

EMS IMPACT FEE UPDATE

prepared for **LEE COUNTY, FLORIDA**



prepared by **duncan** associates

January 2001

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Introduction

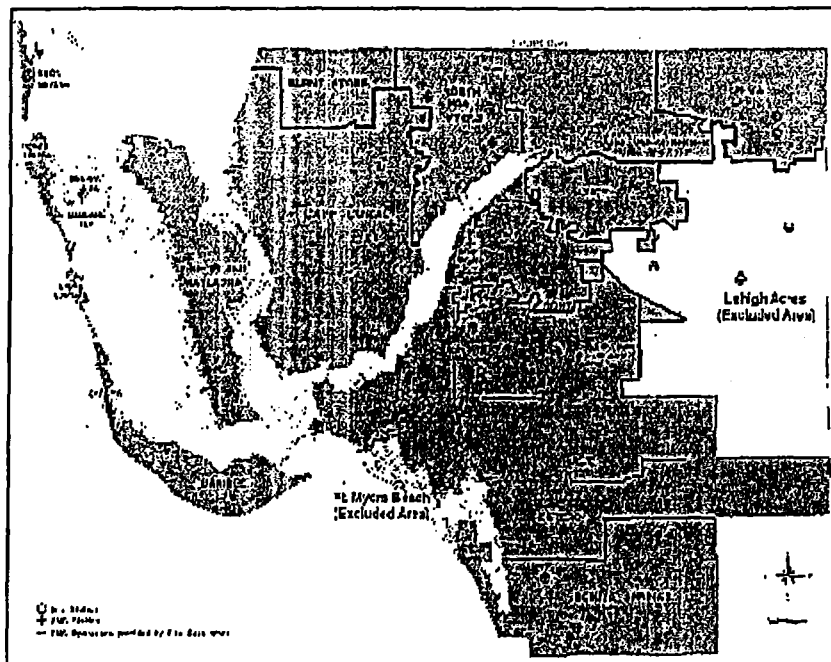
Lee County provides emergency medical service (EMS), which includes the provision of advanced life support and patient transportation, throughout most of the county. Capital facilities that support these services include portions of several fire stations, a fleet of ambulances and other vehicles, including a helicopter, and communications and medical equipment. The County has charged an impact fee for EMS facilities since 1989. This section calculates the updated maximum impact fees that can be charged by the County to recover the cost of EMS facilities required to serve new development at the existing level of service.

Service Area

Lee County provides primary EMS service to most of the cities and the unincorporated areas of the county. The County provides support services to the Fort Myers Beach Fire Control District and the Lehigh Acres Fire Protection and Rescue District, which provide their own primary EMS service. The area of the county for which County EMS provides primary service is shown in Figure 1. The EMS impact fee service area includes all of the county except Fort Myers Beach and Lehigh Acres.

While each EMS unit has a designated primary response area, it may respond to calls in neighboring response areas if required. In addition, specialized equipment that supports all units, such as communications and dispatch equipment and a helicopter, are centralized. Consequently, the entire service area is appropriately designated as a single benefit district for the purpose of EMS impact fees.

Figure 1
COUNTY EMS SERVICE AREA



Methodology

The original 1989 impact fee study for EMS facilities was prepared by Dr. James C. Nicholas.¹ Since data on existing land uses was not available at that time, Dr. Nicholas developed a rather complex methodology that involved cost per person, average household size, average vehicle occupancy and trip generation per unit of development. The current availability of existing land use data for this study allows the use of a simpler methodology than the one originally developed by Dr. Nicholas.

As with the original study, the revised EMS impact fees will also be based on the existing level of service. The revised methodology divides the replacement cost of the County's existing EMS capital facilities by the number of existing EMS service units, then deducts a revenue credit for future grants. Service units, or "equivalent dwelling units" (EDUs), represent the demand for EMS service generated by a single-family dwelling, and are based on the annual number of EMS calls per development unit for various land use categories. The recommended formula for calculating the EMS impact fees is shown in Figure 1.

