$8.27
Professional Services	$1.82
Net Cost per Demand Unit	**$28.82**

Residential Development Fees per Housing Unit

Residential (per housing unit)	*Land Use Assumptions Category*	*Persons per Housing Unit*	***Proposed Fee***	*Current Fee*	*Increase (Decrease)*	*% Change*
Single Unit (Single-Family, Townhouse & Mobile Home)	*Single Unit*	2.42	**$69**	$698	($629)	-90%
Duplex	*2+ Units*	1.78	**$51**	$533	($482)	-90%
Multi-Family (Apartments & Condos)	*2+ Units*	1.78	**$51**	$525	($474)	-90%

Cost per Job	
Facilities	$25.45
Equipment	$8.99
Professional Services	$2.72
Net Cost per Demand Unit	**$37.17**

Nonresidential Development Fees per 1,000 Square Feet of Floor Area

Development Type	*Employees per 1,000 sq ft*	***Proposed Fee***	*Current Fee**	*Increase (Decrease)*	*% Change*
Commercial*	2.00	**$74**	$1,903	($1,829)	-96%
Office/ Institutional*	3.32	**$123**	$776	($653)	-84%
Business Park	3.08	**$114**	$618	($504)	-82%
Light Industrial	2.31	**$85**	$338	($253)	-75%
Warehousing	0.92	**$34**	$240	($206)	-86%
Manufacturing	1.79	**$66**	$185	($119)	-64%

*Nonresidential fees are averages of floor areas for each land use type.

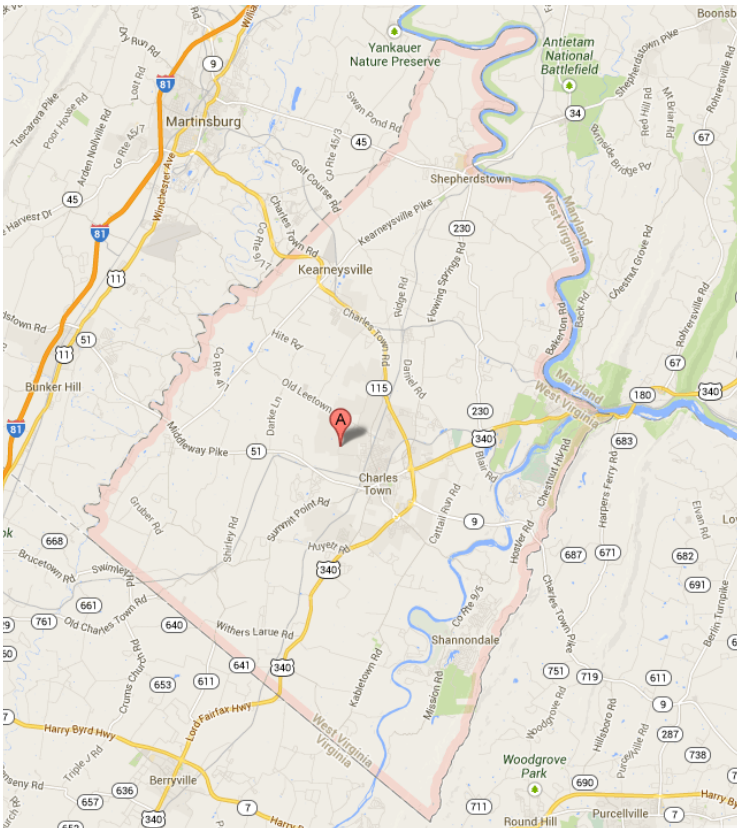
APPENDIX A: LAND USE ASSUMPTIONS

INTRODUCTION

Service Area

The estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for areas within the boundaries of Jefferson County. The map below illustrates the area within the County's boundaries.

Figure A1. Map of Jefferson County Service Area



Summary of Growth Indicators

TischlerBise has prepared this *Land Use Assumptions* document which details current demographic ***estimates*** and future development ***projections*** for both residential and nonresidential development that will be used in the calculation of the impact fees. The development projections are used for calculating the level of service to be provided to future development by planned capital projects or existing infrastructure that was oversized in anticipation of new development. The development projections are also used in forecasting the amount and cost of infrastructure required by new development that will be documented in the cash flow analysis.

