

Development Impact Fees

Capital Improvement Plan
For
Fire/EMS Impact Fees

Prepared by
Bernalillo County
New Mexico

Updated 2012

CAPITAL IMPROVEMENT PLAN FOR FIRE/EMS IMPACT FEES

The New Mexico *Development Fees Act* authorizes cities and counties to establish impact fees for, “buildings for fire, police and rescue and essential equipment costing ten thousand dollars (\$10,000) or more and having a life expectancy of ten years or more.” (*Development Fee Act*, 1978 Annotated, Replacement Packet 1993)

The Fire and Emergency Medical Service Impact Fee Capital Improvement Plan (Fire/EMS IFCIP) establishes the basis for extending emergency services to new development within the unincorporated area of Bernalillo County, New Mexico. The Plan is consistent with New Mexico State Statutes and Bernalillo County Code (Chapter 46). The Plan is based on fire fighting and emergency response principles and practice.

Principles and Practice

Fire/EMS Principles

Extending the current Fire/EMS level of service to new development in Bernalillo County requires funding for fixed or static capital assets and mobile or dynamic capital assets. Examples of fixed assets are fire stations and related facilities used in preparation for, response to, and recovery from an emergency. Mobile capital assets are fire engines and other emergency response vehicles. Extending response coverage requires the distribution of fixed assets and concentration of mobile assets.

Fixed capital assets provide permanent bases from which to attack a fire or respond to a medical emergency. Fixed assets are distributed to be capable of responding wherever and whenever an emergency occurs. Some emergencies require support from more than one station or other facility. Fire/EMS service employs a network of facilities each with mobile assets.

Mobile capital assets must be concentrated to ensure reliable response to a wide range of risks. Concentration is the spacing of resources so that an initial effective response force can be assembled on scene in keeping with adopted public policy. (*Creating and Evaluating Standards of Response Coverage for Fire Departments*, 2003) Concentration of resources helps mitigate the consequences of an incident which are measured by loss of life and property damage.

The primary objectives of the Fire/EMS Impact Plan are the same as the primary objectives of fire fighting and emergency response – to save lives and limit property damage. In the field, these objectives are accomplished by developing the capability to arrive at a scene in a short period of time with adequate resources. This Impact Fee Plan helps ensure adequate funding so the objectives are achieved.

Fire/EMS Practice

Fire and emergency medical service are similar in that both emphasize the importance of response time. Critical time periods are used when evaluating current emergency response capability and planning to extend the capability to new development. Following incident detection, report and dispatch, three critical time periods are:

- Turnout time – the time from when responders are notified to respond, to when wheels begin to turn on an apparatus.
- Travel time – the time from when wheels begin to turn, to arrival on scene.
- Set up time – the time when wheels stop turning on scene, to when resources are directly engaged in responding to the emergency.

These time periods are used in assessing Fire/EMS capital asset deployment and concentration, and in identifying essential equipment consistent with the *Development Fees Act*. Turnout time is related to effective communications capability. For this reason, communications systems that meet the cost and length of service conditions for capital improvements may be included in the Fire/EMS capital costs.

Travel time is directly related to capital asset distribution. For this reason, costs are included to distribute facilities to ensure geographic proximity to new development. There are distribution standards for stations and essential equipment, such as having an adequately equipped, responding first-due engine company within 1.5 miles of an incident. (*Fire Insurance Classification Improvement Statements*, Insurance Services Office, 2006) Distribution thresholds are reviewed by Bernalillo County Fire Department and assessed in relation to service. Travel time can also be related to advanced Geographic Information System routing capabilities and advanced signal controls.

Set up time is related to how well mobile assets are equipped. Fire/EMS practice identifies the importance of mobile capital expenditures being fully equipped as part of capital improvements.

Consideration of capital cost in the Impact Fee Plan does not include fire fighter staffing. No operation is successful without adequate staff strength to offensively attack a fire. (*Safe Fire Fighting Staffing*, 1993) While impact fees cannot be used for fire fighters, they can ensure adequate fixed and mobile assets for new development.

There are differences in fire and emergency medical service practice that are reflected in the Fire/EMS IFCIP. Fire protection is based on response to fires at all sites within a service area whether or not persons are present at the scene. EMS protection is based on response to persons who need emergency medical service. EMS includes advanced life support and patient transportation. EMS calls are associated with where people are located or located most of the time.