Figure 1
EMS IMPACT FEE FORMULA

MAXIMUM FEE	=	PROJECT EDUs multiplied by NET COST/EDU
EDU	=	Equivalent Dwelling Unit, representing the demand for EMS services equivalent to that demanded by a single-family dwelling unit
PROJECT EDUs	=	Total EDUs for a development, calculated by multiplying UNITS for each land use category by the EDUs/UNIT for that land use category and summing for all land use categories
UNITS	=	Development units, expressed in residential dwelling units, hotel/motel rooms, or thousands of square feet for other nonresidential development
EDUs/UNIT	=	The number of EDUs associated with a development unit of a particular land use category
NET COST/EDU	=	COST/EDU less CREDIT/EDU
COST/EDU	=	COST divided by TOTAL EDUs
COST	=	Replacement cost of the County's existing EMS capital facilities
TOTAL EDUs	=	Total EDUs for the County EMS service area, calculated by multiplying UNITS for each land use category by the EDUs/UNIT for that land use category and summing for all land use categories
CREDIT/EDU	=	Anticipated grant or debt service funding per EDU

¹James C. Nicholas, PhD., "Technical Memorandum on the Methods used to Calculate the Lee County Fire Impact Fees," April 1989

Service Unit

Different types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for EMS service. This unit of measurement is called a "service unit." A common service unit used in impact fee analysis is the "equivalent dwelling unit" or EDU, which represents the impact of a typical single-family dwelling.

The relative demand for EMS facilities and services required to serve development units of various land use types is measured in terms of the number of EMS calls reported during a 12-month period. Detailed data on EMS calls by land use categories for six years was provided by the Lee County Division of Public Safety. About one-third of the calls could not be directly classified according to a land use category, and half of those were related to accidents or other incidents that occurred on roadways. The road-related calls were allocated to land uses based on relative trip generation. Roughly 16 percent of calls could not be classified according to a land use and were not included in the total attributable calls used in developing the percentages. As can be seen from Table 1, the distribution of calls by land use has remained remarkably consistent over the six-year period, with residential uses accounting for almost two-thirds of EMS calls.

Table 1
COUNTY EMS CALLS, 1994-1999

	1994	1995	1996	1997	1998	1999	Average
Residential	19,943	21,459	23,208	24,206	24,910	26,463	
Hotel/Motel	510	534	516	575	571	551	
Office/Commercial	10,138	11,068	11,964	12,545	13,262	13,928	
Industrial	190	207	197	215	228	219	
Total Attributable Calls	30,781	33,268	35,885	37,541	38,971	41,161	
Unclassified Calls	5,414	5,934	6,709	7,032	7,325	8,025	
Total Calls	36,195	39,202	42,594	44,573	46,296	49,186	
Residential	64.8%	64.5%	64.8%	64.5%	63.9%	64.4%	64.4%
Hotel/Motel	1.7%	1.6%	1.4%	1.5%	1.5%	1.3%	1.5%
Office/Commercial	32.9%	33.3%	33.3%	33.4%	34.0%	33.8%	33.5%
Industrial	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	0.6%
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Lee County Division of Public Safety, "Incident Location/Type Summary" for calendar years, printed June 8, 2000; road-related calls allocated to land use categories based on relative average daily trips, using land uses from Table 2 and trip generation rates from Institute of Transportation Engineers (ITE), *Trip Generation*, 6th edition, 1997 (commercial based on 500,000 square foot shopping center, with 76% new trips factor derived from ITE equation), resulting in road-related calls being allocated 61% to residential, 2% to hotel/motel, 35% to office/commercial and 2% to industrial.

Existing land use data for the area of the county served by Lee County EMS, summarized in Table 2, was derived primarily from property appraisal records.

**Table 2
EXISTING LAND USE, COUNTY EMS SERVICE AREA**

Land Use	Unit of Measure	Served Unincorp.	Ft. Myers	Cape Coral	Sanibel	Total Served
Single-Family	Dwelling	54,294	8,561	36,068	3,816	102,739
Multi-Family	Dwelling	83,574	13,592	10,346	4,684	112,196
Hotel/Motel	Rooms	4,240	1,822	260	703	7,025
Commercial	1,000 sf	14,024	6,250	2,360	440	23,074
Service	1,000 sf	7,727	17,260	2,360	397	27,744
Industrial	1,000 sf	6,243	1,890	890	0	9,023

