D R A F T

Prepared for

City of Coral Gables, Florida

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EXECUTIVE SUMMARY

TischlerBise updated Coral Gables impact fees for Police, Fire, Municipal Facilities, Parks/Recreation and Sewer Capacity. In addition, this report includes a new impact fee for Mobility. In contrast to the previous study, Administrative Charges related to the collection of impact fees are derived cumulatively rather than individually for each infrastructure type.

Impact fees are one-time payments used to construct system improvements needed to accommodate new development. An impact fee represents new development's proportionate share of capital facility needs. Impact fees do have limitations, and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive portfolio to ensure provision of adequate public facilities needed to serve new development. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies.

General Legal Framework

This section summarizes the authority under which impact fees are imposed in Florida, but is not exhaustive of every aspect of the body of law now related to impact fees. The authority for Florida jurisdictions to adopt and collect impact fees to offset the demand new development creates for infrastructure is well established. St. Johns County v. Northeast Florida Builders Association (583 So. 2d 635, 638 Fla. 1991) states, "The use of impact fees has become an accepted method of paying for public improvements that must be constructed to serve new growth."[1] State statutes specifically "encourage the use of innovative land development regulations which include provisions such as … impact fees," and Florida courts have upheld local government's authority to adopt fees under general home rule and police power theories.[2]

In 2006, the Florida legislature passed the "Florida Impact Fee Act," which recognized impact fees as "an outgrowth of the home rule power of a local government to provide certain services within its jurisdiction" (§163.31801(2), Fla. Stat). The statute – concerned mostly with procedural and methodological limitations – did not expressly allow or disallow any particular public facility type from being funded with impact fees. The Act did specify procedural and methodological prerequisites, most of which were common to the practice already. Subsequent amendments to the Act, in 2009, removed prior notice requirements for impact fee reductions (but not increases) and purported to elevate the standard of judicial review.[3]

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[1] Citing Home Builders & Contractors Ass'n. v. Palm Beach Cty., 446 So.2d 140 (Fla. 4th DCA 1984); Hollywood, Inc. v. Broward County, 431 So.2d 606 (Fla. 4th DCA 1983).

[2] See §163.3202(3), Fla. Stat.; see also Home Builders & Contractors Ass'n., 446 So.2d 140.

[3] The "Florida Impact Fee Act" currently reads as follows:

163.31801 Impact fees; short title; intent; definitions; ordinances levying impact fees.

(1) This section may be cited as the "Florida Impact Fee Act."

(2) The Legislature finds that impact fees are an important source of revenue for a local government to use in funding the infrastructure necessitated by new growth. The Legislature further finds that impact fees are an outgrowth of the home rule power of a local government to provide certain services within its jurisdiction. Due to the growth of impact fee collections and local governments' reliance on impact fees, it is the intent of the

Under Florida law, impact fees must comply with the "dual rational nexus" test, which requires "a reasonable connection, or rational nexus, between the need for additional capital facilities and the growth in service units generated by new development. In addition, the government must show a reasonable connection, or rational nexus, between the expenditures of the funds collected and the benefits accruing to the subdivision," (St. Johns County, 583 So.2d at 637 quoting Hollywood, Inc. 431 So. 2d at 611-12). Impact fee studies, generally establish the pro rata, or proportionate "need" for new infrastructure, and implementing ordinances ensure that new development paying the fees receives a pro rata "benefit" from their expenditure.

Coral Gables is updating its impact fee study to provide infrastructure needed to meet demands created by new development within the city limits. The need for these services, and the infrastructure necessary to provide them, is driven by residential and/or nonresidential development. Therefore, as vacant land converts to residential and nonresidential uses, or as existing uses expand, the demand imposed upon the City for additional capital facilities will increase. The need for additional capacity for new development is shown through established infrastructure standards and the City's Capital Improvement Plan (CIP). Hollywood, Inc. (431 So.2d at 611) holds that a plan for providing facilities at a reasonable level of service demonstrates "a reasonable connection between the need for additional park facilities and the growth in population". Capital facilities necessary to provide this infrastructure have been provided by Coral Gables to date. However, as new development occurs, the City will need to provide new residents and employees with the same levels of service and facilities. The expenditures required to maintain levels of service are not necessitated by existing residents and employees, but rather by new development. Furthermore, through implementation of the City's CIP, new development paying impact fees will receive a pro rata benefit from new facilities built with those fees. In addition, the City's impact fee ordinance, including any amendments necessary to implement the fees recommended in this study, earmarks impact fees solely for capital facilities necessary to accommodate new development within the city limits.

Legislature to ensure that, when a county or municipality adopts an impact fee by ordinance or a special district adopts an impact fee by resolution, the governing authority complies with this section.

(3) An impact fee adopted by ordinance of a county or municipality or by resolution of a special district must, at minimum:

(a) Require that the calculation of the impact fee be based on the most recent and localized data.

(b) Provide for accounting and reporting of impact fee collections and expenditures. If a local governmental entity imposes an impact fee to address its infrastructure needs, the entity shall account for the revenues and expenditures of such impact fee in a separate accounting fund.

(c) Limit administrative charges for the collection of impact fees to actual costs.

(d) Require that notice be provided no less than 90 days before the effective date of an ordinance or resolution imposing a new or increased impact fee. A county or municipality is not required to wait 90 days to decrease, suspend, or eliminate an impact fee.

(4) Audits of financial statements of local governmental entities and district school boards which are performed by a certified public accountant pursuant to s. 218.39 and submitted to the Auditor General must include an affidavit signed by the chief financial officer of the local governmental entity or district school board stating that the local governmental entity or district school board has complied with this section.

(5) In any action challenging an impact fee, the government has the burden of proving by a preponderance of the evidence that the imposition or amount of the fee meets the requirements of state legal precedent or this section. The court may not use a deferential standard.

Since 2011, the Florida Legislature has passed laws encouraging the use of multimodal facilities and mobility fees, such that promoting multimodal systems through the use of a well-established funding tool like impact fees falls clearly within the domain of authorized "innovative" approaches and strategies under Florida Statutes.

Finally, there are several steps the City will take to ensure ongoing compliance with applicable Florida laws related to impact fees. First, it will continue to update and implement plans for expending impact fee revenues on the types of facilities TischlerBise has used to develop the fees in this study, including those used to develop the mobility impact fees. In Florida, this typically is done through the CIP and Capital Improvements Element (CIE) framework. Also, the City's existing impact fee ordinance will be updated to ensure compliance with the methods used in the 2016 update and any changes in statutory and case law.

Current Impact Fees and Summary of Major Changes

As documented in this report, Coral Gables has complied with the Florida Impact Fee Act and applicable legal precedents. Impact fees are proportionate and reasonably related to capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from City staff, TischlerBise determined demand indicators for each type of infrastructure and calculated growth share factors to allocate costs to new development. This report documents the formulas and input variables used to calculate the impact fees for each type of public facility. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

Key differences between the current and proposed impact fees are highlighted below.

1. Current impact fees for residential development are based on four house types. Proposed fees are by dwelling size for all types of housing, using five size ranges, indicated by square feet of finished living space. Garages, porches and patios are excluded from the impact fee assessment. Fees by dwelling size, rather than type, simplifies administration and improves proportionality. Proposed residential fees by dwelling size are based on demographic data specific to Coral Gables, as documented in Appendix A.
2. Current impact fees for nonresidential development are based on 23 categories. TischlerBise recommends three general nonresidential categories. This change also makes the fees easier to administer and eliminating size thresholds helps small businesses that tend to be locally owned and managed. For unique developments, the City may allow or require an independent impact fee assessment. For ease of comparison, Figure ES1 only indicates three nonresidential categories that approximate the recommended general categories.
3. The updated 2016 impact fee study recommends an additional impact fee for mobility facilities and a cumulative Administrative Charge related to the preparation and collection of impact fees for all types of infrastructure. The Florida Impact Fee Act specifically authorizes the administrative surcharge, which is based on actual costs expected over the next five years.
4. Current impact fees for the University of Miami were completed after the City's impact fee study. The 2016 update incorporates University-specific data into the citywide analysis, which led to a change in the nonresidential development categories. As shown in Figure ES1, institutional development (like the University of Miami) is currently grouped with office development. Based on job density and trip generation rates per thousand square feet of floor area, institutional development is more similar to industrial than office development. Development categories used in the 2016 update are defined in Appendix C.

