DRAFT (updated 16 Dec 2010)

Fire & EMS Impact Fees

December 2010

Department of Capital Planning and Management – Office of Impact Fees

Contents

1.0 Executive Summary

This document updates the Jefferson County Fire & EMS Impact Fee from the impact fee study done in December of 2007. The maximum justifiable fee schedule for new residential and commercial land uses are presented in Table 1.

Table 1. CY 2011 Maximum Justifiable Impact Fees

Residential Impact Fees		
Housing Type	**PPH**	**Cost**
Single Family	2.63	**$770**
Townhome/Duplex	2.01	**$588**
Multi-family	1.98	**$580**
Non Residential Impact Fees		
	Adj Trip Ends	**Cost**
Com/Shop Ctr 25,000 SF or less	24.27	**$2,000**
Com/Shop Ctr 25,001 – 50,000 SF	22.51	**$1,854**
Com/Shop Ctr 50,001 – 100,000 SF	19.69	**$1,623**
Com/Shop Ctr 100,001 – 200,000 SF	17.05	**$1,405**
Com/Shop Ctr over 200,000 SF	14.63	**$1,205**
Office/Inst 10,000 SF or less	11.33	**$934**
Office/Inst 10,001 – 25,000 SF	9.18	**$756**
Office/Inst 25,001 – 50,000 SF	7.83	**$645**
Office/Inst 50,001 – 100,000 SF	5.69	**$468**
Office/Inst over 100,000 SF	5.65	**$466**
Business Park	6.38	**$526**
Light Industrial	3.49	**$287**
Warehousing	2.48	**$204**
Manufacturing	1.91	**$157**

1.1 Trends Driving the Fee Schedule

Relative to the 2007 fee study, the Fire & EMS Impact Fee schedule is slightly higher for both residential development and slightly lower for non-residential development. There are a number of factors which serve to increase or decrease the fee schedules:

- The capitalization of the Fire & EMS inventory is higher than in 2010. This coupled with the fact that residential growth grew at a lower rate than the increased replacement costs for equipment and the fact that more Fire & EMS calls were directed to residences relative to 3 years ago explains why the residential impact fee for Fire & EMS increased.
- The number of Fire & EMS calls to non-residential addresses decreased as a percentage of all calls to addressable spaces. This decrease was sufficient, despite an overall increase in the capital asset inventory of the Fire & EMS entities, to drive the non-residential fees down slightly.

1.2 What are Impact Fees?

Impact fees are one-time payments that may be assessed by a locality to offset the costs associated with providing necessary public services. Impact fees for the County are proportionate and reasonably related to the capital facility service demands of new development. The fee methodologies establish that the fees will substantially benefit new development. The County's impact fee methodology also identifies the extent to which newly developed properties are entitled to various types of credits to avoid potential double payment of capital costs.

TischlerBise, Inc. (formerly Tischler & Associates) had previously evaluated possible methodologies and documented appropriate demand indicators by type of development, for each type of fee. Specific capital costs have been identified using local data and current dollars. The formula used to calculate each impact fee is diagrammed in Figure 1. Also, for each type of fee the report includes a summary table indicating the specific factors used to derive the impact fee. These factors are also referred to as Level-of-Service (LOS) standards. This current study utilizes the same approach previously applied by TischlerBise.

1.3 How are Impact Fees Calculated?

There are three basic approaches used to evaluate the various components of Jefferson County's impact fees. A **plan-based method** is best suited for public facilities that have adopted plans or commonly accepted service delivery standards to guide capital improvements. This method is not used in the Fire & EMS Impact Fee.

The **incremental expansion** methodology documents the current Level-of-Service (LOS) for each type of public facility in both quantitative and qualitative measures. LOS standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, Jefferson County will not use the funds for renewal and/or replacement of existing facilities. Rather the County's intent is to use impact fee revenue 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 methodology is used to calculate all components of the Fire & EMS Impact Fee.

