Methodology and Calculation of City of Coral Gables Impact Fees for the University of Miami

August 25, 2008

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University of Miami Impact Fees

This report, a supplement to the *Impact Fee Study for the City of Coral Gables, Florida* report of August 17, 2007 (referred to as Technical Report), presents the data used to calculate impact fees for future development on the University of Miami campus based on its unique demand characteristics and relevant capital facilities. The impact fee Technical Report does not have a specific rate category for universities due to a lack of sufficient data on employment per development unit in the Institute of Transportation Engineers' 2003 Trip Generation. However, the distinctive character of a university campus, with a predominant student population, academic classroom buildings, on-site police patrol and wide-ranging on-campus recreation and park facilities and activities, presents circumstances significantly different from other development in the City to warrant the development of specific impact fee categories applicable to certain types of development on the University of Miami campus.

Following adoption of the City of Coral Gables impact and capacity fee schedule at the August 28, 2007 meeting of the City of Coral Gables Commission, the Commission directed the Consultants to determine the feasibility of creating a unique impact fee category (or categories) for future development on the University of Miami campus based on the methodology used in the City's impact fee report. The impact fees calculated in this supplemental report are based on data provided by the University of Miami and its consultants.

The following presents the overall approach to calculating the University of Miami impact fees for the University's future new housing and academic buildings as recommended by the City's impact fee consultants, TischlerBise, Inc. and attorney Susan Schoettle-Gumm. These proposed impact fee methodologies are applicable to certain types of new residential and nonresidential development on the University of Miami campus at the time of building permit application.

The University's planned facilities include new residential units (student housing and faculty/staff housing), new academic, research and retail buildings, and other unique uses. These facilities are included in the University of Miami Campus Area Development (UMCAD) plan and form the basis for the University's *2007 Regional Traffic Study and Concurrency Analysis*. Per the *2007 Regional Traffic Study and Concurrency Analysis*, Type 1 facilities are defined as those buildings that directly serve and support the student population, staff and faculty. Type 2 facilities generate activity not directly related to the student population. Type 1-2 facilities include a combination of Type 1 and Type 2 activities. The UM specific impact fees calculated in this report apply to Type 1 facilities, including the portions of Type 1-2 facilities that are Type

1. Type 2 facilities will be charged the same impact fees as imposed on other new development within the City.

IMPACT FEE APPROACH FOR UNIVERSITY OF MIAMI

As with the impact fees presented in the *Impact Fee Study for the City of Coral Gables, Florida* report, impact fees for the University of Miami's proposed future land uses on the main campus are calculated by first determining the applicable demand factor (person/student, employment or vehicle trips) for a particular land use type. In the existing impact fee study, demand from residential development is measured on the basis of population per housing unit. The source for persons per housing unit by housing type is the U.S. Census conducted in the City of Coral Gables. Persons per housing unit will be used for the University's planned faculty/staff housing units. The impact fee for student housing will be calculated on a per bed basis. This is discussed in more detail under "Residential Demand Characteristics – University of Miami."

Demand from nonresidential development is measured by employment or nonresidential vehicle trips per 1,000 gross square feet. The source for the nonresidential demand data in the existing impact fee report is the Institute of Transportation Engineers' 2003 Trip Generation. As stated previously, the existing impact fee report does not have a specific rate category for universities due to a lack of sufficient data on employment per development unit in Trip Generation. To remedy this, the University provided data on employment within its Type 1 academic buildings (non-housing). Average daily vehicle trips are provided in the *2007 Regional Traffic Study and Concurrency Analysis*, prepared by Keith and Schnars, P.A. In this analysis, the University distinguished between three different types of facilities: Type 1, Type 1-2 and Type 2. Impact fees are calculated in this report for future Type 1 academic buildings on the University campus. Impact fees for Type 1-2 (mixed use) and Type 2 (research, retail and office) nonresidential facilities will be calculated based on the characteristics of the proposed building using the existing impact fee schedule (Technical Report) and available ITE employment and trip rates. This is discussed in more detail under "Academic Building Demand Characteristics – University of Miami."

RESIDENTIAL DEMAND CHARACTERISTICS - UNIVERSITY OF MIAMI

The University of Miami plans to build student housing facilities to accommodate 2,020 new beds and 16 new faculty/staff housing units as shown in its UMCAD plan. A differentiation by type of housing is necessary to make residential impact fees for the University of Miami proportionate and reasonably related to the demand for public facilities. Population is an important demographic factor that helps account for variations in service demand by type of housing. Student housing will be calculated on a "per bed" basis, assuming one person per bed. A "per bed" approach is used for student housing as the specific configuration of future student housing units is subject to change. In addition, the number of new beds correlates directly with the demand for capital facilities from new students on campus.

The University plans to build a limited number of faculty/staff town home units. Persons per faculty/staff housing unit will reflect 2000 U.S. Census demographic information for single-family attached housing units in Coral Gables and is shown in Figure 1. The demand factor for the University of Miami's faculty/staff housing is persons per housing unit. Coral Gables' population in single family-attached housing units in 2000 is divided by the number of single family-attached housing units in 2000 to derive the persons per faculty/staff housing unit factor of 2.25 (897 persons / 398 housing units = 2.25 persons per single family-attached housing unit).

Figure 1. Persons per Faculty/Staff Housing Unit – University of Miami

Residential Demand - 2000 U.S. Census		
Population in Single Family-Attached [1]		897
Single Family-Attached Housing Units [2]	÷	398
Persons Per Single-Family Attached Housing Unit	=	**2.25**

[1] 2000 U.S. Census, Table H33.
[2] 2000 U.S. Census, Tables H31 and H32.