Figure ES1: Current Impact Fee Schedule in Coral Gables

Current	Police Facilities	Fire Facilities	General Government	Parks and Recreation	Mobility Facilities	Administrative Charges	Current Total
Residential (per housing unit)							
High-rise Multifamily	$577	$1,410	$741	$3,336		$22	**$6,086**
Low-Rise Multifamily	$680	$1,661	$873	$3,931		$26	**$7,171**
Single-family Detached	$1,142	$2,790	$1,466	$6,602		$45	**$12,045**
Nonresidential (per 1,000 square feet of building)							
Commercial/Shop Ctr	$1,090	$760	$750	$0		$60	**$2,660**
Warehousing/Industrial	$90	$290	$290	$0		$10	**$680**
Office/Institutional	$400	$1,030	$1,000	$0		$50	**$2,480**

Conceptual Impact Fee Calculation

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each development unit. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the impact fee formula is to determine infrastructure units per service unit, typically called Level-Of-Service (LOS) standards. In keeping with the park example, a common LOS standard is park acreage per thousand people. The third step in the impact fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish the cost per acre for land acquisition and/or park improvements.

General Methodologies

There are three general methods for calculating impact fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

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

Cost Recovery (past improvements)

The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.

Incremental Expansion (concurrent improvements)

The incremental expansion method documents current infrastructure standards for each type of public facility, using both quantitative and qualitative measures. New development pays its proportionate share to maintain current standards. Revenue will be used to expand or provide additional facilities, as needed to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.

Plan-Based Fee (future improvements)

The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two options for determining the cost per service unit: 1) total cost of a public facility can be divided by total demand units (average cost), or 2) the growth-share of the public facility cost can be divided by the net increase in service units over the planning timeframe (marginal cost).

Credits

Regardless of the methodology, a consideration of "credits" is integral to the development of legally defensible impact fees. There are two types of "credits" with specific characteristics, both of which should be addressed by fee studies and ordinances.

First, a revenue credit might be necessary if there is a double payment situation and other revenues are contributing to the capital costs of infrastructure to be funded by impact fees. This type of credit is integrated into the impact fee calculation, thus reducing the fee amount. In contrast to some impact fee studies that only provide general costs, with credits at the back-end of the analysis, the 2016 impact fee update for Coral Gables uses growth shares to provide an up-front reduction in total costs. Also, the 2016 update provides impact fee revenue projections to verify that new development will fully fund the growth share of future infrastructure costs (i.e., no revenues other than impact fees will pay for growth costs).

Second, a site-specific credit or developer reimbursement might be necessary for dedication of land or construction of system improvements funded by impact fees. This type of credit is addressed in the administration and implementation of the impact fee program.

Figure ES2 summarizes the methods and cost components used for each type of public facility in Coral Gables' impact fee update.

Figure ES2: Proposed Fee Methods and Cost Components

Type of Infrastructure	Service Area	Cost Recovery (past)	Incremental Expansion (present)	Plan-Based (future)	Cost Allocation
Police	Citywide			Police Buildings and Site Expansion	Functional Population and Inbound Vehicle Trips to Nonresidential Development
Fire	Citywide			Fire Buildings and Site Expansion	Functional Population and Jobs
Municipal	Citywide		Buildings and Land		Functional Population and Jobs
Park and Recreation	Citywide		Active Parks, Passive/Linear Parks and Recreation Buildings (improvements and land)		Daytime Population and Jobs
Mobility	Citywide			Multimodal Roadway and Streetscape Improvements	Functional Population and Jobs
Sanitary Sewer	Citywide	Collection System		Capacity Projects (average cost allocation)	Average Day Wastewater Flow

Proposed Impact Fees

The upper portion of Figure ES3 provides a summary table of proposed impact fees for new development in Coral Gables, except for the University of Miami campus. Proposed impact fees for dorms and Type 1 academic buildings are presented in Appendix E. The lower portion of the table indicates the increase or decrease in fees by development category and type of infrastructure. In general, the major reason for fees to increase for nonresidential, is better demographic data and refinements to the functional population analysis (i.e. residents plus jobs in Coral Gables, weighted by commuting patterns). Over the past three years, Coral Gables has not had any units constructed in the smallest residential size of 1400 square feet or less. However, in most urban areas there is a market demand for smaller dwellings that are sized for single-person households.

For residential development, updated impact fees are based on square feet of finished living space. Garages, balconies, porches and patios are excluded from the impact fee assessment. For nonresidential development, impact fees are stated per 1,000 square feet of floor area. The fee schedule for nonresidential development is designed to provide a reasonable impact fee determination for general types of development. For unique development types, the City may allow or require an independent impact fee assessment.

Impact fee are derived using current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the periodic evaluation and update of impact fees. One approach is to adjust for inflation in construction costs by means of an index like the construction cost index published by Engineering News Record (ENR). If demographic characteristics, the pace of development, or cost estimates change significantly, impact fees should be recalculated.

Figure ES3: Proposed Impact Fees and Increase/Decrease

Proposed	Police Facilities	Fire Facilities	Municipal Facilities	Parks and Recreation	Mobility Facilities	Administrative Charges	Proposed Total
Residential (per housing unit by square feet of living space)							
1400 or less	$131	$147	$447	$3,512	$793	$42	**$5,072**
1401 to 2500	$215	$242	$735	$5,774	$1,304	$70	**$8,340**
2501 to 3700	$270	$305	$924	$7,260	$1,640	$88	**$10,487**
3701 to 4900	$307	$346	$1,049	$8,239	$1,861	$100	**$11,902**
4901 or more	$335	$377	$1,143	$8,982	$2,029	$109	**$12,975**
Nonresidential (per 1,000 square feet of building)							
Retail & Restaurant	$591	$290	$880	$1,244	$1,558	$83	**$4,646**
Institutional & Industrial	$213	$109	$332	$470	$589	$31	**$1,744**
Office & Other Services	$231	$397	$1,202	$1,700	$2,130	$114	**$5,774**

Increase/ Decrease	Police Facilities	Fire Facilities	Municipal Facilities	Parks and Recreation	Mobility Facilities	Administrative Charges	Cumulative Change
Residential (per housing unit by square feet of living space)							
1400 or less	-$446	-$1,263	-$294	$176	$793	$20	**-$1,014**
1401 to 2500	-$362	-$1,168	-$6	$2,438	$1,304	$48	**$2,254**
2501 to 3700	-$410	-$1,356	$51	$3,329	$1,640	$62	**$3,316**
3701 to 4900	-$373	-$1,315	$176	$4,308	$1,861	$74	**$4,731**
4901 or more	-$807	-$2,413	-$323	$2,380	$2,029	$64	**$930**
Nonresidential (per 1,000 square feet of building)							
Retail & Restaurant	-$499	-$470	$130	$1,244	$1,558	$23	**$1,986**
Institutional & Industrial	$123	-$181	$42	$470	$589	$21	**$1,064**
Office & Other Services	-$169	-$633	$202	$1,700	$2,130	$64	**$3,294**

New sewer connections will also pay a capacity fee based on water meter size, as shown below in Figure ES4. Sewer capacity fees are discussed in Appendix D.

Figure ES4: Proposed and Current Sewer Capacity Fees by Meter Size

Sewer Capacity Fee (per connection)

Meter Size (inches)*	Capacity Ratio**	Proposed Sewer Fee	Current Fee	Increase / (Decrease)
0.75	1.00	$850	$713	$137
1.00	1.67	$1,420	$1,071	$349
1.50	3.33	$2,831	$1,890	$941
2.00	5.33	$4,532	$2,902	$1,630
3.00	10.67	$9,073	$6,322	$2,751
4.00	16.67	$14,175	$10,687	$3,488
6.00	33.33	$28,342		
8.00	53.33	$45,350		

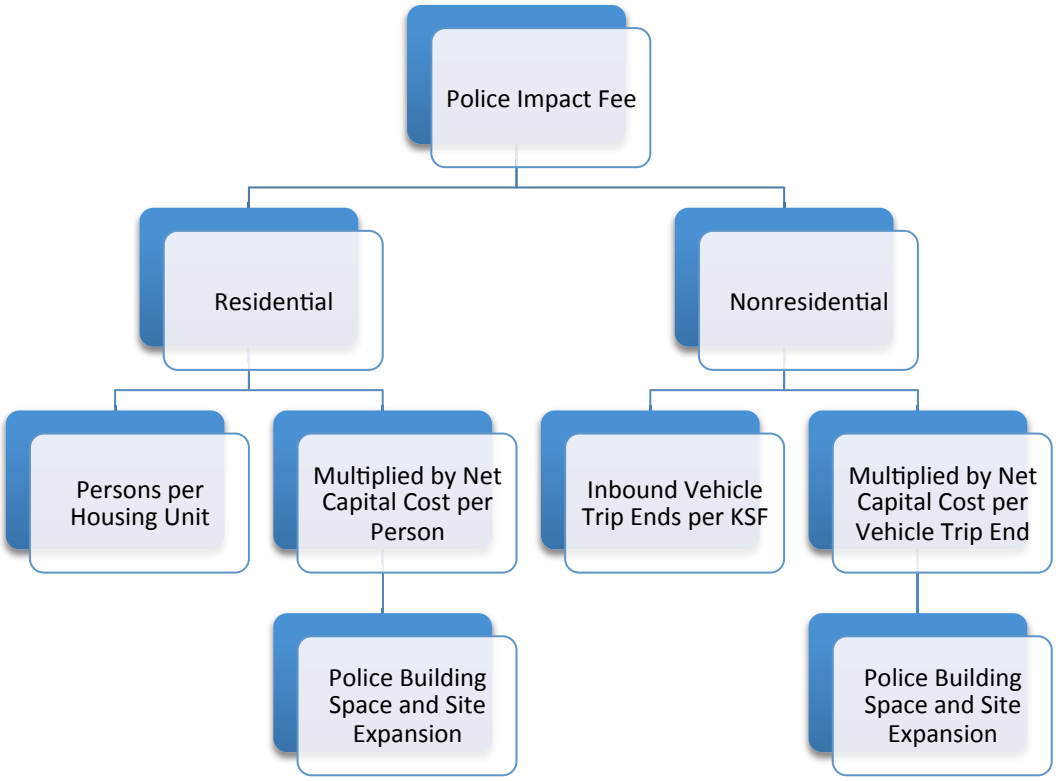
** Sewer fees are based on water meter size.*