Source: Served unincorporated area excludes Lehigh Acres Fire District and Fort Myers Beach; unincorporated area land use derived from Lee County Property Appraiser records as compiled by Lee County Planning Division, 1998 (residential units inflated by factor of 2.8% annual growth for two years based on recent county population growth rates; hotel rooms estimated based on 400 square feet per room; industrial square footage based on acres and assumed 0.1 FAR); Fort Myers and Cape Coral data based on January 2000 housing units and nonresidential acres and assumed 0.1 FAR; Fort Myers hotel rooms from Planning Department, 11/30/2000 email; Cape Coral hotel rooms from planning staff, Nov. 2000 phone survey; Sanibel land use from Duncan Associates, *Lee County Fire Impact Fee Update*, Table 39, August 1999; Sanibel hotel units from "City of Sanibel Facts and Figures - 1998" (no new hotels since).

The combination of these two data sets—existing land use and EMS call distribution—yields EMS equivalent dwelling units per development unit for various land use categories. Since call data was not available by type of residential unit, it is assumed that calls to multi-family units are lower than for single-family units proportional to average household size. This assumption is a common one in public safety impact fee methodology and is particularly appropriate for EMS impact fees, since EMS calls are in response to medical emergencies and may reasonably be assumed to be proportional to the presence of people. As shown in Table 3, a multi-family unit generates about three-quarters of the EMS demand of a single-family unit, while 1,000 square feet of commercial development generates 91 percent more EMS demand than a single-family dwelling.

**Table 3
EMS EQUIVALENT DWELLING UNITS BY LAND USE**

Land Use	Unit of Measure	Existing Units	EMS Call Distribution	EDUs/Unit	Total EDUs
Single-Family	Dwelling	102,739	n/a	1.00	102,739
Multi-Family	Dwelling	112,196	n/a	0.76	85,269
Subtotal, Residential	Dwelling	214,935	64.4%	0.87	188,008
Hotel/Motel	Room	7,025	1.5%	0.62	4,356
Commercial	1,000 sq. ft.	50,818	33.5%	1.91	97,062
Industrial	1,000 sq. ft.	9,023	0.6%	0.19	1,714
Total			100.0%		291,140

Source: Existing units from Table 2; EMS call distribution from Table 1; EDUs/unit is one for single-family by definition, multi-family is based on ratio of average household size (2.01 for all other versus 2.63 for single-family detached, according to 1990 census data for Lee County), EDUs per residential unit is total residential EDUs divided by total residential units; EDUs/unit for other land uses based on ratios of percent of calls and units [(% calls/residential % calls) / (units/residential units) x 0.87 EDUs per residential dwelling]; total EDUs is product of existing units times EDUs/unit.

Cost per Service Unit

The capital facilities that are used to support the provision of County EMS services include portions of fire stations used by EMS, ambulances and support vehicles, communications equipment, breathing systems and specialized extrication equipment.

Portions of three stations owned by the County are occupied by EMS (other stations used by EMS are not included because they are owned by municipalities or fire districts). At current replacement costs, the buildings owned by the County and housing EMS personnel and equipment represent an investment of about \$0.7 million, as summarized in Table 4.

Table 4
EMS STATION REPLACEMENT COST

Station	Building Sq. Ft.	Cost/ Sq. Ft.	Building Cost
East Ft. Myers Station	2,400	\$120	\$288,000
North Ft. Myers Station	2,030	\$120	\$243,600
Ft. Myers Shores Station	1,440	\$120	\$172,800
Total	5,870		\$704,400

Source: Lee County Public Safety Operations Coordinator, June 2000
(Includes only portion of station occupied by EMS).

The County operates a fleet of EMS vehicles, including 33 ambulances (almost double the 17 operated in 1989), a helicopter and several other support vehicles. Based on current replacement costs, the existing fleet of EMS vehicles has a total cost of \$7.1 million (see Table 5).