A third method, known as the **buy-in approach**, is based on the rationale that new development will pay for its share of the useful life and remaining capacity of recently constructed facilities. This methodology is not used in this report.

Another general requirement that is common to impact fee methodologies is the evaluation of credits. There are several types of credits that have been considered. First, a **future revenue credit** has been evaluated to avoid potential double payment for capital facilities through on-going revenues that may fund system improvements. For example, this type of potential double payment may occur if facilities are bond financed.

The second type of credit is a **site-specific credit** for system improvements that have been included in the impact fee calculations. Policies and procedures related to site-specific credits

for system improvements are addressed in the ordinance that establishes the County's 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 impact fee calculations. Project improvements normally required as part of the development approval process are not eligible for credits against impact fees.

The Fire & EMS Impact Fee Calculations are entirely based on the incremental expansion approach. There are no general obligation bonds or excess levies for the benefit of Fire & EMS and all county contributions for Fire & EMS capital expenses have historically come from general revenue funds, thus there are no credits to consider in any of the fee calculations. Although there are multiple fire companies (in addition to the Emergency Services Agency), the impact fees are based on a countywide service area. For many emergency calls, multiple companies respond or serve to fill in for responding companies if additional calls are received during an emergency event.

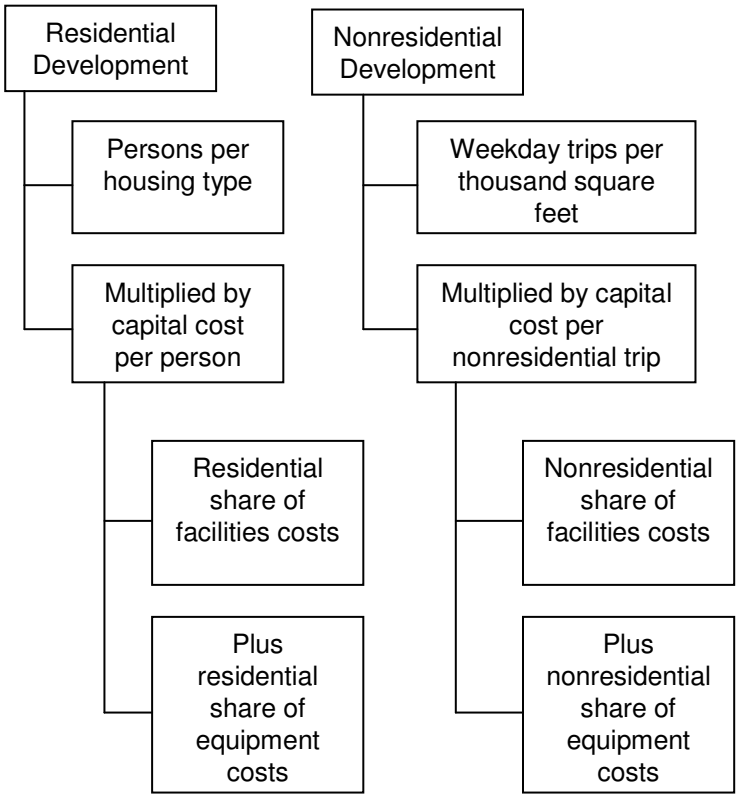
Fees for residential development are assessed per housing unit and are collected prior to issuance of a building permit. For nonresidential development, the fees are assessed per thousand square feet of floor area and are also collected prior to issuance of a building permit.

2.0 Base Data

The incremental expansion methodology has been used to determine impact fees for Fire & EMS including facilities (stations and land) and apparatus and equipment for the fire companies, the Jefferson County Emergency Services Agency, and the Jefferson County Fire & Rescue Association. As shown in Figure 1, the Fire & EMS Impact Fee uses different demand generators for residential and nonresidential development. Residential impact fees are calculated on a per capita basis and then converted to an appropriate amount by type of housing using household size multipliers. To calculate nonresidential impact fees, TischlerBise had previously recommended using nonresidential vehicle trips as the best demand indicator for the Fire & EMS category. That approach was continued in this study.