*** Source American Water Works Association, M6.*

POLICE FACILITIES

The 2016 police impact fee is based on the plan-based cost of police buildings and land, but excluding vehicles. As shown in Figure P1, residential impact fees are derived using infrastructure cost factors per person and the number of persons per housing unit. For nonresidential impact fees, TischlerBise recommends using vehicle trip generation rates as the best demand indicator for police facilities. Vehicle trips are highest per thousand square feet of floor area (abbreviated KSF) for commercial buildings and lowest for institutional and industrial development. Offices and other services have mid-range trip rates. This ranking of vehicular trip rates is consistent with the relative demand for police facilities from nonresidential development. Other possible nonresidential demand indicators, such as job density or floor area, will not accurately reflect the demand for service. For example, if jobs per thousand square feet were used as the demand indicator, police impact fees would be too high for office development. If floor area were used as the demand indicator, police impact fees would be too high for institutional and industrial development.

Figure P1: Police Impact Fee Methodology Chart



Functional Population

Because police calls for service by development type are not available, TischlerBise recommends using functional population to allocate capital costs to residential and nonresidential development. As shown in Figure P1, functional population is similar to what the U.S. Census Bureau calls "daytime population"

by accounting for people living and working in a jurisdiction. Residents who don't work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents who work in Coral Gables are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Coral Gables are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2014 population and job data for Coral Gables, the cost allocation for residential development is 57%, while nonresidential development accounts for 43% of the demand for infrastructure.

Figure P2: Residential vs. Nonresidential Proportionate Share

Infrastructure Cost Allocation Based on Functional Population

		Demand Units in 2014		*Demand Hours/Day*	*Person Hours*
Residential					
	Population*	51,227			
64%	Residents Not Working	32,777		20	655,540
36%	Resident Workers**	18,450			
17%	Worked in City**		3,156	14	44,184
83%	Worked Outside City**		15,294	14	214,116
				Residential Subtotal	913,840
				Residential Share =>	**57%**
Nonresidential					
	Non-working Residents	32,777		4	131,108
	Jobs Located in City**	54,664			
6%	Residents Working in City**		3,156	10	31,560
94%	Non-Resident Workers (inflow commuters)		51,508	10	515,080
				Nonresidential Subtotal	677,748
				Nonresidential Share =>	**43%**
				TOTAL	1,591,588

** 2014 U.S. Census Bureau population estimate for Coral Gables, FL.*
*** 2014 Inflow/Outflow Analysis, OnTheMap web application, U.S. Census Bureau data for all jobs.*

Police Headquarters

A plan-based methodology is used to derive the police impact fee. Coral Gables' is planning to relocate Police Headquarters to a new Public Safety building, which includes a fire station and other general government functions. As shown in Figure P3, the Police Department's 47% share of the facility is 54,298 square feet, including space for administration, patrol, detective, technical services and professional standards. The Public Safety Buildings is expected to cost $280 per square foot (includes the parking garage and site expansion). The City has a pending Letter of Intent for a purchase price of

$8.5 million for approximately 35,000 square feet of land, of which 10,000 square feet will be used for the new Public Safety Building.

Levels of service are derived using FY35-36 service units (i.e. population and inbound average weekday vehicle trips to nonresidential development). This average cost methodology ensures existing and new development is receiving the same level of service. To calculate the residential infrastructure standard, police building area is multiplied by 57% (proportionate share factor) and divided by the projected population 20 years in the future (63,791 residents), resulting in 0.49 square feet of police building per person. The nonresidential standard is equal to the police building area multiplied by 43% (see Figure P2) and divided by 171,438 inbound vehicle trips on an average weekday, which is 0.14 square feet per vehicle trip.

Figure P3: Infrastructure Standards for Police Buildings

Proposed Public Safety Building	*Bldg Sq Ft*	*Percent of Total*
Police Department Area	54,298	47%
Fire Department Area	25,705	22%
Other Area	35,816	31%
TOTAL	115,819	
Cost for Building plus Parking Garage =>		$30,000,000
Land Cost for Site Expansion =>		$2,430,000
Total Cost =>		$32,430,000
Total Cost divided by Square Feet of Building =>		$280

Source: Coral Gables Public Works Department.

Police Building Standards

	Residential	*Nonresidential*
Proportionate Share (functional population)	57%	43%
Growth Indicator	*Residents*	*Avg Wkdy Veh Trips to Nonres Dev*
Service Units in FY35-36	63,791	171,438
Square Feet per Service Unit	0.49	0.14
Cost per Service Unit	$126	$42

Needs Analysis for Police Facilities

As shown in Figure P4, to accommodate new development over the next 20 years, Coral Gables will construct 54,298 square feet of police building space. The growth cost of the Police building space is approximately $2.566 million. In comparison, the total cost of the Police building space and site expansion is approximately $15.204 million (i.e. 47% of $32.43 million). Impact fee revenue over the next 20 years will fund approximately 17% of planned capital improvements needed by the Police Department to accommodate new development.

Figure P4: Police Facilities Needed to Accommodate Growth

Police Infrastructure Standards and Capital Costs

Police Buildings - Residential	0.49	Sq Ft per person
Police Buildings - Nonresidential	0.14	Sq Ft per trip
Police Building Cost	$280	per sq ft of building
Police Land - Residential	0.00	Sq Ft per person
Police Land - Nonresidential	0.00	Sq Ft per trip
Police Land Cost	$0	per sq ft of land

	Year	*Residents*	*Veh Trips to Nonres Dev*	***Police Facilities Needed*** *Sq Ft of Police Building*
Base	FY15-16	52,259	145,243	45,135
Year 1	FY16-17	52,782	146,444	45,553
Year 2	FY17-18	53,311	147,646	45,973
Year 3	FY18-19	53,845	148,867	46,399
Year 4	FY19-20	54,385	150,099	46,828
Year 5	FY20-21	54,930	151,325	47,260
Year 10	FY25-26	57,738	157,719	49,493
Year 15	FY30-31	60,689	164,410	51,836
Year 20	FY35-36	63,791	171,438	54,298
20-Yr Increase		11,532	26,194	9,163
			Growth Cost of Police Building and Land =>	$2,566,000
			Police Share of Public Safety Building and Site Expansion =>	$15,204,000
			Growth Share Funded by Impact Fees =>	17%

Revenue Credit Evaluation for Police Facilities

The City of Coral Gables does not anticipate any additional long-term debt related to the construction of the planned Public Safety building. Therefore, a revenue credit for bond payments is not applicable. As shown in the cash flow analysis below, projected impact fee revenue roughly matches the growth cost of new police facilities. Because impact fees fully fund expected growth costs, there is no potential double-payment from other revenue sources.

Proposed and Current Impact Fees for Police Facilities

Figure P5 provides a summary of the infrastructure standards used to calculate police impact fees. The net capital cost per service unit for residential development is $126 per person. The nonresidential cost per service unit is $42 per inbound vehicle trip to nonresidential development. Average weekday vehicle trip ends are from Trip Generation, published by the Institute of Transportation Engineers (ITE, 2012). A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. For all Office and Other Services, the trip adjustment factor is 50%. For retail/restaurant and institutional/industrial, the trip adjustment factor is 33%. The trip adjustment factor is less than 50% because these development categories attract vehicles as they pass by on arterial streets. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66% multiplied by 50%, or approximately 33% of the trip ends.

Figure P5 contains a schedule of the proposed impact fees for police. For the average-size residential dwelling, the proposed police impact fee is $270. Impact fees for nonresidential development will be imposed per thousand square foot of floor area. For example, retail/restaurant generates 42.70 weekday trip ends per 1,000 square feet of floor area, multiplied by the 33% trip adjustment factor and the total capital cost per vehicle trip ($42), yielding a proposed fee of $591 (truncated).