Table 5
EMS VEHICLE COST

Vehicle Type	Number	Unit Cost	Total Cost
Ambulance, Ford F-350	18	\$67,471	\$1,214,478
Ambulance, Freightliner	15	\$115,236	\$1,728,540
Helicopter	1	\$3,800,000	\$3,800,000
Chevrolet Caprice	2	\$12,590	\$25,180
Chevrolet Van	1	\$23,694	\$23,694
Chevrolet 2500 Suburban	1	\$32,185	\$32,185
Dodge D-3500 Utility Truck	2	\$36,750	\$73,500
Ford Bronco	2	\$20,172	\$40,344
Ford Crown Victoria	3	\$20,740	\$62,220
Ford Expedition	1	\$26,922	\$26,922
Ford F-250 Utility Truck	1	\$23,452	\$23,452
Ford E-350 S.D.	2	\$26,118	\$52,236
Total Vehicle Cost			\$7,102,751

Source: Lee County Public Safety Operations Coordinator, June 2000.

In addition to buildings and vehicles, a significant amount of capital equipment is required to support EMS service. Required equipment includes communications equipment, computers, medical and rescue equipment, and office equipment. The cost of existing EMS equipment was estimated from original acquisition costs from the County's fixed asset listings. County Public Safety Division staff assisted in identifying the EMS share of the existing equipment inventory. The total cost of EMS equipment is approximately \$2 million, as summarized in Table 6.

**Table 6
EMS EQUIPMENT COST**

Electronic & Communication Equipment	\$1,419,876
Medical & Rescue Equipment	\$384,351
Office Equipment	\$88,262
Trailers	\$46,958
Breathing Apparatus	\$28,040
Tower	\$18,252
Total Equipment Cost	\$1,985,739

Source: Lee County Finance Department, Fixed Asset Listings;
Lee County Public Safety Division.

The total cost of EMS facilities, including buildings, vehicles and equipment, is approximately \$9.8 million. Dividing this total capital cost by total existing service units yields a cost of \$33.64 per EDU, as summarized in Table 7.

**Table 7
EMS COST PER SERVICE UNIT**

Station Replacement Cost	\$704,400
Vehicle Replacement Cost	\$7,102,751
Equipment Cost	\$1,985,739
Total Facility and Equipment Cost	\$9,792,890
Total Existing Equivalent Dwelling Units (EDUs)	291,140
Cost per EDU	\$33.64

Source: Station cost from Table 4; vehicle cost from Table 5; equipment cost from Table 6; total EDUs from Table 3.

Revenue Credits

While the County has no outstanding debt for EMS facilities, it has received some grant funding in recent years. New development should not have to pay for that share of new EMS facilities that will be funded through state or federal grants or other outside funding sources. The grant funding for EMS equipment received by the County over the last five years is summarized in Table 8.

Table 8
EMS GRANT FUNDING, 1995-2000

Grant	Year	Description	Amount
EMS County	FY 95-96	Misc. EMS equipment	\$112,062
EMS County	FY 96-97	ALS/BLS equip for 2 new ambulances	\$126,991
EMS County	FY 97-98	25 medical data computers for ambulances	\$98,089
EMS County	FY 98-99	EMS library furniture, computers & equipment	\$68,998
EMS County	FY 99-00	Blood pressure machines, training equipment	\$81,386
EMS Matching	1995	14 cardiac machines	\$37,879
EMS Matching	1996	23 pulse oximeters	\$12,375
EMS Matching	1997	Automatic vehicle locators for 40 ambulances	\$171,038
EMS Matching	1998	EMS helicopter flight tracking system	\$26,646
EMS Matching	1998	Automatic defibrillator training device	\$844
Total Grant Funding, 1995-2000			\$736,308
Average Annual Grant Funding			\$147,262

Source: Lee County EMS Program Director, "Emergency Medical Service Grant History, 1995-2000" (matching grants do not include 25% County match).

Assuming that the County continues to receive EMS grants proportional to the amount of development it serves, over the typical 20-year financing period for capital facilities the County will receive the equivalent of a current lump-sum contribution of \$6.35 per service unit.

Table 9
EMS GRANT FUNDING CREDIT PER SERVICE UNIT

Annual EMS Grant Funding	\$147,262
Total Existing EMS Equivalent Dwelling Units (EDUs)	291,140
Annual EMS Grant Funding per EDU	\$0.51
Net Present Value Factor for Future Funding	12.46
EMS Grant Funding Credit per EDU	\$6.35

Source: Annual grant funding from Table 8; existing EDUs from Table 3; net present value factor based on 20 years at 5% discount rate; discount rate of 5% based on the County's average return on investments in the State Board of Administration (SBA) investment pool for the 12-month period from October 1998 to September 1999 according to Lee County Budget Services, Fiscal Research Division, January 28, 2000 memorandum.