Some fire incidents are the opposite and may occur where people are not located, or not located at the time of the incident. Person-based approaches to Fire/EMS impact

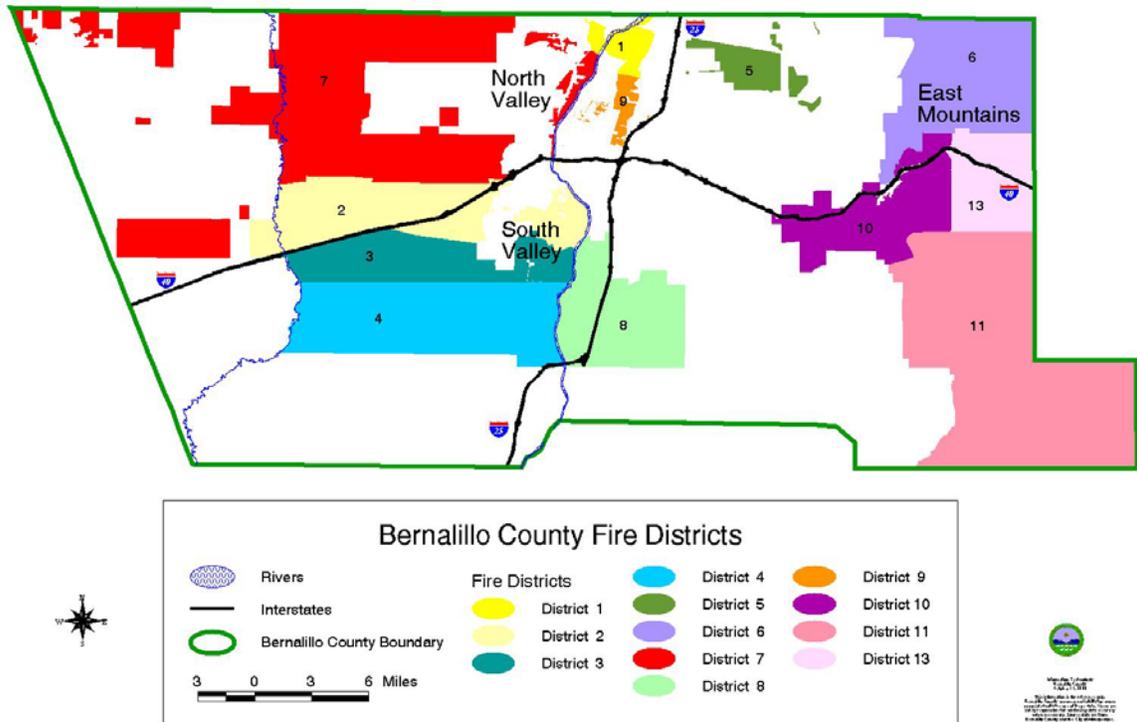
fees are appropriate to EMS practice. Person-based approaches to Fire/EMS impact fees are not appropriate to Fire practice, and may underestimate the need for fire response independently of where people are located.

Service

Service Area

Fire apparatus concentrated at one station may be dispatched to an emergency in another area of Bernalillo County. Fire protection functions as a single system, and therefore Bernalillo County is designated as a single service area. The service area is shown in Figure 1.

**FIGURE 1
BERNALILLO COUNTY FIRE/EMS SERVICE AREA**



Service Unit

The Fire/EMS service unit is expressed in square feet of distributed fixed assets, including the mobile capital assets concentrated at those sites. The demand for the service unit is based on residential and non-residential development. The supply is based

on extending the current level of service to new residential and non-residential development.

Methodology

Calls

The demand for Fire/EMS service units within the service area begins with review of the volume of emergency calls. For 2011, there were 9,843 EMS calls and 2,226 fire calls for a total of 12,069 up from 11,200 emergency calls from 16 stations located in 10 fire districts served by the Department last year. Fire insurance ratings are 4/9. ISO plays a large role in how Fire Department across the state is funded. This is also one of many tools used by some insurance companies when determining rates to charge both residential and commercial customers. Typically, the lower the ISO rate for a department, the lower your insurance rate is. ISO bases their study on available water supply, receiving and handling of calls, divergence and general fire department structure.

The residential to non-residential proportion of calls is calculated by Fire Departments in cities and counties across the United States. There are similar proportions of residential and non-residential calls (Lee County, Florida, 2006). Some Fire Departments report higher or lower proportions. (Surprise, Arizona, 2006) Differences may be based in part on differences in jobs-to-housing ratios, and there is no basis for adjusting the Bernalillo County current distribution of residential and non-residential calls. The new database will have long-term benefit to the IFCIP and other planning efforts by identifying call patterns by land use.

Call volume alone is not an accurate reflection of emergency response demand. The first limitation is related to distribution of assets. The Fire/EMS Impact Fee Plan must be capable of providing the same service, the same potential for reliable response throughout the County independent of emergency calls. The second limitation is related to concentration of mobile assets. The number of calls alone does not indicate differences in the severity of the emergency and the extent of the response. (*Standard of Cover Base Workshop*, 2004)

ISO plays a large role in how Fire Department across the state are funded.