Figure P5: Police Impact Fee Schedule

	Cost per Person	*Cost per Inbound Vehicle Trip*
Police Building and Site Expansion	$126	$42
Police Vehicles	$0	$0
Revenue Credit	$0	$0
Net Capital Cost	$126	$42

Residential (per housing unit)

Square Feet of Living Space	*Persons per Housing Unit*	*Proposed Police Facilities Fees*	*Current Fees*	*Increase/ Decrease*
1400 or less	1.04	$131	$577	-$446
1401 to 2500	1.71	$215	$577	-$362
2501 to 3700	2.15	$270	$680	-$410
3701 to 4900	2.44	$307	$680	-$373
4901 or more	2.66	$335	$1,142	-$807

Nonresidential (per 1,000 square feet of building)

Type	*Avg Wkdy Veh Trip Ends*	*Trip Adjustment Factors*	*Proposed Police Facilities Fees*	*Current Fees*	*Increase/ Decrease*
Retail & Restaurant	42.70	33%	$591	$1,090	-$499
Institutional & Industrial	15.43	33%	$213	$90	$123
Office & Other Services	11.03	50%	$231	$400	-$169

Projected Capital Costs and Police Fee Revenue

As shown in Figure P6, Police impact fees are expected to generate approximately $2.55 million in revenue over the next 20 years. This revenue projection is based on the demographic data described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in fee revenue and the timing of capital improvements.

Figure P6: Cash Flow Analysis for Police Facilities

20-Year Cost of Police Facilities

	Growth Cost
Police Building & Site Expansion =>	$2,566,000

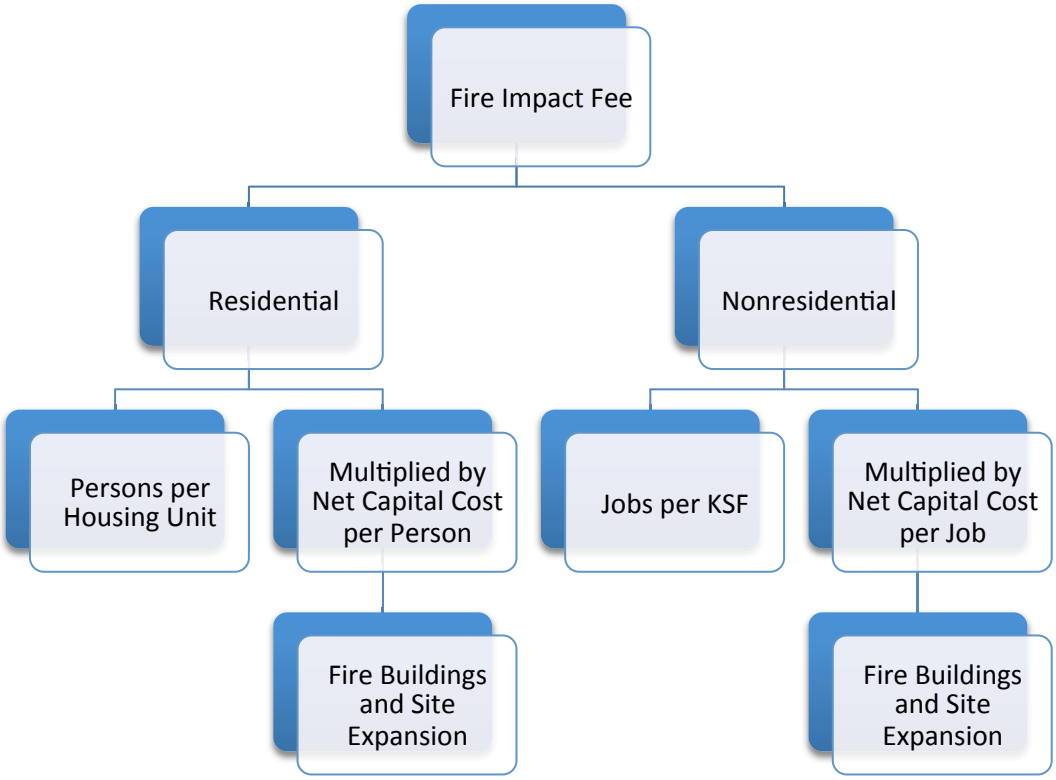
Police Impact Fee Revenue

		Average Residential $270 per housing unit	*Retail & Restaurant* $591 per 1000 Sq Ft	*Institutional & Industrial* $213 per 1000 Sq Ft	*Office & Other Services* $231 per 1000 Sq Ft
	Year	*Hsg Units*	*KSF*	*KSF*	*KSF*
Base	FY15-16	22,044	3,581	6,602	11,091
Year 1	FY16-17	22,288	3,617	6,618	11,202
Year 2	FY17-18	22,534	3,653	6,633	11,314
Year 3	FY18-19	22,782	3,690	6,648	11,427
Year 4	FY19-20	23,033	3,727	6,663	11,542
Year 5	FY20-21	23,286	3,764	6,677	11,657
Year 10	FY24-26	24,592	3,957	6,753	12,253
Year 15	FY24-31	25,965	4,159	6,830	12,879
Year 20	FY24-36	27,408	4,372	6,907	13,538
20-Yr Increase		5,364	791	305	2,447
Projected Revenue =>		$1,448,000	$467,000	$65,000	$565,000
				Total Projected Revenues (rounded) =>	$2,545,000

FIRE DEPARTMENT FACILITIES

The 2016 fire impact fee is based on the plan-based cost of fire buildings. The short-range plan is to relocate Fire Station #1 to a new Public Safety building and to expand Fire Station #2, but not acquire any additional apparatus. As shown in Figure F1, residential impact fees are calculated on a per capita basis and then converted to a proportionate fee by dwelling size, based on the average number of persons per housing unit. Nonresidential impact fees are based on infrastructure cost per job and the average number of jobs per thousand square feet of floor area.

Figure F1: Fire Impact Fee Methodology Chart



Residential vs. Nonresidential Cost Allocation

The relative demand for fire infrastructure is based on functional population (see Figure P2 and related text). The functional population analysis accounts for residents and jobs within Coral Gables, with adjustments for commuting patterns. Because Coral Gables is an employment center, the cost allocation is 57% residential and 43% nonresidential. In more suburban bedroom communities, infrastructure costs are more heavily weighted to residential development.

Fire Department Buildings

Figure F2 summarizes Coral Gables' capital plan for fire stations. As discussed above (see Figure P3), the Fire Department will occupy 22% of the floor area in the new Public Safety building. Only the Fire

Department's share of the Public Safety building is included in the fire impact fee calculation. For planned buildings, the weighted average cost is $267 per square foot. Land acquisition cost is only applicable for site expansion at Fire Station #1. The City has a pending Letter of Intent with a purchase price of $8.5 million for approximately 35,000 square feet of land, of which 10,000 square feet will be used for the new Public Safety Building.

Infrastructure standards are derived using FY35-36 demographic data (i.e. population and jobs in Coral Gables) as documented in Appendix A. Infrastructure standards shown below are equal to the total square feet of fire stations multiplied by the proportionate share factor and then divided by the number of future service units. This average cost method ensures the same level of service standard for both existing and new development.

Figure F2: Infrastructure Standards for Fire Buildings

Fire Stations

	Square Feet	*Project Cost*
Planned Fire Station #1 *	25,705	$7,197,000
Existing Fire Station #2	11,072	
Planned Fire Station #2 addition (two stories plus training tower) **	10,810	$2,567,000
Existing Fire Station #3	14,063	
TOTAL	61,650	$9,764,000

** Fire Station #1 building and site expansion cost is $280 per square foot.*

*** AECOM 7/25/16 cost estimate, provided by Public Works, is approximately $237 per additional square foot.*

Allocation Factors for Fire Stations

Cost of Planned Buildings and Site Expansion per Square Foot	$267
Residential Share	57%
Nonresidential Share	43%
FY 35-36 Residents	63,791
FY35-36 Jobs	66,806

Infrastructure Standards for Fire Stations

	Square Feet	*Capital Cost*
Residential (per person)	0.55	$142
Nonresidential (per job)	0.40	$111

Needs Analysis for Fire Facilities

Figure F3 converts projected service units over the next 20 years into the corresponding need for additional fire station building space. Coral Gables will provide 61,650 square feet of fire buildings, with a growth cost of approximately $2.88 million over the next 20 years. In comparison, the total cost of the Fire building space is approximately $9.76 million (see table above). Impact fee revenue over the next

20 years will fund approximately 29% of planned capital improvements needed by the Fire Department to accommodate new development.