ACADEMIC BUILDING DEMAND CHARACTERISTICS - UNIVERSITY OF MIAMI

The University of Miami plans to build over 450,000 square feet of new Type 1 academic space as shown in its UMCAD plan. This excludes space for housing, demolished facilities, and Type 1-2 and Type 2 facilities. Detail on facility types is provided below. In addition to data on demand from residential development, the calculation of impact fees requires data on demand from nonresidential uses. This is typically measured on a 1,000 square feet of gross floor area basis. The source for the nonresidential demand data in the existing impact fee report is the Institute of Transportation Engineers' 2003 Trip Generation. This data provides employment and vehicle trips from a variety of nonresidential uses, including commercial/retail, office, and many other uses.

The existing impact fee Technical Report does not have a specific rate category for universities due to a lack of sufficient data on employment per development unit in Trip Generation. To remedy this, the University provided employment within its Type 1 academic (non-housing) facilities. The University also provided the square footage of these facilities in order to generate employment per 1,000 sq. ft. Employment in Type 1 academic buildings is divided by Type 1 academic building square footage to generate employees per square foot (2,982 employees / 2,258,707 sq. ft. = .0013 employees per sq. ft.). This is then multiplied by 1,000 to arrive at 1.32 employees per 1,000 square feet of floor area. This is shown in Figure 2.

Figure 2. Employment per 1,000 Sq. Ft. for Type 1 Academic Buildings (Non-Housing) – University of Miami

Type 1 Academic Buildings (Non-Housing)		
Employment in Type 1 Academic Buildings[1]		2,982
Type 1 Academic Building Square Footage[2]	÷	2,258,707
Employees Per Square Foot	=	**0.0013**
Employees per 1,000 Square Feet		**1.32**

[1] Source: University of Miami Campus Planning and Development. 2006-2007 FTE employment (faculty, staff, administration and contract employees) as reported by the University, less employment reported by the University for Type 1-2 facilities. Per the University's *2007 Regional Traffic Study*, Type 1 facilities are those buildings that directly serve and support the student population, staff and faculty. Type 2 facilities generate activity not directly related to the student population. Those facilities which are a combination of Type 1 and Type 2 are considered Type 1-2. The impact fee for the Type 1 portion of Type 1-2 facilities will be calculated based on the UM-specific academic building impact fee category presented in this report. Type 2 buildings and the Type 2 portion of Type 1-2 facilities will be charged the applicable impact fee rate as presented in the existing impact fee study (Technical Report) based on the specific use (office, retail, etc.) and gross square footage. The University has 9 facilities which are considered Type 1-2 and currently no Type 2 facilities.

[2] Source: University of Miami Campus Planning and Development. Square footage for Type 1 buildings from the University's *2006 Master Plan Development Program, UM Existing Facilities Report*. Square footage excludes non-floor area ratio (FAR) facilities, Type 2 buildings and housing facilities (student and faculty/staff). The University considers non-FAR buildings as those not occupied by people.

The University's *2007 Regional Traffic Study and Concurrency Analysis* provides vehicle trips from planned new development. This data is used to calculate the demand factor for the police impact fee. The planned Type 1 academic buildings in the traffic study (and associated trips) are shown in the Appendix.

The projected average daily vehicle trips associated with Type 1 academic buildings is divided by the planned net new Type 1 academic building square footage to generate average daily vehicle trips per square foot (1,289 average daily vehicle trips / 463,550 sq. ft. = .0028 trips per sq. ft.). This is then multiplied by 1,000 to arrive at 2.78 average daily vehicle trips per 1,000 gross square feet of floor area. This is shown in Figure 3.

Figure 3. Average Daily Vehicle Trips per 1,000 Sq. Ft. for Academic Type 1 Buildings – University of Miami

Type 1 Academic Buildings (Non-Housing)		
New Average Daily Vehicle Trips Associated with Planned Type 1 Academic Buildings[1]		1,289
Net New Planned Type 1 Academic Building Square Footage [1]	÷	463,550
Trips Per Gross Square Foot	=	**0.0028**
Trips per 1,000 Gross Square Feet		**2.78**

[1] *2007 Regional Traffic Study and Concurrency Analysis*, Prepared for the University of Miami by Keith and Schnars, P.A., July 30, 2007, "Table 1: UMCAD Project Types and Trips." Data for Type 1 Academic Buildings.

According to the University's *2007 Regional Traffic Study and Concurrency Analysis*, in addition to Type 1 academic and Type 1 housing facilities, the University plans to construct facilities that are akin to office and retail development in other areas of the City. These facilities are referred to as *Type 2* facilities in the traffic study. These office/retail developments would fall under the City's existing impact fee schedule. For unique uses such as theaters, museums, etc. (referred to as *Type 1-2* facilities in the traffic study), it is expected that the Type 1 academic portion of the facility will be calculated based on the demand factors discussed earlier in this section. The Type 2 portion of the facility would fall under the City's existing impact fee schedule. The City will select the most appropriate impact fee category to correspond with the proposed use. In the event the University determines that its demand will be less than that in the proposed impact fee category, the University may choose to petition the fee category selection. This is discussed in more detail in the impact fee ordinance.

CAPITAL COST PER DEMAND UNIT - UNIVERSITY OF MIAMI

The second piece of data required to make an impact fee calculation is the capital cost per demand factor (per person/student, job or vehicle trip). These cost factors are already defined in the City's impact fee study based on existing level of service standards. These factors will remain the same for the University impact fees, except where demand is reduced due to facilities available on the campus. The capital cost per demand unit for fire and general government remain the same as that defined in the City's impact fee study. Reductions are made to the parks and police impact fees. The approach for each of the capital facility categories considered in the University impact fee calculations is shown below.