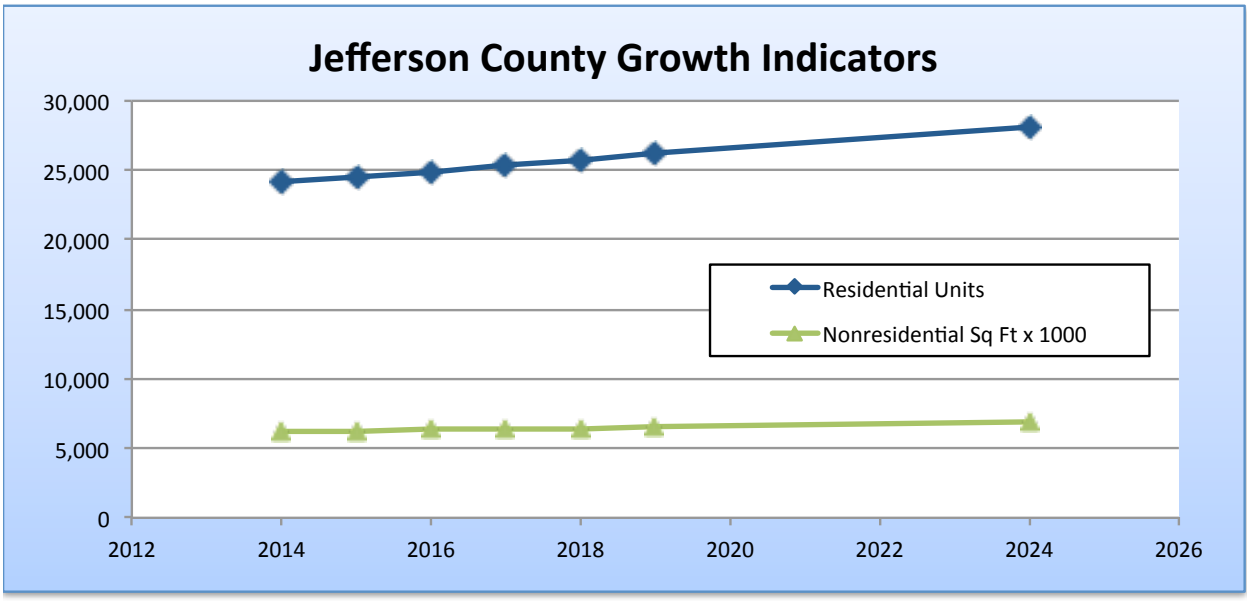
Impact fee methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, impact fee revenues will also decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the County will receive an increase in impact fee revenue, but will also need to accelerate the capital improvements program to keep pace with development.

Development projections and growth rates are summarized in Figure A2. Jefferson County specific base data for the demographic analysis and development projections include 2010 Census calculations of population and housing units and American Community Survey tables. The projected increase in population is based on projections for Jefferson County made by West Virginia University. Projected population was converted to housing units using the 2011 average of 2.36 year-round residents per housing unit. For housing units, the impact fee study assumes a compound annual growth rate of 1.6% for the first ten years.

The projected increase nonresidential floor area is based on conversations with the Jefferson County Development Authority. Projected nonresidential square footage within Jefferson County was converted to jobs using average square-feet-per-employee multipliers provided by the Institute of Transportation Engineers. For nonresidential development, the impact fee study assumes a compound annual growth rate of 1.1%.

Figure A2. Development Projections and Growth Rates

	2014	2015	2016	2017	2018	2019	2024	2014 to 2024 Average Annual Increase	2014 to 2024 Average Annual Compound Growth Rate
Residential Units[1,2]	24,158	24,530	24,937	25,344	25,750	26,157	28,050	389	1.5%
Nonresidential Sq Ft x 1000[3]	6,167	6,237	6,307	6,377	6,447	6,517	6,867	70	1.1%



1. WVU College of Business and Economics Projected Population for Jefferson County 2000-2035.
2. 2010 Census and 2010-2012 ACS.
3. OnTheMap web application, U.S. Census Bureau, 2011.

RESIDENTIAL DEVELOPMENT

Current estimates and future projections of residential development are detailed in this section, including housing units by type and population.