Figure F3: Fire Facilities Needed to Accommodate Growth

Fire Infrastructure Standards and Capital Costs

Fire Buildings - Residential	0.55	Sq Ft per person
Fire Buildings - Nonresidential	0.40	Sq Ft per job
Fire Buildings Cost	$267	per square foot
Fire Apparatus - Residential	0.00000	items per person
Fire Apparatus - Nonres	0.00000	items per job
Fire Apparatus Cost	$0	per item

				Fire Facilities Needed	
	Year	*Residents*	*Jobs*	*Sq Ft of Fire Stations*	*Fire Apparatus*
Base	FY15-16	52,259	55,663	50,876	0
Year 1	FY16-17	52,782	56,170	51,365	0
Year 2	FY17-18	53,311	56,682	51,860	0
Year 3	FY18-19	53,845	57,200	52,360	0
Year 4	FY19-20	54,385	57,722	52,864	0
Year 5	FY20-21	54,930	58,248	53,373	0
Year 10	FY25-26	57,738	60,962	55,996	0
Year 15	FY30-31	60,689	63,812	58,753	0
Year 20	FY35-36	63,791	66,806	61,650	0
20-Yr Increase		11,532	11,143	10,774	0
			Cost of Fire Station Buildings and Land =>	$2,877,000	
				Cost of Fire Apparatus =>	$0
				Growth Cost =>	$2,877,000
			Total Cost of Fire Station Improvements =>		$9,764,000
			Growth Share Funded by Impact Fees =>		29%

Revenue Credit Evaluation

The City of Coral Gables does not anticipate any additional long-term debt related to the construction of the planned Public Safety building. Therefore, a revenue credit for bond payments is not applicable. As shown in the cash flow analysis below, projected impact fee revenue roughly matches the growth cost of new fire facilities. Because impact fees fully fund expected growth costs, there is no potential double-payment from other revenue sources.

Proposed and Current Impact Fees for Fire Facilities

Input variables for fire impact fees are shown in the upper portion of Figure F4. Total capital costs per service unit are $142 per person and $111 per job. To derive the impact fee for an average-size dwelling, multiply the average number of persons per housing unit by the total capital cost per person. For example, 2.15 persons per unit multiplied by $142 per person yields a fire impact fee of $305

(truncated). Impact fees for nonresidential development will be imposed per square foot of floor area. For example, an office building in Coral Gables averages 3.58 jobs per 1,000 square feet of floor area and fire infrastructure costs $111 per additional job. The product of these two inputs yields a fire impact fee of $397 (truncated) per thousand square feet of floor area.

Figure F4: Fire Facilities Impact Fee Schedule

	Cost per Person	*Cost per Job*
Fire Department Buildings	$142	$111
Fire Apparatus	$0	$0
Revenue Credit	$0	$0
Net Capital Cost	$142	$111

Residential (per housing unit)

Square Feet of Living Space	*Persons per Hsg Unit*	*Proposed Fire Facilities Fee*	*Current Fees*	*Increase/ Decrease*
1400 or less	1.04	$147	$1,410	-$1,263
1401 to 2500	1.71	$242	$1,410	-$1,168
2501 to 3700	2.15	$305	$1,661	-$1,356
3701 to 4900	2.44	$346	$1,661	-$1,315
4901 or more	2.66	$377	$2,790	-$2,413

Nonresidential (per 1,000 square feet of building)

Type	*Jobs per 1,000 Sq Ft*	*Proposed Fire Facilities Fee*	*Current Fees*	*Increase/ Decrease*
Retail & Restaurant	2.62	$290	$760	-$470
Institutional & Industrial	0.99	$109	$290	-$181
Office & Other Services	3.58	$397	$1,030	-$633

Forecast of Revenues for Fire Facilities

Figure F5 indicates Coral Gables should receive approximately $2.87 million in fire impact fee revenue over the 20 ten years, if actual development matches the projections documented in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the need for infrastructure and impact fee revenue.

Figure F5: Projected Fire Impact Fee Revenue

20-Year Cost of Fire Facilities

Fire Station Buildings & Site Expansion =>	$2,877,000
Fire Apparatus =>	$0
	$2,877,000

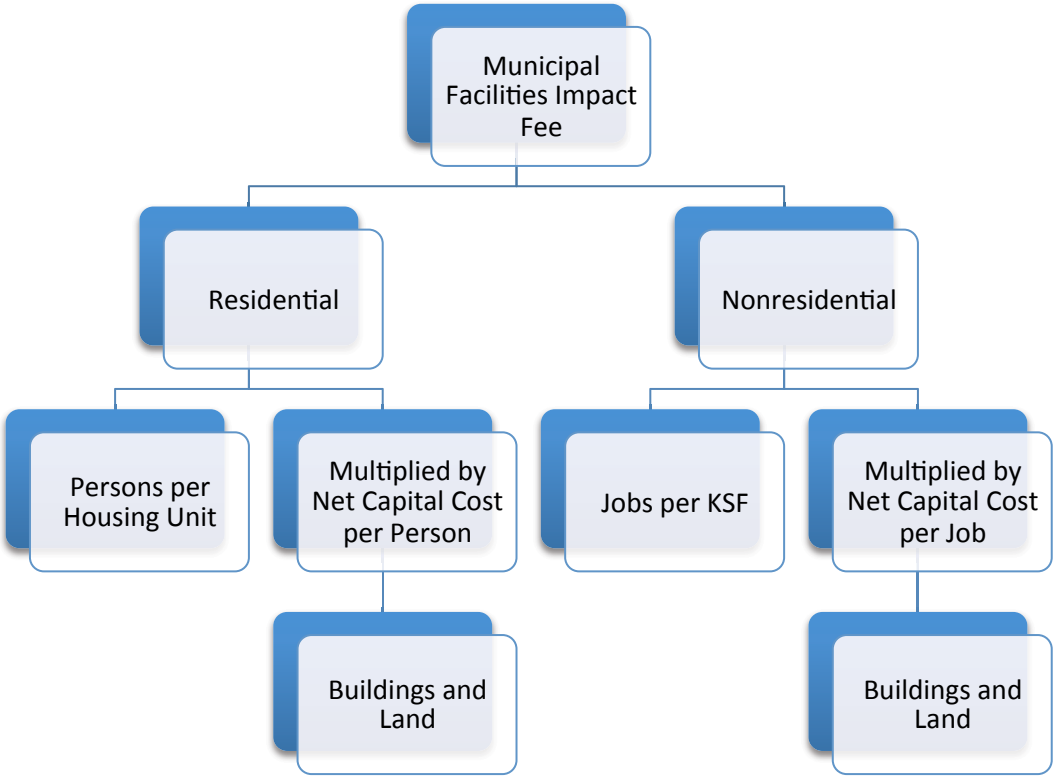
Fire Impact Fee Revenue

		Average Residential	*Retail & Restaurant*	*Institutional & Industrial*	*Office & Other Services*
		$305	$290	$109	$397
		per housing unit	per 1000 Sq Ft	per 1000 Sq Ft	per 1000 Sq Ft
	Year	*Hsg Units*	*KSF*	*KSF*	*KSF*
Base	FY15-16	22,044	3,581	6,602	11,091
Year 1	FY16-17	22,288	3,617	6,618	11,202
Year 2	FY17-18	22,534	3,653	6,633	11,314
Year 3	FY18-19	22,782	3,690	6,648	11,427
Year 4	FY19-20	23,033	3,727	6,663	11,542
Year 5	FY20-21	23,286	3,764	6,677	11,657
Year 10	FY25-26	24,592	3,957	6,753	12,253
Year 15	FY30-31	25,965	4,159	6,830	12,879
Year 20	FY35-36	27,408	4,372	6,907	13,538
20-Yr Increase		5,364	791	305	2,447
Projected Revenue =>		$1,636,000	$229,000	$33,000	$971,000
				Total Revenue Over 20 Years (rounded) =>	$2,869,000

MUNICIPAL FACILITIES

Impact fees for municipal facilities will enable the City to provide administrative building space and land to serve new development. The City is considering several options for expanding office space. For example, City office space is being considered as part of the redevelopment of parking garages 1 & 4, potential development of future parking garage structures, and potential acquisitions of existing office buildings close to City operated facilities. As shown in Figure MF1, capital costs are allocated to both residential and nonresidential development. Residential infrastructure standards are expressed per person and converted to a fee per dwelling using average persons per housing unit. Nonresidential impact fees are based on job density per thousand square feet of floor area, by type of development.

Figure MF1: Impact Fee Methodology Chart for Municipal Facilities



Residential vs. Nonresidential Cost Allocation

The relative demand for municipal facilities is based on functional population (see Figure P2 and related text). The functional population analysis accounts for residents and jobs within Coral Gables, with adjustments for commuting patterns. Because Coral Gables is an employment center, the cost allocation is 57% residential and 43% nonresidential. In more suburban bedroom communities, infrastructure costs are more heavily weighted to residential development.