Reducing the cost per service unit by the anticipated grant funding per service unit over the next 20 years leaves a net cost per service unit of \$27.29 per equivalent dwelling unit, as shown in Table 10.

Table 10
EMS NET COST PER SERVICE UNIT

EMS Cost per EDU	\$33.64
EMS Grant Funding Credit per EDU	\$6.35
EMS Net Cost per EDU	\$27.29

Source: Cost per EDU from Table 7; credit per EDU from Table 9.

Maximum Fee Schedule

The maximum EMS impact fees that may be adopted by the County can be calculated by multiplying the number of equivalent dwelling units (EDUs) per unit associated with various land uses by the net cost per EDU of maintaining the existing level of service. The EMS impact fee calculations are presented in Table 11.

Table 11
PROPOSED EMS IMPACT FEE CALCULATIONS

Land Use	Unit	EDUs/ Unit	Net Cost/ EDU	Proposed Fee/Unit
Single-Family Detached	Dwelling	1.00	\$27.29	\$27
Multi-Family	Dwelling	0.76	\$27.29	\$21
Hotel/Motel	Room	0.62	\$27.29	\$17
Office/Commercial	1,000 sq. ft.	1.91	\$27.29	\$52
Industrial	1,000 sq. ft.	0.19	\$27.29	\$5

Source: EDUs per unit from Tables 3; net cost per EDU from Table 10.

The potential EMS fees calculated above are compared with the County's current EMS fees in Table 12. Notice that some land use categories for which separate fees are currently charged have been combined into a single category. This is because current data on EMS calls for service is only available at the more general level. Thus, all dwelling units other than single-family detached units, including timeshare and mobile home and RV parks, will be charged the lower, "multi-family" fee. Similarly, all retail and office categories will be charged the same "office/commercial" fee.

**Table 12
COMPARISON OF CURRENT AND PROPOSED EMS FEES**

Land Use	Unit	Current Fee*	Proposed Fee	Potential Increase
Single-Family	Dwelling	\$9.90	\$27	\$17
Multi-Family	Dwelling	\$6.30	\$21	\$15
Timeshare	Dwelling	\$0	\$21	\$21
Mobile Home	Space	\$9.00	\$21	\$12
Recreational Vehicle	Space	\$0	\$21	\$21
Hotel/Motel	Room	\$0	\$17	\$17
Retail, <100,000 sf	1,000 sf	\$33.30	\$52	\$19
Retail, 100,000 sf+	1,000 sf	\$17.10	\$52	\$35
Office, <100,000 sf	1,000 sf	\$4.50	\$52	\$48
Office, 100,000 sf+	1,000 sf	\$2.70	\$52	\$49
Medical Office	1,000 sf	\$12.60	\$52	\$39
Industrial	1,000 sf	\$0	\$5	\$5
Warehouse	1,000 sf	\$0	\$5	\$5

*adopted at 90% of actual amount calculated in 1989 study

Since the EMS fee schedule will continue to be located within the combined fire/EMS impact fee ordinance, it will probably be less confusing if it has the same land use categories as the fire impact fee schedules. Originally, the fire and EMS fee schedules had the same land use categories, but when the fire impact fees were updated the land use categories were changed in the fire fee schedules but not in the EMS fee schedule. The proposed EMS impact fee schedule is shown below.

**Table 13
PROPOSED EMS IMPACT FEE SCHEDULE**

Land Use	Development Unit	EMS Impact Fee per Unit
Single-family residence or mobile home on individual lot	Dwelling Unit	\$27
Multi-family	Dwelling Unit	\$21
Mobile home or recreational vehicle in mobile home/RV park	Space	\$21
Hotel/motel	Room	\$17
Retail	1,000 sq. ft.	\$52
Office	1,000 sq. ft.	\$52
Public or institutional use	1,000 sq. ft.	\$52
General industrial	1,000 sq. ft.	\$5
Public or private warehouse	1,000 sq. ft.	\$5