Current Estimates of Residential Development

The 2010 census did not obtain detailed information using a "long-form" questionnaire. Instead, the U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS) which is limited by sample-size constraints in areas with relatively few residents. For counties like Jefferson County, data on detached housing units are now combined with attached single units (commonly known as townhouses).

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Impact fees often use per capita standards and persons per housing unit or persons per

household to derive proportionate-share fee amounts. When persons per housing unit are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that impact fees for residential development in Jefferson County be imposed according to the number of year-round residents per housing unit.

Census data indicates that County had 22,037 housing units and 52,107 persons not in group quarters in 2010. As shown in Figure A3, in 2010, dwellings with a single unit per structure (detached, attached, and mobile homes) averaged 2.42 persons per housing unit. Dwellings in structures with multiple units (including structures with two or more units, boats, RVs, and vans) averaged 1.78 year-round residents per unit.

Figure A3. Person per Housing Unit by Type of Housing Unit

2010-2012 American Community Survey

Type	Persons	Households	Housing Units
Single Unit[1]	49,623	18,059	20,376
2+ Units[2]	3,197	1,622	1,786
TOTAL	**52,820**	**19,681**	**22,162**

1. Single Unit includes detached, attached, and mobile homes.

2. 2+ Units includes boats, vans and RVs.

Source: Tables B25024, B25032, and B25033.

2010-2012 American Community Survey, U.S. Census Bureau.

2010 Census

Type	Persons	Households	Housing Units	Persons per Housing Unit
Single Unit[1]	48,953	18,288	20,261	**2.42**
2+ Units[2]	3,154	1,643	1,776	**1.78**
Subtotal	52,107	19,931	22,037	**2.36**
Group Quarters	1,391			
TOTAL	**53,498**	**19,931**	**22,037**	

1. Single Unit includes detached, attached, and mobile homes.

2. 2+ Units includes boats, vans and RVs.

Source: Totals from Summary File 1, U.S. Census.

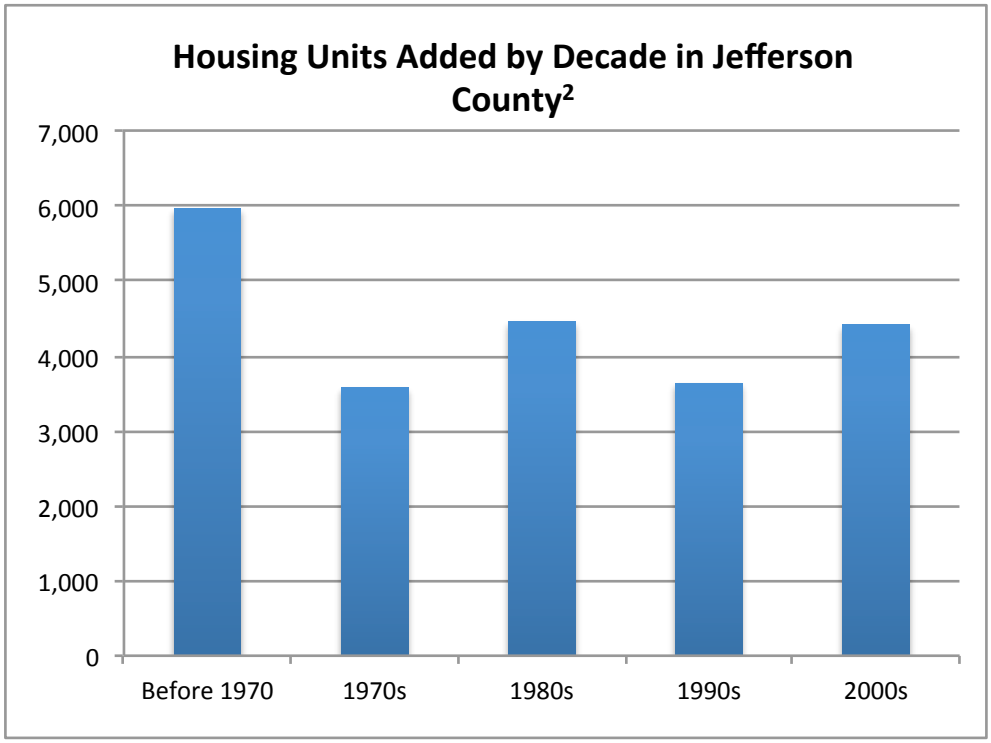
Recent Residential Construction

From 2000-2010 the number of housing units in Jefferson County has increased by an average of 441 units per year. The chart at the bottom of Figure A4 indicates the estimated number of housing units added by decade in Jefferson County.