Fire

The full cost for fire capital facilities as was included in the City-wide impact fees will be assessed for the University of Miami's planned development. Per the existing Coral Gables impact fee Technical Report, the cost per person (student or faculty/staff) for fire facilities is $1,069 and the fire capital facilities cost per job is $229.

General Government

Per the existing Coral Gables impact fee Technical Report, the cost per person (student or faculty/staff) for general government facilities is $562 and the general government facilities cost per job is $224. The consultants recommend that the full amount for general government facilities be assessed for the University of Miami's planned development. The general government facilities which form the basis for the impact fee calculation are those Coral Gables departments most impacted by new development. Those are: Planning, Building and Zoning, Development and Public Works (excluding utilities). These departments are responsible for shepherding new development through the City's planning process, conducting inspections, issuing building permits and planning for new capital facilities resulting from new growth. It is anticipated that as the University grows, it will place demands on the City for all these growth-related facilities similar to the demands generated by other new development in the City.

Parks

Student housing at the University of Miami is not expected to place demands on the City's park system due to the University's comprehensive park and recreation facilities. The University provided documentation supporting this through a comparison of park facility levels of service (acreage and amenities per student) of Campus park/recreation facilities with the City's park levels of service (see Appendix 2). As shown in Appendix 2, the University's park levels of service meets or exceeds those of the City in all areas except equipped play areas and shelters. City staff does not anticipate that UM students will place a demand on these facilities. The capital facility cost per student is calculated based on the cost per park improvement for equipped play areas and shelters. This is shown in Figure 4 below, totaling $10 per person/student.

Figure 4. Reduced Park Impact Fee for Student Housing

	Community Parks[1]	Unit Price[2]	Total Cost of Improvements
Equipped Play Area	7	$50,000	$350,000
Shelters*	7	$20,000	$140,000
		Total Improvements Cost	$490,000
		Population in 2006	45,561
		Improvements Cost Per Person/Student	$10

[1]Amenity inventory (provided by the Coral Gables Parks and Recreation Department for community parks) revised to reflect those improvements for which the University does not meet or exceed the City's level-of-service.

[2]Unit costs provided by the City of Coral Gables, except where noted with an "*". Unit cost for item marked with an "*" is from relevant parks and recreation impact fee studies conducted by TischlerBise.

No discount to park facilities costs is made for faculty housing as it is expected that these units will place demands on the City's park and recreation facilities comparable with any other housing in the City. Per the existing Coral Gables impact fee Technical Report, the cost per person for parks to be used in calculating the Park Impact Fee applicable to faculty housing is $2,530.

Police

The University requested a reduction to the police impact fee due to the services it provides through its University Police Division. The University of Miami Police Division (UMPD) operates in partnership with the Coral Gables Police Department (CGPD), which provides the legal framework for the University Police Division to operate. In addition, CGPD responds to emergencies on the campus, trains University police officers, receives and dispatches all emergency calls, reviews and processes reports prepared by UMPD personnel, stores property and evidence impounded by UMPD, and investigates violent crimes, sexual batteries and other matters of significance on the campus.

In order to determine an appropriate reduction to the police impact fee, CGPD worked with the UMPD to review calls for service data to the campus handled by the City and the University. The following presents the methodology used to discount the police impact fee in recognition of law enforcement capital facilities costs avoided by the City due to the facilities provided by UM.

In consultation with UMPD, CGPD considered the amount of additional law enforcement capital facilities that would be needed if the City were to take over police service on the campus

at the City's existing level of service (meaning that the City would provide the level of service provided city-wide, and would not provide some services currently provided by the University that are not considered a regular police function). This analysis was conducted in order to determine what capital costs the City will avoid in the future due to the University's police service.

As discussed in the CGPD memos of Jan. 8, 2008 and Jan. 31, 2008, CGPD examined calls to the campus from Oct. 1, 2006 to Sept. 30, 2007 (Attachment 3). CGPD estimates that if the Department were to be responsible for providing police service on the campus, there would be an estimated 4,738 calls for service annually with an average call time of 1 hour and 25 minutes involving 1.3 officers and vehicles per call. Based on the quantity and nature of the calls to the campus, and considering campus density and demographic factors, CGPD estimates that if it were to provide service to the campus, it would staff the University with 2 police officers patrolling 24 hours a day / 7 days a week (which equates to 10 full-time officers), 2 detectives investigating property crimes and 1 detective investigating crimes against persons. This brings the total number of officers to 13. As each officer is assigned a car, this equates to the same number of vehicles.

Police Vehicles and Equipment

To make the appropriate reduction to the vehicle/equipment portion of the police impact fee, the thirteen vehicles that would be needed to serve the University are added to the existing fleet of 154 patrol vehicles. This brings the total vehicles to 167. The vehicles needed for the University represents 7.8% of the total. This percentage is then applied as a discount in the calculation of the impact fee's police vehicle/equipment component (Figure 5).

Figure 5. Police Impact Fee Reduction – Vehicles/Equipment

Police Impact Fee Reduction - Vehicle/Equipment	
Existing Coral Gables Patrol Vehicles	154
Additional Vehicles for University of Miami[1]	13
Total Vehicles	**167**
UM Share of Total	**7.8%**

[1]City of Coral Gables Police Department reports that it would need 13 officers in order to provide the city-wide level of service to the University of Miami campus. That includes 10 patrol officers (2 officers patrolling 24 hours a day / 7 days a week), 2 detectives investigating property cries such as burglary, theft, and auto theft and 1 detective investigating crimes against persons such as robbery, stalking and harassment. Each officer is assigned a vehicle, for a total of 13 vehicles.