To ensure that non-residential as well as residential land uses are responsible for their demand for Fire/EMS service, the distribution of capital costs is evenly divided. The proportionate distribution of Fire/EMS capital costs is 50% residential and 50% non-residential land uses.

Impact Fee Credits

An impact fee credit is assigned when there is an outstanding debt on existing capital facilities. It is applied to reduce the potential for new development double paying

for capital improvements. There is no outstanding debt for Bernalillo County Fire/EMS capital assets, and no credit is applied in the Fire/EMS IFCIP.

The potential need of fire/EMS services cannot be provided through other means, such as the developer providing suppression and rescue. Therefore, it is recommended that Fire/EMS Impact Fees not be waived for any reason.

Land Use Categories

The Fire/EMS IFCIP groups land use into categories. The categories are: Single Family Dwelling; Multi-Family Dwelling; Mobile Home; Commercial; Industrial; Office/Institution; and, Storage. Changes in impact fees can be readily compared if the same land use categories are used. With one exception, the land use categories in the current Fire/EMS IFCIP are identical to the categories presented in the previous IFCIP. In the previous IFCIP, "Hotel/Motel" was listed as a separate category. However, the fees presented were the fees of the Office/Institution category. The calculation of impact fees based 1,000 square feet of development cannot be repeated for Hotel and Motel land uses. For this reason, this category was not included in the present plan.

Changes in impact fees can also be compared if the units on which the fee is calculated are the same. For non-residential land uses, the same units are used in the current and previous Fire/EMS IFCIP. The non-residential land units are calculated and applied on the basis of square feet of development. For residential land uses, the current Fire/EMS IFCIP uses number of dwelling units for consistency in calculation and application of the fees.

The Fire/EMS land use categories differ somewhat from the land uses identified in the eight planning zones for Fire/EMS risk assessment. Planning zones for risk assessment are: Residential; Business; Mercantile; Educational; Health Care; Assembly; Industrial; and, Storage. (RHAVE, 2001) The land uses within the Fire/EMS IFCIP can be disaggregated for direct comparison with risk assessment planning zones.

Population

The population forecasts used in this Impact Fee Plan were prepared by the Mid-Region Council of Governments (MRCOG). (Preliminary Forecasts, 2010) The MRCOG population forecasts implemented in this Plan are the number of households in 2010 and 2020.

The population forecasts are conservative and represent a lower rate of growth than experienced in recent years. Other population forecasts for the unincorporated area of Bernalillo County incorporate higher growth rates. (Parrott, et. al., 2002) Given the uncertainty in all population forecasts, it is important that the Fire/EMS IFCIP be structured to permit emergency services to be extended to new development whatever growth rate is experienced.

Employment

Employment statistics for the unincorporated area of Bernalillo County are not currently reported by the Mid-Region Council of Governments or the Bureau of Business and Economic Research, the University of New Mexico. The number of households, current and forecast, is known. Jobs-to-household ratios are published for the Albuquerque Metropolitan Planning Area (AMPA). (2030 Metropolitan Transportation Plan) The average jobs-to-household ratio for the AMPA is 1.24. However, this includes the job centers in the incorporated area of the City of Albuquerque. The lowest published municipal ratio in the AMPA, 0.55 for the area west of the Rio Grande River, was used to represent the jobs-to-household ratio in the unincorporated area of Bernalillo County.

Implementation

Capital Costs

Capital cost is the replacement cost of existing capital Fire/EMS fixed and mobile capital assets. The Bernalillo County capital assets and cost are shown in Table 1.

**TABLE 1
BERNALILLO COUNTY FIRE/EMS CAPITAL ASSETS AND COST**

Facility	Square Feet	Replacement Costs		
		Land	Building	Total
District 31, Main Station	9,035	\$202,500	\$1,807,000	\$2,009,500
District 32, Main Station	8,850	\$223,200	\$1,770,000	\$1,993,200
District 32, Substation	13,578	\$180,000	\$2,715,600	\$2,895,600
District 33, Main Station	10,000	\$273,750	\$2,000,000	\$2,273,750
District 34, Main Station	8,445	\$180,000	\$1,689,000	\$1,869,000
District 35, Main Station	8,414	\$646,600	\$1,682,000	\$2,328,600
District 35, Substation	2,166	\$84,268	\$433,200	\$517,468
District 46, Main Station	6,920	\$1,408,500	\$1,384,000	\$2,792,500
District 46, Substation #1	2,000	\$89,159	\$400,000	\$489,151
District 46, Substation #2	4,000	\$79,362	\$800,000	\$879,362
District 27, Main	8,363	\$77,375	\$1,672,600	\$1,749,975