Municipal Buildings and Sites

The incremental expansion method documents current infrastructure standards, as shown in Figure MF2. Municipal building space is limited to those departments directly impacted by new development, including Planning, Development Services and Public Works. The facilities listed below include a portion of 427 Biltmore (Planning), portions of City Hall (Development Services) and the 72nd Ave site (Public Works excluding utilities and waste management). City staff provided the building cost per square foot. Coral Gables expects future municipal facilities to be developed in commercial areas. The land acquisition cost per acre is based on current commercially zoned property in Coral Gables and is slightly less than the previous study. Infrastructure standards are derived using FY15-16 population and jobs, as documented in Appendix A.

Figure MF2: Infrastructure Standards for Municipal Facilities

Municipal Sites

	Building Square Feet	*Building Cost**	*Land Cost***
Planning Dept. (427 Biltmore Way)	2,400		
City Hall	6,892		
Public Works (72nd Ave)	87,035		
TOTAL	96,327	$15,399,000	$25,700,000

** Buildings cost is approximately $160 per square foot.*

*** Municipal Facilities occupy 2.36 acres, with a cost estimate of $10,890,000 per acre.*

Allocation Factors for Municipal Facilities

Building plus Land Cost per Square Foot	$427
Residential Share	57%
Nonresidential Share	43%
FY 15-16 Residents	52,259
FY15-16 Jobs	55,663

Infrastructure Standards for Municipal Facilities

	Square Feet	*Capital Cost*
Residential (per person)	1.05	$430
Nonresidential (per job)	0.74	$336

Needs Analysis for Municipal Facilities

Figure MF3 converts projected service units over the next ten years into the corresponding need for additional municipal building space. To maintain current standards, Coral Gables will need 9,700 additional square feet of municipal buildings. The growth cost of municipal facilities (buildings and land) over the next ten years is approximately $4.14 million.

Figure MF3: Municipal Space Needed to Accommodate Growth

Municipal Facilities Infrastructure Standards and Capital Costs

Municipal Facilities - Residential		1.05	Sq Ft per person
Municipal Facilities - Nonresidenti		0.74	Sq Ft per job
Municipal Facilities Cost		$427	per square foot

				Municipal Space Needed
	Year	*Residents*	*Jobs*	*Building Sq Ft*
Base	FY15-16	52,259	55,663	96,327
Year 1	FY16-17	52,782	56,170	97,254
Year 2	FY17-18	53,311	56,682	98,191
Year 3	FY18-19	53,845	57,200	99,138
Year 4	FY19-20	54,385	57,722	100,093
Year 5	FY20-21	54,930	58,248	101,057
Year 6	FY21-22	55,480	58,780	102,031
Year 7	FY22-23	56,036	59,318	103,016
Year 8	FY23-24	56,598	59,860	104,009
Year 9	FY24-25	57,165	60,409	105,013
Year 10	FY25-26	57,738	60,962	106,027
Ten-Yr Increase		5,479	5,299	9,700
Growth Cost of Buildings and Land =>				$4,142,000

Revenue Credit Evaluation

Currently the City of Coral Gables does not have any outstanding debt related to municipal facilities. Therefore, a revenue credit for bond payments is not applicable. As shown in the cash flow analysis below, projected impact fee revenue roughly matches the growth cost of new municipal facilities. Because impact fees fully fund expected growth costs, there is no potential double-payment from other revenue sources.

Proposed and Current Impact Fees for Municipal Facilities

Figure MF4 provides a summary of the cost inputs used to calculate impact fees for municipal facilities. For residential development, persons per housing unit (e.g. 2.15 for the average size dwelling) multiplied by the net capital cost per person ($430) yields an impact fee of $924 (truncated). Impact fees for nonresidential development are expressed per thousand square feet of floor area. For example, the fee for a restaurant with 10,000 square feet (i.e. 10 KSF) is $8,800. As shown below, retail and restaurants will pay an impact fee of $880 per KSF (truncated), which assumes 2.62 jobs per KSF and a capital cost factor of $336 per job.

Figure MF4: Municipal Facilities Impact Fee Schedule

Municipal Facilities Costs	*Cost per Person*	*Cost per Job*
Buildings and Land	$430	$336
Vehicles & Equipment	$0	$0
Revenue Credit	$0	$0
Net Capital Cost	$430	$336

Residential (per dwelling)

Square Feet of Finished Living Space	*Persons per Dwelling*	*Proposed Municipal Facilities Fee*	*Current Fees*	*Increase/ Decrease*
1400 or less	1.04	$447	$741	-$294
1401 to 2500	1.71	$735	$741	-$6
2501 to 3700	2.15	$924	$873	$51
3701 to 4900	2.44	$1,049	$873	$176
4901 or more	2.66	$1,143	$1,466	-$323

Nonresidential (per 1,000 Square Feet)

Development Type	*Jobs per 1,000 Sq Ft*	*Proposed Municipal Facilities Fee*	*Current Fees*	*Increase/ Decrease*
Retail & Restaurant	2.62	$880	$750	$130
Institutional & Industrial	0.99	$332	$290	$42
Office & Other Services	3.58	$1,202	$1,000	$202

Forecast of Revenues for Municipal Facilities

Figure MF5 indicates Coral Gables should receive approximately $4.13 million in impact fee revenue for municipal facilities over the next ten years. The revenue forecast assumes actual development matches the projections documented in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the need for infrastructure and impact fee revenue.

Figure MF5: Projected Impact Fee Revenue for Municipal Facilities

Ten-Year Growth Cost of Municipal Facilities

Buildings and Land	$4,142,000
Vehicles	$0
Ten-Year Total =>	$4,142,000

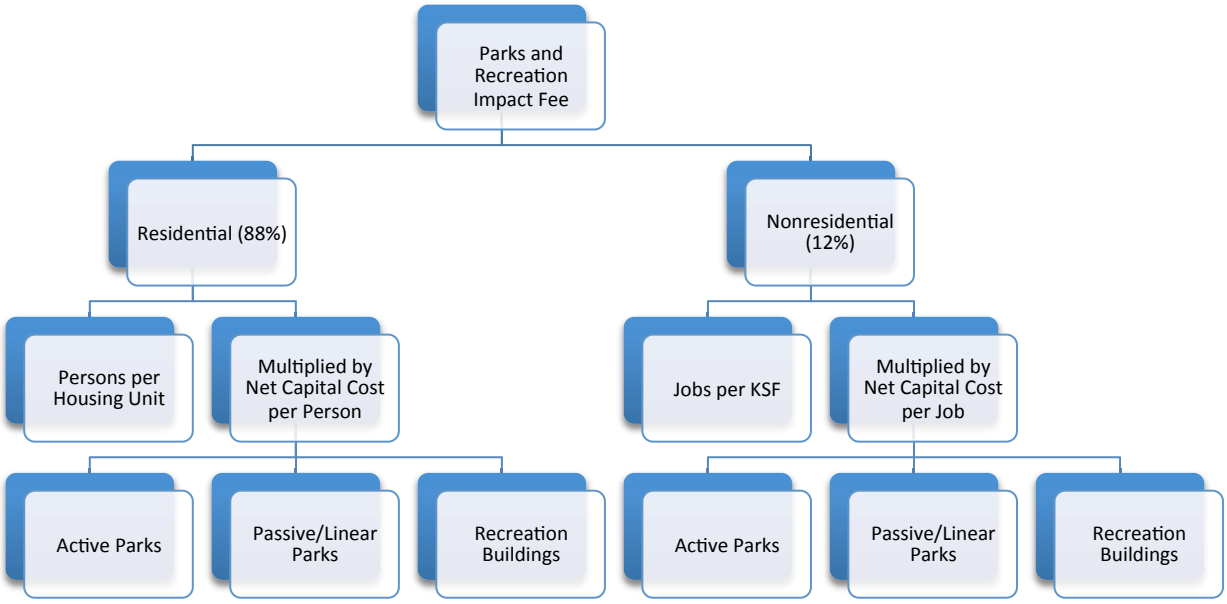
Impact Fee Revenue for Municipal Facilities

		Average Residential $924 per housing unit	*Retail & Restaurant* $880 per 1000 Sq Ft	*Institutional & Industrial* $332 per 1000 Sq Ft	*Office & Other Services* $1,202 per 1000 Sq Ft
	Year	*Hsg Units*	*KSF*	*KSF*	*KSF*
Base	FY15-16	22,044	3,581	6,602	11,091
Year 1	FY16-17	22,288	3,617	6,618	11,202
Year 2	FY17-18	22,534	3,653	6,633	11,314
Year 3	FY18-19	22,782	3,690	6,648	11,427
Year 4	FY19-20	23,033	3,727	6,663	11,542
Year 5	FY20-21	23,286	3,764	6,677	11,657
Year 6	FY21-22	23,542	3,802	6,692	11,774
Year 7	FY22-23	23,801	3,840	6,707	11,892
Year 8	FY23-24	24,062	3,878	6,723	12,011
Year 9	FY24-25	24,326	3,917	6,738	12,132
Year 10	FY25-26	24,592	3,957	6,753	12,253
Ten-Yr Increase		2,548	376	151	1,162
Projected Revenue =>		$2,354,000	$331,000	$50,000	$1,397,000
				Total Projected Revenues (rounded) =>	$4,132,000

PARKS AND RECREATION FACILITIES

The impact fee for parks and recreation facilities will enable Coral Gables to maintain current infrastructure standards for active parks, passive/linear parks and recreation buildings. All parks and recreation facilities included in the impact fees have a citywide service area. Cost components are allocated 88% percent to residential development and 12% to nonresidential development, based on daytime population in Coral Gables (explained further below).