Figure 6 shows the inventory of police vehicles used to determine the level of service and cost per demand unit in the impact fee study. This percentage reduction shown in Figure 5 is applied to the cost for police patrol cars (item #1 totaling $5.3 million), resulting in a vehicle cost reduction of $419,581 ($5,390,000 x 7.8% = $419,581). This amount is deducted from the total, for a revised total vehicle/equipment cost of $8.3 million ($8,807,400 - $419,581 = $8,387,819). The revised costs per demand unit are calculated by multiplying the revised total cost by the proportionate share factor (69% residential and 31% nonresidential) and dividing by the respective demand factor (population or vehicle trips). This results in a cost per person of $127.52 and per trip of $10.31.

Figure 6. Police Vehicles and Equipment Reduction for University of Miami

Incremental Expansion Cost of Vehicles & Equipment (University of Miami)

Vehicle Type	# of Units[1]	Replacement Cost Per Unit[1,2]	Total Cost
Car Police Patrol Equipped (code 200)	154	$35,000	$5,390,000
Trailer (code 560)	10	$12,000	$120,000
Car Passenger, Compact (code 125)	1	$16,000	$16,000
Car Passenger, Standard (code 150)	7	$19,000	$133,000
Car Passenger, Detective Equipped (code 175)	23	$29,000	$667,000
Utility Vehicle 2&4WD (code 230)	27	$25,000	$675,000
Motor Home, Crime Watch Equipped (code 245)	3	$112,500	$337,500
Truck, Van (code 315)	12	$23,750	$285,000
Pickup Truck, 1 Ton (code 325)	1	$32,000	$32,000
Pickup Truck, 3/4 Ton (code 310)	1	$28,700	$28,700
Boat Special Work (code 662)	1	$16,500	$16,500
Boat, Small Equipped (code 660)	1	$18,700	$18,700
Boat Police Patrol Equipped (code 675)	3	$133,500	$400,500
Motor Cycle, Police Patrol Equipped (code 225)	11	$28,000	$308,000
Pickup Truck, 1/2 Ton (code 300)	2	$19,750	$39,500
Power Plant, Standby (code 705)	4	$85,000	$340,000
Total	**261**		**$8,807,400**
Vehicle Reduction for University of Miami (7.8% of patrol vehicle inventory)			$419,581
Revised Total			**$8,387,819**

Development Type	Proportionate Share	2006 Demand Units	Cost per Demand Unit
Residential	69%	45,561 Persons	$127.52
Nonresidential	31%	249,946 Nonres ADV Trips	$10.31

Residential LOS Vehicles per 1,000 Persons	3.97
Nonresidential LOS Vehicles per 1,000 Vehicle Trips	0.32

[1]Source: Vehicle inventory and cost is provided by Coral Gables Automotive Department.

[2]Those vehicles shown as "equipped" include the cost of a computer, hardware, brackets, antennas/cables, installation labor, and ancillary equipment. Costs range from $7,500 to $8,500 per vehicle, and are provided by the Coral Gables Information Technology Department.

Police Station Space

To make the appropriate reduction to the station space portion of the police impact fee, the Consultant first examined the existing relationship between sworn officers and station square footage, including building space for support services such as evidence and records storage. As shown in Figure 7, there is currently 265 sq. ft. per officer (49,349 sq. ft. / 186 sworn officers = 265 sq. ft. per officer). As discussed previously, the CGPD estimates 13 officers that would be needed to serve the University at the City's existing level of service. This brings the total additional station square feet to 3,449 sq. ft. (13 officers x 265 sq. ft. per officer = 3,449 sq. ft.) This brings the total station space sq. ft. to 52,798. The station space needed for the University represents 6.5% of the total. This percentage is then applied as a discount in the calculation of the impact fee's police station space component (Figure 8).

Figure 7. Police Impact Fee Reduction – Station Space

Police Impact Fee Reduction - Station Space	
Existing Level-of-Service	
Existing Coral Gables Police Station Sq. Ft.	49,349
Existing Sworn Officers	186
Level of Service - Sq. Ft./Officer	265
Space to Serve UM	
Additional Officers for University of Miami[1]	13
Level of Service - Sq. Ft./Officer	265
Additional Station Sq. Ft. to Serve UM	3,449
UM Share of Station Space	
Existing Coral Gables Police Station Sq. Ft.	49,349
Additional Station Sq. Ft. to Serve UM	3,449
Total Square Feet	**52,798**
UM Share of Total	**6.5%**

[1]City of Coral Gables Police Department reports that it would need 13 officers in order to provide the city-wide level of service to the University of Miami campus. That includes 10 patrol officers (2 officers patrolling 24 hours a day / 7 days a week), 2 detectives investigating property cries such as burglary, theft, and auto theft and 1 detective investigating crimes against persons such as robbery, stalking and harassment. Each officer is assigned a vehicle, for a total of 13 vehicles.

Figure 8 shows the station space square footage and cost factors used to determine the level of service and cost per demand unit in the impact fee study. This percentage reduction shown in Figure 7 is applied to the cost for station space, resulting in a station space cost reduction of

$1,112,212 ($17,025,405 x 6.5% = $1,112,212). This amount is deducted from the total, for a revised total station space cost of $15.9 million ($17,025,405 - $1,112,212 = $15,913,193). The revised costs per demand unit are calculated by multiplying the revised total cost by the proportionate share factor (69% residential and 31% nonresidential) and dividing by the respective demand factor (population or vehicle trips). This results in a cost per person of $241.93 and per trip of $19.56.