In addition to the demand generators, discussed above, the other set of base data are the capital inventories for Fire & EMS. This includes the stations, land, apparatus and equipment, ambulances, and the training facility maintained by the Jefferson County Fire & Rescue Association.

Figure 1. Fire & EMS Impact Fee Methodology Chart



2.1 Demand Generators

The demand generators for either residential or nonresidential construction are first determined and then proportioned in a manner which reflects the workload of the Fire & EMS services.

- Of all Fire and Emergency Medical calls which may be clearly attributed to a physical address or residential or non-residential use (50% of total workload), 71% are spent on calls to residential addresses (up from 67% in 2007) while 29% are spent on calls to nonresidential addresses (down from 33% in 2007). This proportioning is of the total calls to physical addresses and omits calls for roadside service since these cannot be allocated to either residential or nonresidential development (a person could be on their way to work or home or passing through the county). The 50% of the remaining total workload were calls to roadsides, open fields, or forested land. These proportions are outlined in Table 2.

Table 2. Fire & EMS Demand Breakdown

			Multiplier
Total Workload /1 /2			
	Residential	282	71%
	Non-Residential	116	29%
		398	**100%**

References

/1 Report of call activity (Jan-Oct 2007), State Fire Marshall's Office
/2 There were 431 calls which did not involve specific addresses.

Table 3 lists the base generators for residential (number of residents) and nonresidential (number of nonresidential vehicular trips) for CY 2007. The methodology for calculating the nonresidential trips is presented in Appendix 1.

Table 3. Base Generators for 2007

Population Base Data		
2009 County Population	50,690	/1
2010 Non Residential Trips	74,628	/2

References

/1 US Census - American Fact Finder. Accessed 1 Dec 2010
/2 See Appendix 1.

2.2 Fire & EMS Capital Inventory

The capital inventory for Fire & EMS includes two major groups: Stations and Land, and Apparatus and Equipment. Table 4 lists the Stations and Land inventory and Table 5 lists the Apparatus and Equipment inventory.

Table 4. Fire & EMS Stations and Land Capital Inventory

Company Name	*Acreage*	*Cost per Unit*	*Land Cost*	*Sq Ft Building*	*Cost/ Sq Ft*	*Building Cost*	*Total Facilty Cost*	*Ref*
Friendship Fire Company	2	$100,000	$200,000	7,448	$65	$484,120	$684,120	/2
Blue Ridge Mountain Fire Company	7.5	$18,000	$135,000	11,360	$65	$738,400	$873,400	*/5*
Citizen's Fire Company	7.5	$70,000	$525,000	13,000	$65	$845,000	$1,370,000	*/2*
Citizen's Fire Company - vacant lot	1.1		$120,000					
Independent Fire Company	1.15	$50,000	$57,500	16,410	$65	$1,066,650	$1,124,150	/2
Shepherdstown Fire Company	10	$10,000	$1,000,000	22,368	$45	$1,000,000	$2,000,000	*/2*
Bakerton Fire Company	1.85	$18,000	$33,300	7,000	$60	$420,000	$453,300	/3
Middleway Fire Company								
Jefferson County ESA	0					$1,400,000	$1,400,000	*/1*
Jefferson County Fire & Rescue Association	48.5			1,104			$40,000	/1 /4
						Total Stations and Land	**$7,944,970**	

References

/1 Purchase price from 2009
/2 2006 Building Construction Cost Data. 64th Annual Edition. RSMeans.
/3 Actual construction cost - December 2007
/4 Land not included as it exceeds standard LOS.