Figure A4. Housing Units by Decade

2010 Population[1]	53,498
2010 Housing Units[1]	22,037
Total Housing Units in 2000[1]	17,623
New Housing Units	4,414

From 2000 to 2010, Jefferson County added an average of 441 housing units per year.



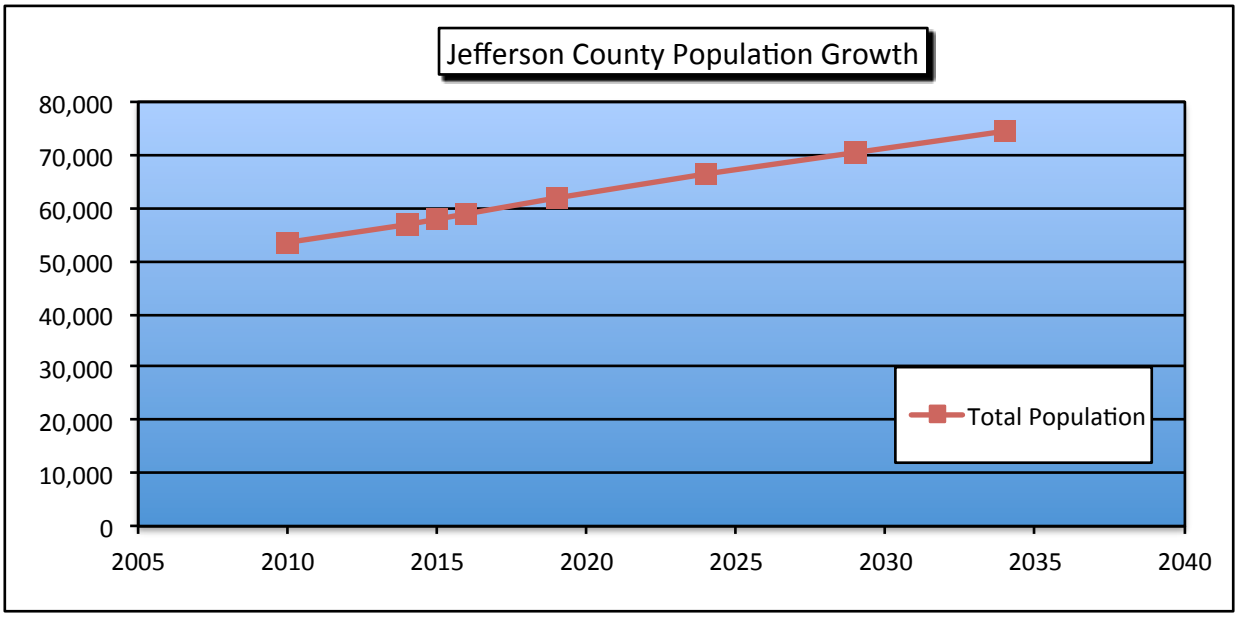
1. Census SF1.
2. Source for 1990s and earlier is Table B25034, American Community Survey (2009-2011) scaled to equal total housing units in 2000.

Residential Development Forecast

Figure A5 displays total population projections (including persons in group quarters) for Jefferson County made by the West Virginia University College of Business and Economics. The projections assume a growth rate of 1.6% from 2012 to 2020, a growth rate of 1.3% from 2020 to 2030, and a growth rate of 1.1% from 2030 to 2034.

Figure A5. Total Population Projections

	2010	2014	2015	2016	2019	2024	2029	2034
Total Population[1]	53,498	57,012	57,891	58,851	61,731	66,198	70,381	74,270



1. Total Population includes persons in group quarters.

Source: West Virginia Population Projection by County, West Virginia University College of Business and Economics.

Figure A6 shows the projected residential population and projected housing units in Jefferson County from 2014 to 2034. The growth rates of 1.6% from 2010 to 2020, 1.3% from 2020 to 2030, and 1.1% from 2030 to 2034 (based on the West Virginia University projections) are used to estimate population to 2034. Numbers shaded in blue are estimates provided by West Virginia University's College of Business and Economics. Next, the residential population is divided by the persons per housing unit ratio of 2.36 to determine the total number of housing units. The split between housing unit types uses the ratio in the 2010 Census, which was 91.9% single units and 8.1% units in structures with two or more units.