Figure 8. Police Station Space Reduction for University of Miami

Incremental Expansion Cost of Police Station (University of Miami)

Current Facilities	Square Feet[1]	Cost per Square Foot	Total Cost[2]
Police Station	49,349	$345	$17,025,405
Total	**49,349**	**$345**	**$17,025,405**
Station Space Reduction for University of Miami (6.5% of total cost)			$1,112,212
Revised Total			**$15,913,193**

Development Type	Proportionate Share	2006 Demand Units	Cost per Demand Unit
Residential	69%	45,561 Persons	$ 241.93
Nonresidential	31%	249,946 Nonres ADV Trips	$ 19.56
Sq Ft Per Person	0.75		
Sq Ft Per Nonres Trip	0.06		

[1]Source: Coral Gables Public Works Department. The Police Department shares the Public Safety Building with the Fire Department (Fire Station #1) and other general government functions. The square footage shown is the space allocated to the Police Department.

[2]Source: Cost for new construction provided by the Coral Gables Police Department to be $330-$360 per sq. ft.; $345 per sq. ft. used here as the average.

Police Land

To make the appropriate reduction to the land portion of the police impact fee, the Consultant first examined the existing relationship between sworn officers and station acreage. As shown in Figure 9, there is currently .004 acre per officer (.80 acres / 186 sworn officers = .004 acre per officer). As discussed previously, the CGPD estimates 13 officers that would be needed to serve the University at the City's existing level of service. This brings the total additional station land to .06 acre (13 officers x .004 acres per officer = .06 acre). This brings the total station land to .85 acre. The station land needed for the University represents 6.5% of the total. This percentage is then applied as a discount in the calculation of the impact fee's police land component (Figure 10).

Figure 9. Police Impact Fee Reduction – Land

Police Impact Fee Reduction - Land	
Existing Level-of-Service	
Existing Coral Gables Police Station Acreage	0.80
Existing Sworn Officers	186
Level of Service - Acres/Officer	0.004
Acreage to Serve UM	
Additional Officers for University of Miami[1]	13
Level of Service - Acres/Officer	0.004
Additional Acreage to Serve UM	0.06
UM Share of Acreage	
Existing Coral Gables Police Station Acreage	0.80
Additional Acreage to Serve UM	0.06
Total Acreage	**0.85**
UM Share of Total	**6.5%**

[1]City of Coral Gables Police Department reports that it would need 13 officers in order to provide the city-wide level of service to the University of Miami campus. That includes 10 patrol officers (2 officers patrolling 24 hours a day / 7 days a week), 2 detectives investigating property cries such as burglary, theft, and auto theft and 1 detective investigating crimes against persons such as robbery, stalking and harassment. Each officer is assigned a vehicle, for a total of 13 vehicles.

Figure 10 shows the station space site acreage and cost factors used to determine the level of service and cost per demand unit in the impact fee study. This percentage reduction shown in Figure 9 is applied to the cost for land, resulting in a land cost reduction of $193,094 ($2,954,901 x 6.5% = $193,094). This amount is deducted from the total, for a revised total land cost of $2.7 million ($2,954,901 - $193,094 = $2,761,897). The revised costs per demand unit are calculated by multiplying the revised total cost by the proportionate share factor (69% residential and 31% nonresidential) and dividing by the respective demand factor (population or vehicle trips). This results in a cost per person of $41.98 and per trip of $3.39.

Figure 10. Police Land Reduction for University of Miami

Incremental Expansion Cost of Land (University of Miami)

Current Facility Site Area	Acres[1]	Cost per Acre[2]	Total Cost
Police Station	0.80	$3,700,000	$2,954,901
Total	**0.80**	**$3,700,000**	**$2,954,901**
Land Reduction for University of Miami (6.5% of total cost)			$193,034
Revised Total			**$2,761,867**

Development Type	Proportionate Share	2006 Demand Units	Cost per Demand Unit
Residential	69%	45,561 Persons	$ 41.98
Nonresidential	31%	249,946 Nonres ADV Trips	$ 3.39
Acres Per 1,000 Persons	0.0121		
Acres Per 1,000 Nonres Trips	0.0010		

[1]Source: Coral Gables Public Works Department. The Police Station is located in the Public Safety Building, along with the Fire Department and other general government functions (parking, human resources and IT). The total site area for the building is 1.4 acres. A share of the site area is used here equal to the Police Department's space allocation in the Public Safety Building (56% for Police).

[2]Source: Acquisition cost per acre from 2006 appraisal conducted by Robert E. Gallaher, MAI CRE and provided to the Coral Gables Development Department for the University Baptist Church property. The residentially-zoned parcels total 3.65 acres, with an estimated market value of $13.5 million. The City expects that future police station development will take place on land zoned for residential use.

Police Impact Fee Study

No reduction is made to the police impact fee study component. The cost is $3.74 per person and $1.02 per trip.

Summary of Police Impact Fee Components

Figure 11 summarizes the police impact fee reduction for the University. The total police cost per person for the University is $415.17 and $34.28 per trip. This results in a reduction of $22.49 per person and $1.11 per trip from the adopted fee study cost.

Figure 11. Police Impact Fee Reduction for University of Miami - Summary

	Adopted Fee Study Cost	Revised UM Cost	Reduction
Total Cost Per Person	$ 437.66	$ 415.17	$ 22.49
Total Cost per Nonres ADV Trip	$ 35.39	$ 34.28	$ 1.11

SUMMARY OF RESIDENTIAL DEMAND AND CAPITAL COST FACTORS – UNIVERSITY OF MIAMI

Figure 12 provides a summary of the residential demand factors used to calculate the impact fee for the University of Miami (discussed under "Residential Demand Characteristics – University of Miami") along with the relevant capital cost factors per demand unit (discussed under "Capital Cost per Demand Unit – University of Miami").