Table 5. Apparatus and Equipment Capital Inventory

Company Name	*Equipment Description*	*Cost*
Friendship Fire Company	2002 Engine/Ladder (Pumper)	$480,000
	1998 Tanker	$140,000
	2010 Ambulance	$150,000
	1994 Brush Truck	$33,000
	1990 Engine (Pumper)	$200,000
	2003 Ambulance	$140,000
	2007 GMC Yukon	$60,000
	1999 GMC Yukon	$60,000
	Extrication Equipment	$57,000
	Total Equipment	**$1,320,000**
Citizen's Fire Company	Air Compressor	$125,000
	Brush Truck	$65,000
	Rescue Truck	$300,000
	Engine (4WD)	$500,000
	Engine/Tanker	$550,000
	Ladder Truck	$1,000,000
	Duty Vehicle	$60,000
	Total Equipment	**$2,600,000**
Independent Fire Company	Tanker	$260,000
	Engine 1	$410,000
	Engine 2	$410,000
	Heavy Duty Rescue	$650,000
	Ambulance 1	$140,000
	Ambulance 2	$160,000
	Utility Vehicle	$35,000
	Boat, Motor, Trailer	$20,000
	Total Equipment	**$2,085,000**
Blue Ridge Mountain Fire Company		
	Engine 5	$450,000
	Engine 5-1	$450,000
	Tanker 5	$180,000
	Tanker 5-1	$350,000
	Brush 5	$100,000
	Forestry 5	$10,000
	Duty 5	$30,000
	Utility 5	$30,000
	Ambulance 5-1	$180,000
	Ambulance 5-2	$180,000
	EMS Chief's Vehicle	$30,000
	Fire Chief's Vehicle	$30,000
	Total Equipment /1	***$2,020,000***

Table 5 Continued

Company Name	*Equipment Description*	*Cost*
Shepherdstown	Ladder truck (truck 3)	$850,000
	Tanker/Tender (tanker 3)	$400,000
	Engine (engine 3)	$650,000
	Rescue Engine (rescue engine 3)	$650,000
	Brush 3	$100,000
	Duty 3	$100,000
	Engine (engine 3-1)	$300,000
	Ambulance (ambulance 3)	$200,000
	Ambulance (ambulance 3-1)	$200,000
	EMS 3	$75,000
	Total Equipment	**$3,525,000**
Jeff Co Emergency Services Agency	Lifepak heart monitors (3)	$75,000
	Zoll Autopulse CPR units (3)	$48,000
	Veh 11 - director	$50,000
	Veh 11-1 ALS Chase	$50,000
	Veh 11-2 ALS Chase	$50,000
	MCU 11 GMC Truck	$42,000
	Amb 11	$125,000
	Reserve 11	$125,000
	Total Equipment	**$565,000**
Bakerton Fire Company	Engine 7	$200,000
	Engine 7-1	$100,000
	Duty 7	$20,000
	Air 7	$65,000
	Utility 7	$7,500
	Serv 7	$10,000
	Mobile 7	$10,000
	Hurst Jaws of Life	$20,000
	Thermal Imager	$7,000
	Fire Hose	$25,000
	SCOTT Air Paks	$150,000
	Turn out fire gear	$62,500
	Total Equipment	**$677,000**
Middleway Fire Company	Engine 6-1	30000
	Engine 6-2	30000
	Tanker 6	30000
	Rescue 6	40000
	Utility 6	10000
	Total Equipment	**$140,000**
	TOTAL EQUIPMENT ALL COMPANIES	**$12,932,000**

References

All costs based on Insurance replacement estimates or recent purchases

2.3 Consultant Study

The current study as well as the previous fee study were conducted in-house using staff of the Jefferson County Commission. The current best practice is to engage a fee study consultant at some point in the fee update cycle in order to introduce any new best practices. Since nearly 7 years has passed since the last consultant-generated fee recalculation, it is appropriate to include that future cost at this time.

The cost for a study in three years is estimated to be $10,000. This amount is allocated to the projected increase in population and non-residential trips over the next three years. The US Census Bureau estimated the 2006 population of Jefferson County at 52,750 and the population estimate for 2009 was 50,960. Assuming the past 3-year trend continues for the next three years, this yields a 3-year population increase of 2,060 persons. During the same time, staff project an additional 6,607 non-residential vehicular trips. Taken together, these additional increments (8,667) divided by the estimated future study cost of $10,000 result in a study cost per person or non-residential vehicular trip to be $0.86.