Figure A6. Projected Residential Population and Housing Units

Growth Rate[1]		
2010 to 2020	2020 to 2030	2030 to 2034
1.6%	1.3%	1.1%

	2010	2014	2015	2016	2020	2025	2030	2034
		Base	1	2	6	11	16	20
Persons per Housing Unit[2]	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
Residential Population[3]	53,498	57,012	57,891	58,851	62,691	67,075	71,208	74,270
Annual Residential Population Increase		**879**	**879**	**960**	**960**	**877**	**827**	**765**
Total Housing Units[4]	**22,669**	**24,158**	**24,530**	**24,937**	**26,564**	**28,422**	**30,173**	**31,470**
Single Unit (91.9%)[5]	*20,842*	*22,211*	*22,553*	*22,927*	*24,423*	*26,131*	*27,741*	*28,934*
2+ Units (8.1%)[5]	*1,827*	*1,947*	*1,977*	*2,010*	*2,141*	*2,290*	*2,432*	*2,536*
Annual Housing Unit Increase			**372**	**372**	**407**	**372**	**350**	**324**

1. WVU College of Business and Economics
2. 2010 Census and 2010-2012 ACS.
3. WVU College of Business and Economics 2000-2035 Projected Population for Jefferson County.
4. Found by dividing population by PPHU ratio of 2.36.
5. Split between housing unit type from 2010 Census.

NON-RESIDENTIAL DEVELOPMENT

Jobs by Type of Nonresidential Development

Figure A7 indicates the County's 2011 job estimate and nonresidential floor area, estimated using square feet per employee multipliers obtained from the Institute of Transportation Engineers (ITE 2012). The prototype for Commercial is an average-size shopping center. For Office/ Institutional, the development prototype is an average-sized office. The prototype development for Industrial jobs is light industrial. General land use types are based on two-digit industry sectors, with the percentage distribution of jobs by type of development from U.S. Census Bureau's OnTheMap web application.

As shown below, in 2011 there were 15,420 jobs in Jefferson County and approximately 6,075,751 square feet of nonresidential floor area.

Figure A7. Jobs and Floor Area Estimate

	2011 Jobs[1]	*% of Total*	*Sq Ft per Job*[2]	*Floor Area*
Commercial[3]	5,893	38%	***500***	2,946,500
Office/ Institutional[4]	7,545	49%	***301***	2,271,045
Industrial	1,982	13%	***433***	858,206
Total	**15,420**	**100%**		**6,075,751**

1. OnTheMap web application, U.S. Census Bureau.
2. Trip Generation, Institute of Transportation Engineers, 2012.
3. Retail, Food and Accomodation Services.
4. Major sectors are Health Care, Education, Public Administration, Administration & Support (office jobs), and Professional/Scientific/Technical Services.

Figure A8. Employee and Building Area Ratios

ITE Code	Land Use / Size	*Demand Unit*	*Wkdy Trip Ends Per Dmd Unit**	*Wkdy Trip Ends Per Employee**	*Emp Per Dmd Unit***	*Sq Ft Per Emp*
Commercial / Shopping Center						
820	**Shopping Center (avg size)**	**1,000 Sq Ft**	**42.70**	**na**	**2.00**	**500**
General Office						
710	**General Office (avg size)**	**1,000 Sq Ft**	**11.03**	**3.32**	**3.32**	**301**
Other Nonresidential						
770	Business Park***	1,000 Sq Ft	12.44	4.04	3.08	325
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
610	Hospital	1,000 Sq Ft	13.22	4.50	2.94	340
565	Day Care	student	4.38	26.73	0.16	na
550	University/College	student	1.71	8.96	0.19	na
540	Community College	student	1.23	15.55	0.08	na
530	High School	1,000 Sq Ft	12.89	19.74	0.65	1,531
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
254	Assisted Living	bed	2.66	3.93	0.68	na
620	Nursing Home	1,000 Sq Ft	7.60	3.26	2.33	429
320	Motel	room	5.63	12.81	0.44	na
110	**Light Industrial**	**1,000 Sq Ft**	**6.97**	**3.02**	**2.31**	**433**
130	Industrial Park	1,000 Sq Ft	6.83	3.34	2.04	489
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093

* Trip Generation, Institute of Transportation Engineers, 9th Edition (2012).