Figure 12. Residential Demand and Cost Factors – University of Miami

	Standards:	
	Student Housing	Faculty/Staff Housing
Persons Per Bed		
Student Housing[1]	1.00	
Persons Per Unit		
Faculty/Staff Housing[1]		2.25
Level Of Service		
Park Cost per Person[2]	$10	$2,530
Police Cost per Person[3]	$415	$415
Fire Cost Cost per Person	$1,069	$1,069
General Government Cost Per Person	$562	$562
Total Capital Cost per Person	**$2,056**	**$4,576**

[1] Demand from student housing is calculated on a per bed basis, assuming one person per bed. Persons per housing unit for faculty/staff housing from the 2000 U.S. Census for single-family attached housing units.

[2] A reduced park component is included for student housing as the University has provided documentation that its park levels of service exceed those of the City in all but two categories: equipped play areas and shelters. The University and City anticipate that student park usage will be limited to the University. Faculty/staff housing units are expected to place demands on the City's park system, so no reduction is provided for this housing type.

[3] The police cost per trip is reduced to reflect those capital facilities costs avoided by the City due to the University's policing function.

PROPOSED RESIDENTIAL IMPACT FEE SCHEDULE – UNIVERSITY OF MIAMI

To calculate the student housing residential impact fees for the University of Miami, persons per bed is multiplied by the capital cost per person (Figure 12). To calculate the faculty/staff residential impact fees for the University, persons per housing unit is multiplied by the capital cost per person. The proposed residential impact fee schedule for the University of Miami is shown in Figure 13.

Figure 13. Proposed Residential Impact Fee Schedule – University of Miami

	Police	*Fire and EMS*	*General Government*	*Parks*	*TOTAL*
Residential	Per Housing Unit				
Student Housing (1 person/bed)	$415	$1,069	$562	$10	$2,056
Faculty/Staff Housing (2.25 PPHU)	$936	$2,410	$1,266	$5,701	$10,313

SUMMARY OF ACADEMIC BUILDING DEMAND AND CAPITAL COST FACTORS – UNIVERSITY OF MIAMI

Figure 14 provides the demand factor used to calculate the Type 1 Academic Building (Non-Housing) impact fee for the University of Miami (discussed under "Academic Building Demand Characteristics – University of Miami") along with the relevant capital cost factors per demand unit (discussed under "Capital Cost per Demand Unit – University of Miami"). Future Type 2 facilities and the Type 2 portion of Type 1-2 facilities developed on the campus will be charged the applicable nonresidential impact fee rate as calculated in the Technical Report (August 17, 2007) based on the specific use (office, retail, etc.) and gross square footage.

Figure 14. Academic Building Demand and Cost Factors – University of Miami

Demand Factor Per 1,000 Square Feet of Gross Floor Area[1]	*Employees*	*Average Daily Trips*
Type 1 Academic Building (Non-Housing)	1.32	2.78
Trip Adjustment Factor		50%
Nonresidential		
Level Of Service	Per Job	
Fire Cost Cost per Employee	$229	
General Government Cost Per Employee	$224	
Total Capital Cost per Employee	**$453**	Per Trip
Police Cost per Trip[2]		$34
Total Capital Cost per Trip		**$34**

[1] Employees per 1,000 sq. ft. for Type 1 Academic Building (Non-Housing) derived from data provided by the University of Miami. Average Daily Vehicle Trips from the University's 2007 *Regional Traffic Study and Concurrency Analysis*.

[2] The police cost per trip is reduced to reflect those capital facilities costs avoided by the City due to the University's policing function.

PROPOSED ACADEMIC BUILDING IMPACT FEE – UNIVERSITY OF MIAMI

To calculate the fire and general government components of the Type 1 Academic Building (Non-Housing) impact fee for the University of Miami, employment per 1,000 sq. ft. is multiplied by the total capital cost per job shown in Figure 14, then divided by 1,000 for a cost per gross sq. ft. To calculate the police component of the Type 1 Academic Building (Non-Housing) impact fee for the University of Miami, trips per 1,000 sq. ft. are multiplied the trip adjustment factor and then by the total capital cost per trip shown in Figure 14. This figure is then divided by 1,000 for a cost per gross sq. ft. The proposed Type 1 Academic Building (Non-Housing) impact fee schedule for the University of Miami is shown in Figure 15.

Figure 15. Proposed Type 1 Academic Building (Non-Housing) Impact Fee – University of Miami

	Police	*Fire and EMS*	*General Government*	*TOTAL*
	Per Gross Square Foot of Floor Area			
Nonresidential				
Type 1 Academic Building (Non-Housing)[1]	$0.05	$0.30	$0.30	$0.65

[1] Employees per 1,000 sq. ft. for Type 1 Academic Building (Non-Housing) derived by dividing total employees in existing Type 1 facilities by the square footage for existing Type 1 buildings (excluding non-FAR and housing buildings) to arrive at a 1.32 employees per 1,000 sq. ft. Trips are from the University's Traffic Study. Future Type 2 facilities and the Type 2 portion of Type 1-2 facilities developed on the campus will be charged the applicable impact fee rate as calculated in the Technical Report based on the specific use (office, retail, etc.) and gross square footage.

The data incorporated in the development of the UM specific impact fees shall be updated in conjunction with future updates of the City's impact fee calculations. Per the City's impact fee ordinance, UM will be responsible for providing any data and information needed by the City related to future updates of the UM specific impact fees.