3.0 Fee Calculations

Fees are calculated by relating the demand generators to the capitalized costs for stations, land, and apparatus and equipment. The results of these calculations are presented in Table 6. The data from Table 6 serves as the source for the final calculated maximum justifiable fees, expressed per housing unit type or commercial use category. Those data are presented in Table 7, which is a duplicate of the data in Table 1. A detailed explanation of the methodology follows these tables.

Table 6. Fee Calculations – Demand Unit Costs

Total Capital Costs		
Land and Buildings	$	7,944,970
Equipment	$	12,932,000

Category	Proportionate Share	2010 Demand Units	Cost Per Demand
Stations and Land			
Residential	71%	50,690	**$111**
Non-Residential	29%	74,628	**$31**
Apparatus and Equipment			
Residential	71%	50,690	**$181**
Non-Residential	29%	74,628	**$51**
Consultant Study			**$0.86**
Totals			
Residential		per person	**$293**
Non-Residential		per non-residential trip	**$82**

Table 7. Fee Calculations - Maximum Justifiable Impact Fees

Residential Impact Fees		
Housing Type	**PPH**	**Cost**
Single Family	2.63	**$770**
Townhome/Duplex	2.01	**$588**
Multi-family	1.98	**$580**
Non Residential Impact Fees		
	Adj Trip Ends	**Cost**
Com/Shop Ctr 25,000 SF or less	24.27	**$2,000**
Com/Shop Ctr 25,001 – 50,000 SF	22.51	**$1,854**
Com/Shop Ctr 50,001 – 100,000 SF	19.69	**$1,623**
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Office/Inst 10,000 SF or less	11.33	**$934**
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Office/Inst 25,001 – 50,000 SF	7.83	**$645**
Office/Inst 50,001 – 100,000 SF	5.69	**$468**
Office/Inst over 100,000 SF	5.65	**$466**
Business Park	6.38	**$526**
Light Industrial	3.49	**$287**
Warehousing	2.48	**$204**
Manufacturing	1.91	**$157**

3.1 Fee Calculation Methodology

The **Demand Unit Cost** expressed as *Per Person* for stations and land and for apparatus and equipment constitutes the total per person cost of Fire & EMS. These values serve to ultimately calculate the Fire & EMS Impact Fee for each residential dwelling unit type, based on the average persons per household for those dwelling types. Conversely, the *Per Trip* costs for facilities and vehicles constitute the total per nonresidential vehicular trip cost of Fire & EMS. These values serve to calculate the Fire & EMS Impact Fee for each commercial use category (for a set of predefined uses) and also serve as the base of any custom commercial fee calculations. The commercial fee schedule is calculated by relating the per vehicular trip cost to the number of weekday vehicular trips associated with each commercial use. The trip numbers are adjusted since traffic engineers count entry and exit to a property as two separate trips, thus the minimum trip adjustment is 50%. For commercial land uses that tend to capture on-property trips, such as large shopping centers, the adjustment is higher.

3.1.1 Residential Fee Calculations

The per person costs for Facilities and Land and for Equipment presented in Table 6 are derived as follows:

- The total cost of Stations and Land are first proportioned using the data from Table 2 (in this case 71% of these costs are attributable to the residential demand for Fire & EMS services) and then divided by the total population as expressed in Table 3. This yields the per person share for Facilities and Land. In a similar manner, the per person costs for Apparatus and Equipment is calculated.

- These per person costs are totaled and presented in Table 6. To determine the final fee for each housing unit type, the total per person cost is multiplied by the Persons per Household values (reported by the US Bureau of the Census) to obtain the final costs per residential housing type expressed in Table 7.