Figure PR1: Impact Fee Methodology Chart



Proportionate Share for Parks and Recreation Facilities

As shown in Figure PR2, TischlerBise recommends daytime population as a reasonable indicator of the potential demand for park and recreational facilities, from both residential and nonresidential development. According to the U.S. Census Bureau web application OnTheMap, there were 51,508 inflow commuters traveling to Coral Gables for work in 2014. The proportionate share is based on cumulative impact days per year with residents potentially impacting park and recreational facilities 365 days per year. For institutional jobs, like the University of Miami, inflow commuters potentially impact parks and recreation facilities 32 days per year, assuming one workday per week multiplied by 32 weeks a year (i.e. academic calendar). Inflow commuters at all other jobs potentially impact parks and recreation facilities 50 days per year, assuming one workday per week multiplied by 50 weeks per year. In other words, it is reasonable to assume that once a week inflow commuters will use active parks or recreation buildings for sports leagues (e.g. softball, basketball or volleyball), or enjoy passive/linear parks by taking a walk or eating lunch outdoors. Based on cumulative impact days per year, 88% of the

growth cost of future parks and recreation capital improvements resulting from growth will be funded by residential development and 12% by nonresidential development.

As an example of the demand for parks and recreation facilities by nonresidential development, City staff compiled data on special events held at City parks and recreation buildings during FY15-16. Businesses and non-profit organizations held special events, such as festivals, fundraisers, and corporate parties on approximately 25% of the days (i.e. 91 event days divided by 365 days in a year). Also, the City of Coral Gables has two different leagues (i.e. adult softball and basketball) that have local businesses and non-profit organizations participating, averaging 16 teams per year.

Figure PR2: Daytime Population

Daytime Population in 2014			*Cumulative Impact Days per Year*			*Cost Allocation for Parks*	
Jurisdiction	*Residents**	*Inflow Commuters**	*Residential***	*Nonresidential****	*Total*	*Residential*	*Nonresidential*
Coral Gables	51,227	51,508	18,697,855	2,465,019	21,162,874	**88%**	**12%**
** Data source is U.S. Census Bureau.*				*** residential days per year =>*		*365*	
				**** nonresidential days per year*			
Instituitional jobs (12%) like University of Miami, assume 1 day per week x 32 weeks per year =>						*32*	
All other jobs (88%) assume 1 day per week x 50 weeks per year =>						*50*	

Active Parks

Active Parks are defined as being one acre or larger and having at least one active amenity, such as a ball field, basketball court, playground, swimming pool, or tennis court. For active parks, the current infrastructure standard is 0.48 acres per 1,000 residents. As shown in Figure PR3, the cost factor for active parks is $2.92 million per acre (land plus improvements). The improvements cost factor of $312,000 per acre is based on the City's inventory of park amenities at community parks contained in the previous impact fee study (TischlerBise 2007). The cost of park improvements per acre includes athletic fields/courts, a swimming pool, play areas, shelters and site costs (e.g. grading and landscaping). In comparison, Miami-Dade County's park impact fees assume a cost factor of approximately $284,000 per acre for parks with sports fields (e.g. soccer pitch with lights). Coral Gables expects future active parks to be developed in areas zoned for residential development. The land acquisition cost per acre is based on a residentially zoned property in Coral Gables, which currently costs $2.61 million per acre.

At the bottom of Figure PR3 is a needs analysis for active park acreage. To maintain current standards over the next ten years, Coral Gables will purchase and improve 3.0 acres of active parks, expected to cost approximately $9.63 million.

Figure PR3: Active Park Standards and Needs

Active Parks	*Acres*	*Improvements**	*Land***
Coral Bay	1.3		
Youth Center	10.6		
Jaycee	2.0		
Phillips	3.2		
Salvadore Park and Tennis Center	3.7		
Venetian Pool	1.4		
Biltmore Tennis Center	3.5		
Kerdyk	3.0		
Total	28.7	$8,954,400	$74,907,000

** Improvements cost factor is $312,000 per acre, as provided by City staff.*

*** Land cost factor is $2,610,000 per acre.*

Allocation Factors for Active Parks

Improvements plus Land Cost per Acre	$2,922,000
Residential Proportionate Share	88%
Nonresidential Proportionate Share	12%

	Service Units
FY 15-16 Residents	52,259
FY15-16 Jobs	55,663

Infrastructure Standards for Active Parks

	Acres	*Capital Costs*
Residential (per person)	0.00048	$1,407
Nonresidential (per job)	0.00006	$198

		Active Park Needs		
	Year	*Population*	*Jobs*	*Acres*
Base	FY15-16	52,259	55,663	28.7
Year 1	FY16-17	52,782	56,170	29.0
Year 2	FY17-18	53,311	56,682	29.3
Year 3	FY18-19	53,845	57,200	29.6
Year 4	FY19-20	54,385	57,722	29.9
Year 5	FY20-21	54,930	58,248	30.2
Year 10	FY25-26	57,738	60,962	31.7
	Ten-Yr Increase	5,479	5,299	3.0
		Growth Cost of Active Parks =>		$8,766,000

Passive/Linear Parks

TischlerBise prepared the inventory of passive/linear parks using data from the City's website (see Figure PR4), with recent acquisitions provided by City staff. Golf courses are excluded because they typically function as an enterprise operation. Coral Gables currently has 31.8 acres of passive/linear parks. The recommended cost factor for improvements is $156,000 per acre, which is 50% of the cost

factor for active parks and roughly comparable to Miami-Dade County's cost assumption for neighborhood park impact fees (i.e. $135,000 per acre for improvements).

Figure PR4: Passive/Linear Park Inventory

Passive/Linear Parks	*Acres*	*Improvements**	*Land***
1015 Lisbon St	0.2		
1047 Venetia Ave	0.2		
241 Sarto Ave	0.1		
6540 Marlin Dr	0.4		
807 Catalonia Ave	0.3		
937 Majorca Ave	0.3		
Alcazar Plaza	0.3		
Alhambra Circle	0.5		
Betsy Adams / Garden Club Park	0.5		
Blue Road Open Space	0.6		
Campo Sano / Carlos Kakouris Park	0.3		
Cepero Memorial Park	0.2		
Cooper Park	0.1		
Coral Bay Park	1.3		
Country Club Prado	13.0		
Fewell Park	0.7		
Gordon Park	2.7		
Granada Park	0.4		
Ingraham Park	2.5		
Maggiore Park	0.5		
Merrick Park	0.6		
Moore Park	0.4		
Orduna/Miller Triangle	0.3		
Pierce Park	0.3		
Pittman Park	0.1		
Ponce Circle Park	1.4		
Ponce de Leon Park	0.1		
Rotary Centennial Park	0.3		
San Sebastian Park	0.2		
Sheehy Park	0.8		
Sunrise Harbor Park	0.9		
Walker Pioneers Park	0.7		
Winokur Park	0.5		
Young Park	0.1		
Total	31.8	$4,960,800	$82,998,000

** Improvements cost factor is $156,000 per acre, as provided by City staff.*

*** Land cost factor is $2,610,000 per acre.*

The current infrastructure standard for passive/linear parks is 0.54 acres per 1,000 residents and 0.07 acres per 1,000 jobs, with a cost factor of $2.766 million per acre (land plus improvements as shown in Figure PR5). A needs analysis for passive/linear parks is shown in the lower portion of the table below. To maintain current standards over the next ten years, Coral Gables will purchase and improve 3.3 acres of passive/linear parks, expected to cost approximately $9.13 million.

Figure PR5: Passive/Linear Park Standards and Needs

Allocation Factors for Passive/Linear Parks

Improvements plus Land Cost per Acre	$2,766,000
Residential Proportionate Share	88%
Nonresidential Proportionate Share	12%
	Service Units
FY 15-16 Residents	52,259
FY15-16 Jobs	55,663

Infrastructure Standards for Passive/Linear Parks

	Acres	*Capital Cost*
Residential (per person)	0.00054	$1,466
Nonresidential (per job)	0.00007	$206

		Passive/Linear Park Needs		
	Year	*Population*	*Jobs*	*Acres*
Base	FY15-16	52,259	55,663	31.8
Year 1	FY16-17	52,782	56,170	32.1
Year 2	FY17-18	53,311	56,682	32.4
Year 3	FY18-19	53,845	57,200	32.8
Year 4	FY19-20	54,385	57,722	33.1
Year 5	FY20-21	54,930	58,248	33.4
Year 10	FY25-26	57,738	60,962	35.1
Ten-Yr Increase		5,479	5,299	3.3

Growth Cost of Passive/Linear Parks => $9,128,000

Recreation Buildings

Figure PR6 lists current floor area for the youth and adult centers. Coral Gables recently spent approximately $5.0 million on the Adult Center, which equates to $510 per square foot. The lower portion of the table below indicates projected service units over the next ten years. To maintain current standards, Coral Gables will need 6,159 additional square feet of recreation building space, expected to cost approximately $3.14 million.