Appendix 1: Average Daily Vehicle Trips Anticipated From Planned Type 1 Academic Buildings

Impact fees are calculated in this report for future Type 1 academic buildings on the University of Miami (UM) campus. The police component of this impact fee is calculated on the basis of average daily vehicle trips per 1,000 gross square feet. Projected average daily vehicle trips are provided in the *2007 Regional Traffic Study and Concurrency Analysis,* prepared by Keith and Schnars, P.A., reflecting the facilities included in the *University of Miami Campus Area Development* plan. The trip rate per 1,000 gross square feet for Type 1 academic facilities is derived from data presented in Table 1 of the traffic study. The planned net new square footage of these facilities and corresponding new average daily vehicle trips are summarized in Figure A-1 below.

Figure A-1. Average Daily Vehicle Trips from Planned Type 1 Academic Buildings

Project Name	Gross SF	Demolish Gross SF	Net New Gross SF	Building Category	Type	New Average Daily Vehicle Trips
University Hall	30,000		30,000	Academic	1	83
Replacement of Whitten Learning Center	45,054	45,054	0	Academic	1	0
Otto G. Richter Library and Law School Addition	140,000		140,000	Academic	1	390
School of Education	60,000		60,000	Academic	1	167
MBF School of Business Admin - Phase 1 Academic	42,000		42,000	Academic	1	117
School of Architecture ADA Addition	4,000		4,000	Academic	1	11
Art and Architecture College (Academics)	74,550	69,109	5,441	Academic	1	15
Center for Music Leadership and Learning	70,000	18,095	51,905	Academic	1	144
School of Music Academic Facilities Replacement	94,000	43,336	50,664	Academic	1	141
MBF School of Business Admin - Phase 2 Academic	43,672	11,230	32,442	Academic	1	90
Hecht Center Addition	50,000	2,902	47,098	Academic	1	131
TOTAL	**653,276**	**189,726**	**463,550**			**1,289**

[1] *2007 Regional Traffic Study and Concurrency Analysis*, Prepared for the University of Miami by Keith and Schnars, P.A., July 30, 2007, "Table 1: UMCAD Project Types and Trips." Data for Type 1 Academic Buildings.

The projected average daily vehicle trips associated with Type 1 academic buildings is divided by the planned net new Type 1 academic building square footage to generate new average daily vehicle trips per square foot (1,289 average daily vehicle trips / 463,550 sq. ft. = .0028 trips per sq. ft.). This is then multiplied by 1,000 to arrive at 2.78 average daily vehicle trips per 1,000 gross square feet of floor area. This is shown in Figure 3 of this report.

University of Miami
Recreation Level of Service Analysis
February, 2008

Acreage	
Park Type	**Acreage**
Passive Open Space (Lee Lincoln)	5.517
Active Open Space (Intramural Fields)	8.186
Total	13.703
Population in Fall 2007	12,405 FTE students
University LOS - Acres per 1,000 FTE	**1.105**
Coral Gables LOS - Acres per 1,000 residents	0.62

Community Amenities						
Amenity Type	**Wellness Center**	**Other**	**Total**	**University LOS - Amenities per 1,000 FTE**	**LOS - Coral Gables**	**Difference**
Fitness Room	1		1			
Tennis Courts		16	16	**1.290**	0.68	0.610
Racquetball Courts	6		6	**0.484**	0.088	0.396
Squash Courts	2		2	**0.161**	0	0.161
Basketball Courts	4	4	8	**0.645**	0.11	0.535
Ball Diamonds		1	1	**0.081**	0.044	0.037
Volleyball	4 (convert basketball)		4	**0.323**	0.044	0.279
Sand Volleyball		2	2	**0.161**	0	0.161
Jogging Track	1	1	2	**0.161**	0	0.161
Playing Fields	5		5	**0.403**	0.044	0.359
Swimming Pool	1	1	2	**0.161**	0.022	0.139
Equipped Play Area	n/a	n/a		**n/a**	0.154	n/a
Shelters	n/a	n/a		**n/a**	0.154	n/a

Facilities	
Wellness Center	120,000 sf
University Center	203,550 sf
Activity Center	n/a
Total	323,550 sf
Population in 2007	12405 FTE students
University LOS - Sq.Ft. per person	**26.08**
Coral Gables LOS - Sq.Ft. per person	2.11

Vehicles	
Vehicle Type	**No. of Units**
Car Passenger, Standard (code 150)	2
Roller, Small (code 710)	3
Turf Mower (code 595)	8
Truck, Van (code 315)	5
Pickup Truck, 3/4 Ton (code 310)	15
Total	33
Population in 2007	12405 FTE students
University LOS - Vehicles per 1,000 persons	**2.66**
Coral Gables LOS - Vehicles per 1,000 persons	0.15

CITY OF CORAL GABLES

- MEMORANDUM -

TO: **ANA M. BAIXAULI**
ASSISTANT CHIEF OF POLICE

DATE: JANUARY 8, 2008

FROM: MAJOR RAUL PEDROSO
TECHNICAL SERVICES DIVISION

SUBJECT:
UNIVERSITY OF MIAMI IMPACT STUDY

Records were examined in order to determine what the impact to the Coral Gables Police Department (CGPD) Staffing Structure would look like if this agency assumed police services for the University of Miami (maintaining the current City's level of service). The time period reviewed was fiscal year October 1, 2006 through September 30, 2007 (FY 2006-07).

There were 9,696 calls for service (CFS) FY2006-07 on campus (includes all University property). Upon reviewing the total calls, 4,958 were not included in the average as they have been determined to be not of the nature that the CGPD would normally handle on a regular basis, or they are CFS that were handled by the CGPD on the campus.