Station				
District 38, Main Station	8,850	\$180,000	\$1,770,000	\$1,950,000
District 38, Substation	8,160	\$180,000	\$1,632,000	\$1,812,000
District 36, Main Station	13,054	\$171,250	\$2,610,000	\$2,781,250
District 40, Main Station	7,020	\$1,047,000	\$1,404,000	\$2,451,000
District 41, Main Station	7,723	\$354,000	\$1,544,600	\$1,898,600
District 41, Substation	2,522	\$300,000	\$504,400	\$804,400
Atrium	50,046	\$795,000	\$10,009,200	\$10,804,200
District 43, Main Station	4,400	\$226,500	\$880,000	\$1,106,500
Total Station	183,546	\$6,698,456	\$36,707,600	\$43,406,056
	Units		Cost each	
Fire Engines	15		\$500,000	\$7,500,000
Ladders	3		\$900,000	\$2,700,000
Tenders	8		\$300,000	\$2,400,000
Brush	9		\$100,000	\$900,000
Rescue	12		\$120,000	\$1,440,000
Command	34		\$60,000	\$2,040,000
Specialty	22		\$100,000	\$2,200,000
Total Equipment	103			\$19,180,000
Total Capital Cost				\$62,586,056

The capital costs of Fire/EMS infrastructure equal \$62,586,056. The costs can be expressed in terms of cost per square foot of Fire/EMS capital assets, as shown in Table 1. The proportional residential cost per square foot can then be used in calculating the cost per household of the Fire/EMS capital investment.

**TABLE 2
FIRE/EMS COST PER HOUSEHOLD**

Level of Service Factor	Value
Fire/EMS Building Sq Ft	183,546
2010 Households	37,149
Fire/EMS Sq Ft/Household	4.94
Proportional Cost per Sq Ft	\$170.49
Cost per Household	\$842.22

The cost per household is used to represent the cost per unit for Single Family Dwelling Units. Multiple Family Dwelling Units and Mobile Homes have fewer persons per dwelling unit and less travel activity. The ITE Trip Generation Manual, 9th Edition, is used to adjust cost per household based on activity for each dwelling type. The Cost per Household adjustment is shown in Table 3. Costs are rounded to the nearest dollar when applied to the Impact Fee Schedule in Table 6.

**TABLE 3
FIRE/EMS COST FOR
RESIDENTIAL LAND USE**

Land Use Type	Trip Rate	Trip Rate Adjustment	FIRE/EMS Capital Cost
Single-Family	9.52	1	\$842.22
Multi-Family	6.65	0.70	\$589.55
Mobile Home	4.99	0.52	\$437.95

The number of jobs in the unincorporated area of Bernalillo County can be estimated from the jobs-to-household ratio. The ratio applied is 0.55. The same proportional cost per square foot is used because of the equal distribution of capital cost between residential and non-residential land use. The cost per job is presented in the following table.

**TABLE 4
FIRE/EMS COST PER EMPLOYEE**

Level of Service Factor	Value
Fire/EMS Building Sq Ft	183,546
2010 Households	37,149
2010 Jobs	20,432
Fire/EMS Sq Ft/Job	8.98
Cost per Sq Ft	\$170.49
Cost per Job	\$1,531.00

The number of jobs is used as the number of employees in the unincorporated area of Bernalillo County. The cost per employee can be translated into the cost per 1000 square feet of space for different land uses. (ITE Trip Generation Manual, 9th Edition) The capital cost per 1000 square feet for the Fire/EMS IFCIP non-residential land uses are shown in Table 5.

**TABLE 5
FIRE/EMS COST PER 1000 SQUARE FEET
NON-RESIDENTIAL LAND USE**

Land Use	1000Sq Ft per Employee	Cost Per Sq Ft
Commercial	0.56	\$0.86
Office and Institution	0.44	\$0.67
Industrial	0.48	\$0.73
Storage	0.08	\$0.12

The land use costs presented in Tables 3 and 5 are combined in the single Fire/EMS Impact Fee Schedule presented in Table 6. This is the fee schedule applied by land use for Fire/EMS service to new development.

**TABLE 6
FIRE/EMS IMPACT FEE SCHEDULE**

Land Use Type	Unit	Impact Fee/Unit	
Single-Family	Dwelling	\$842	Based on dwellings
Multi-Family	Dwelling	\$590	Based on dwellings
Mobile Home	Dwelling	\$438	Based on dwellings
Commercial	1.0 Sq Ft	\$.86	Based on square footage
Office/ Institution	1.0 Sq Ft	\$.67	Based on square footage
Industrial	1.0 Sq Ft	\$.73	Based on square footage
Storage	1.0 Sq Ft	\$.12	Based on square footage

References

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