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

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

Nonresidential Development Forecast

Figure A9 displays projected jobs and nonresidential floor area in Jefferson County from 2011 to 2034. The 2011 estimates are based on Figure A7. Square footage projections were made based on conversations with the Jefferson County Development Authority. Nonresidential square footage was converted to jobs using ITE multipliers.

Figure A9. Projected Jobs and Nonresidential Floor Area

Growth Rate
0.5%

	2011	2014	2015	2016	2020	2025	2030	2034
		Base	1	2	7	12	17	20
Jefferson County	15,420	15,657	15,845	16,033	16,973	17,914	18,854	19,418
Annual Job Increase		**158**	**188**	**188**	**188**	**188**	**188**	**188**

	2011	2014	2015	2016	2021	2026	2031	2034
Nonres Sq Ft in 1000's (KSF)		Base	1	2	7	12	17	20
Commercial	2,947	2,991	3,018	3,045	3,178	3,312	3,446	3,526
Office/ Institutional	2,271	2,305	2,339	2,374	2,545	2,716	2,887	2,990
Industrial/ Flex	858	871	880	889	934	979	1,024	1,051
Total	**6,076**	**6,167**	**6,237**	**6,307**	**6,657**	**7,007**	**7,357**	**7,567**
Annual Nonres Floor Area Increase (KSF)		**62**	**70**	**70**	**70**	**70**	**70**	**70**

Source: Square footage estimate based on conversations with Jefferson County Development Authority. Nonresidential square footage was converted to jobs using ITE multipliers. Mix of job types from OnTheMap, U.S. Census Bureau web application.

DETAILED DEVELOPMENT PROJECTIONS

Demographic data shown in Figure A10 provides key inputs for updating impact fees in Jefferson County. Cumulative data are shown at the top and projected annual increases by type of development are shown at the bottom of the table.

Figure A10. Annual Demographic Data

	2014	2015	2016	2020	2025	2030	2034	20-Year
	Base Yr	1	2	6	11	16	20	Increase
Residential Population	57,012	57,891	58,851	62,691	67,075	71,208	74,270	**17,257**
Jobs	15,657	15,845	16,033	16,785	17,726	18,666	19,418	**3,761**
Housing Units								
Single Unit	22,211	22,553	22,927	24,423	26,131	27,741	28,934	**6,723**
2+ Units	1,947	1,977	2,010	2,141	2,290	2,432	2,536	**589**
Total Housing Units	**24,158**	**24,530**	**24,937**	**26,564**	**28,422**	**30,173**	**31,470**	**7,312**
Jobs to Housing Ratio	*0.65*	*0.65*	*0.64*	*0.63*	*0.62*	*0.62*	*0.62*	
Persons per Hsg Unit	*2.36*	*2.36*	*2.36*	*2.36*	*2.36*	*2.36*	*2.36*	
Nonres Sq Ft in 1000s (KSF)								
Commercial	2,991	3,018	3,045	3,152	3,285	3,419	3,526	**535**
Office/ Institutional	2,305	2,339	2,374	2,511	2,682	2,853	2,990	**685**
Industrial/ Flex	871	880	889	925	970	1,015	1,051	**180**
Total KSF	**6,167**	**6,237**	**6,307**	**6,587**	**6,937**	**7,287**	**7,567**	**1,400**
Avg Sq Ft Per Job	394	394	393	392	391	390	390	
								2014-34
Annual Increase		**14-15**	**15-16**	**19-20**	**24-25**	**29-30**	**33-34**	**Avg Anl**
Population		879	960	960	877	827	765	**863**
Jobs		188	188	188	188	188	188	**188**
Housing Units		372	407	407	372	350	324	**366**
Commercial KSF		27	27	27	27	27	27	**27**
Office/ Institutional KSF		34	34	34	34	34	34	**34**
Industrial/ Flex KSF		9	9	9	9	9	9	**9**
Total KSF		70	70	70	70	70	70	**67**