The final number of CFS that the CGPD would respond to and handle if the agency was to be responsible for providing police service to the campus is estimated to be 4,738 annually with an average call time of 1 hour and 25 minutes (first officer to arrive to last officer to clear) involving 1.3 officers and vehicles per call.

CFS excluded when examining the records for the campus was done so as follows:

- 4,355 area checks (13AC) were taken on campus by the University of Miami Police (UMPD) accounting for 45% of all CFS. This nature code (13AC) is commonly used by police patrol units when conducting directed patrols of specific areas or facilities. They are used to account for patrol efforts. For example, an officer assigned to a zone will take a 13 AC at a building not because they observe suspicious activity or were called by someone for assistance but rather to document that they are patrolling the building and its immediate surroundings. Patrolling is a standard function of all patrol officers; therefore the data should not be entirely included as additional work that would have to be done by CGPD. 50% of the 13AC CFS on campus were excluded.

- 104 fire alarms were responded to by UMPD on campus. The CGPD only responds to approximately 2% of all fire alarms (handled by the Fire Department). For the purposes of this review 80 of the CFS were excluded.

- To establish an estimate of CFS handled by CGPD on the campus, we reviewed every call in March of 2007. In that month, there were 837 CFS. There were 45 calls handled by CGPD 10 of which were on campus. This results in CGPD handling on average 1.2%

of all calls on campus. On average, 4.2% of all calls in zone 207U involve only CGPD are not related to the University.

These numbers average out to 116 calls annually that are handled by or responded to by the CGPD for the University. On average, there are 407 CFS annually in zone 207U that are not related to the University and are handled by the CGPD.

The total CFS Citywide including those in 207U for the 2006-07FY was 86,288 with an average call time of 1 hour and 4 minutes.

During the 2006-07 FY, the University of Miami assisted the CGPD by handling 61 CFS not on campus at the request of the CGPD. During the same time, the CGPD handled an average of 116 CFS for the University.

Additional work by the CGPD for the University not represented in CFS is major events and all related planning. One example of work handled by CGPD for campus related activities was the 2004 Presidential Debate. The CGPD dedicated an estimated 1,950 personnel hours to planning alone for that event. Planning and preparation was not reimbursed by the University.

Copies to:

Lieutenant Michael Frevola
Lieutenant William Gerlach
Ms. Yvonne Dawson/ Tishler Bise

CITY OF CORAL GABLES

-MEMORANDUM-

TO: **M.L. HAMMERSCHMIDT**
CHIEF OF POLICE

DATE: JANUARY 31, 2008

FROM: MAJOR RAUL PEDROSO
TECHNICAL SERVICES DIVISION

SUBJECT:
UNIVERSITY OF MIAMI
PROJECTED DEMAND FOR
RESOURCES

The Coral Gables Police Department (CGPD) currently provides significant support and establishes not only the legal authority but the required training, policy/ procedures and framework for the University of Miami Police Department (UMPD). Specifically, all emergency calls (E9-1-1) from the campus are received at the CGPD Communications Center. CGPD personnel are immediately dispatched to avoid delay. In some cases the CGPD will handle the entire event. UMPD personnel normally are allowed to handle the matter and conduct required investigations. All reports prepared by UMPD personnel are reviewed by CGPD supervisory staff and then processed by the CGPD Data Management & Records Section. Property and Evidence impounded by UMPD is securely stored at the CGPD. Violent crimes, Sexual Batteries, and other matters of significance are investigated by CGPD investigators.

The UMPD does provide basis police services to the campus including the investigation and follow up of most crimes. An analysis of Calls for Service (CFS) at the campus was conducted (memorandum subject UNIVERSITY OF MIAMI IMPACT STUDY dated 01/08/2008). The analysis provided an estimated number of CFS that the CGPD would respond to based on the level of service provided to its citizenry and business community if it were to assume all police responsibilities for the University. The analysis also indicated the police personnel/ vehicles that the UMPD needs to respond to and handle its CFS on average.

Examining the quantity and nature of the events in the analysis, the CGPD would normally staff one officer 24 hours per day 7 days per week if it were to take the added responsibility of a typical area with such a call volume. The CGPD recognizes, however, that the University of Miami presents a more complex environment with a significantly younger and denser population than the average Coral Gables neighborhood or area. As a result, the CGPD submits that if charged with providing basic police service on campus including the investigation of all crimes, it would staff the University as follows:

- 2 Police Officers patrolling 24 hours a day / 7 days a week
- 2 Detectives investigating Property Crimes such as burglary, theft, and auto theft
- 1 Detective investigating Crimes Against Persons such as robbery, stalking, and harassment

In order to staff accordingly, the CGPD would have to hire an additional 13 sworn Police Officers and increase the vehicle inventory by the same number. This number is based on the accepted estimate that five employees are required to maintain one position staffed 24 hours a day/ 7 days a week. The number of detectives is based on the number of estimated crimes that would require follow up (450 Property Crimes & 170 Crimes Against Persons per year). The numbers of investigations on campus when examined and compared to the average CGPD investigator caseload, represents the necessary personnel to ensure current levels of service to City residents and businesses are not compromised. All data used to determine the level of service, call volume, and resource demand was based on a study / analysis by CGPD Technical Services personnel of CFS at the University of Miami campus for the period of October 1, 2006 through September 30, 2007.

Reviewed by: _____ _____
Assistant Chief of Police A. Baixauli Date

_____ _____
M.L. Hammerschmidt, Chief of Police Date

Copies to Assistant Chief of Police Richard Naue
Lieutenant Michael Frevola
Yvonne Dawson/ Consultant