3.1.2 Nonresidential Fee Calculations

- For the nonresidential component, the values in Table 6 are derived by multiplying the total capital costs for either Stations and Land or for Apparatus and Equipment (from Table 4 and Table 5) by the value of 29% from Table 2. That product is divided by the estimated total nonresidential daily vehicular trips from Table 3 to obtain the total Fire & EMS costs for each nonresidential vehicular trip as presented in Table 6. Finally, for selected nonresidential uses, the cost per trip is multiplied by the adjusted average daily trips (as determined by the Institute of Traffic Engineers) to yield the values outlined in Table 7.

Appendix 1. Non-Residential Weekday Trips

Table 8. Base Data for Non Residential Weekday Trips - Projected for 2007

	Knowns			Calculated Values				
Land Use	Wkly Trip Ends Per 1000 sq ft	Square Feet per employee	2010 Jobs	Total Floor Area (IxJ)	Total Floor Area per 1000 (J)	Total Trips/Floor Area (J*F)	Trip Adjustment	Total Daily Trips
Comm Shop Ctr (820)								
100K gross leasable area	68.17	450	6,610	2974500	2974.5	202771.665	32%	64887
General Office (710)								
10K gross leasable area	22.64	228	2,786	635106.67	635.1067	14378.8149	50%	7189
Light Industrial (110)	6.97	433	1,691	732251.11	732.2511	5103.79024	50%	2552
			11,087					**74628**
	/1	/2	/3	/4	/5	/6	/7	/8

References

/1 Wkdy Trip Ends Per 1,000 sq ft - Table 1 - memo dated 3 June 2004 from Chris Cullinan, T&A.
/2 From ITE Trip Generation, 7th edition.
/3 Data from CY2010 Q1 worksheet using First Quarter FY 2010 BEP data
/4 Calculated value - product of Square feet per employee and 2010 Jobs.
/5 Calculated value - Total Floor Area divided by 1000.
/6 Calculated value - product of Total Floor Area per 1000 and Weekly Trip Ends per 1000 sq ft.
/7 Trip Adjustment - Table 2 - memo dated 3 June 2004 from Chris Cullinan, T&A. Original source data from ITE Trip Generation, 6th Edition.
/8 Calculated value - Total Trips per floor area divided by trip adjustment.

Table 8 data source is Microsoft Excel Workbook *2010 12 03 BEP Data.xls*

Appendix 2. Fee Schedule History

Table 9 Fire & EMS Impact Fee Schedule History.

Residential Impact Fee Housing Type	2005 /1	2006 /2	2007 /2	2008 /1	2011 /3
	Impact Fee per Dwelling Unit				
Single Family	$536	$566	$603	$698	$770
Town home/Duplex	$409	$432	$460	$533	$588
Multi-family	$403	$426	$454	$525	$580
Non Residential Impact Fee Commercial Use Category	**Impact Fee per 1,000 square feet gross usable floor area**				
Com/Shop Center 25,000 SF or less	$1,808	$1,909	$2,034	$2,353	$2,000
Com/Shop Center 25,001 – 50,000 SF	$1,677	$1,771	$1,887	$2,182	$1,854
Com/Shop Center 50,001 – 100,000 SF	$1,467	$1,549	$1,650	$1,909	$1,623
Com/Shop Center 100,001 – 200,000 SF	$1,270	$1,341	$1,429	$1,653	$1,405
Com/Shop Center over 200,000 SF	$1,090	$1,151	$1,226	$1,418	$1,205
Office/Inst 10,000 SF or less	$844	$891	$949	$1,098	$934
Office/Inst 10,001 – 25,000 SF	$684	$722	$769	$889	$756
Office/Inst 25,001 – 50,000 SF	$583	$616	$656	$758	$645
Office/Inst 50,001 – 100,000 SF	$497	$525	$559	$551	$468
Office/Inst over 100,000 SF	$424	$448	$477	$548	$466
Business Park	$475	$502	$535	$618	$526
Light Industrial	$260	$275	$293	$338	$287
Warehousing	$185	$195	$208	$240	$204
Manufacturing	$142	$150	$160	$185	$157

Note:
/1 Fee Study
/2 Annual Inflation Adjustment
/3 Proposed new fee schedule – this study.