Figure PR6: Infrastructure Standards for Recreation Buildings

Recreation Buildings	*Square Feet*
Youth Center	49,600
Adult Center	9,800
TOTAL	59,400

Allocation Factors for Recreation Buildings

Building plus Land Cost per Square Foot*	$510
Residential Proportionate Share	88%
Nonresidential Share	12%
FY15-16 Coral Gables Population	52,259
FY15-16 Jobs in Coral Gables	55,663

** Based on Adult Center cost of $5.0 million and 9,800 square feet of building.*

Recreation Building Standards and Future Needs

	Sq Ft	*Capital Cost*
Residential (per person)	1.00	$504
Nonresidential (per job)	0.13	$71

		Recreation Building Needs		
	Year	*Population*	*Jobs*	*Square Feet*
Base	FY15-16	52,259	55,663	59,400
Year 1	FY16-17	52,782	56,170	59,989
Year 2	FY17-18	53,311	56,682	60,583
Year 3	FY18-19	53,845	57,200	61,184
Year 4	FY19-20	54,385	57,722	61,790
Year 5	FY20-21	54,930	58,248	62,403
Year 10	FY25-26	57,738	60,962	65,559
	Ten-Yr Increase	5,479	5,299	6,159
	Growth Cost for Recreation Buildings =>			$3,141,000

Revenue Credit Evaluation

Currently the City of Coral Gables does not have any outstanding debt related to parks and recreation facilities. Therefore, a revenue credit for bond payments is not applicable. As shown in the cash flow analysis below, projected impact fee revenue roughly matches the growth cost of new facilities. Because impact fees fully fund expected growth costs, there is no potential double-payment from other revenue sources.

Proposed and Current Impact Fees

Figure PR7 provides a summary of the infrastructure standards used to calculate impact fees for parks and recreation. Impact fees are calculated for residential and nonresidential development, with net capital cost factors of $3,377 per person and $475 per job. The fee for an average-size dwelling is $7,260 (truncated), which assumes 2.15 persons per housing unit. Please see Appendix A for supporting documentation on the average number of persons by dwelling size in Coral Gables and the average number of jobs per 1,000 square feet of nonresidential floor area.

Figure PR7: Parks and Recreation Impact Fee Schedule

2016 Cost Factors

Fee Component	*Cost per Person*	*Cost per Job*
Active Park Improvements plus Land	$1,407	$198
Passive/Linear Park Improvements plus Land	$1,466	$206
Recreation Buildings plus Land	$504	$71
Revenue Credit	$0	$0
TOTAL	$3,377	$475

Residential (per dwelling)

Square Feet of Finished Living Space	*Persons per Housing Unit*	*Proposed Parks & Recreation Fee*	*Current Fees*	*Increase/ Decrease*
1400 or less	1.04	$3,512	$3,336	$176
1401 to 2500	1.71	$5,774	$3,336	$2,438
2501 to 3700	2.15	$7,260	$3,931	$3,329
3701 to 4900	2.44	$8,239	$3,931	$4,308
4901 or more	2.66	$8,982	$6,602	$2,380

Nonresidential (per 1,000 square feet of building)

Type	*Jobs per 1,000 Square Feet*	*Proposed Parks & Recreation Fee*	*Current Fees*	*Increase/ Decrease*
Retail & Restaurant	2.62	$1,244	$0	$1,244
Institutional & Industrial	0.99	$470	$0	$470
Office & Other Services	3.58	$1,700	$0	$1,700

Forecast of Revenues for Parks and Recreation

Figure PR8 indicates Coral Gables should receive approximately $21 million in parks and recreation impact fee revenue over the next ten years, if actual development matches the projections documented in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the need for infrastructure and impact fee revenue.

Figure PR8: Projected Impact Fee Revenue

Ten-Year Growth Cost for Parks and Recreation Facilities

Active Parks	$8,766,000
Passive/Linear Parks	$9,128,000
Recreation Buildings	$3,141,000
Total =>	$21,035,000

Parks and Recreation Impact Fee Revenue

		Average Residential $7,260 per housing unit	*Retail & Restaurant* $1,244 per 1000 Sq Ft	*Institutional & Industrial* $470 per 1000 Sq Ft	*Office & Other Services* $1,700 per 1000 Sq Ft
	Year	*Hsg Units*	*KSF*	*KSF*	*KSF*
Base	FY15-16	22,044	3,581	6,602	11,091
Year 1	FY16-17	22,288	3,617	6,618	11,202
Year 2	FY17-18	22,534	3,653	6,633	11,314
Year 3	FY18-19	22,782	3,690	6,648	11,427
Year 4	FY19-20	23,033	3,727	6,663	11,542
Year 5	FY20-21	23,286	3,764	6,677	11,657
Year 6	FY21-22	23,542	3,802	6,692	11,774
Year 7	FY22-23	23,801	3,840	6,707	11,892
Year 8	FY23-24	24,062	3,878	6,723	12,011
Year 9	FY24-25	24,326	3,917	6,738	12,132
Year 10	FY25-26	24,592	3,957	6,753	12,253
	Ten-Yr Increase	2,548	376	151	1,162
	Projected Revenue =>	$18,498,000	$468,000	$71,000	$1,975,000
				Total Projected Revenues (rounded) =>	$21,012,000

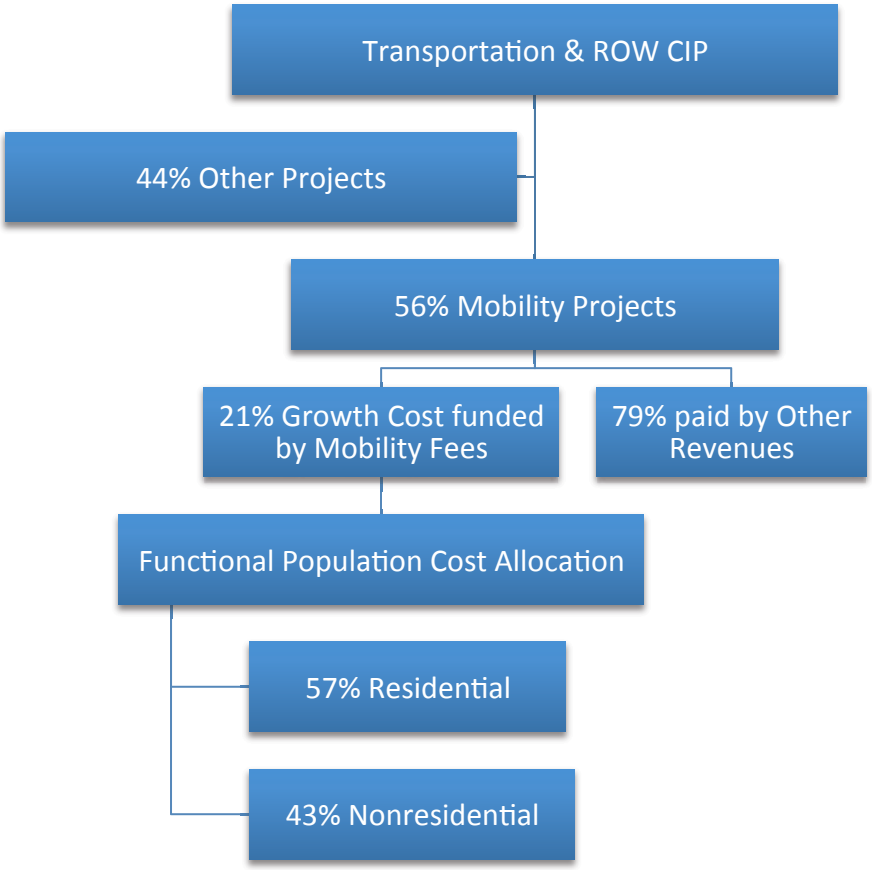
MOBILITY FEE

The 2016 impact fee study recommends a plan-based methodology to provide transportation improvements for all modes of travel. Figure M1 provides an overview of the mobility fee methodology. From the universe of all Transportation and Right Of Way (ROW) projects in Coral Gables' FY17-21 Capital Improvement Plan (CIP), staff and TischlerBise identified Mobility Projects (56% of the total CIP) needed to accommodate new development over ten years. Other Projects (44% of the Transportation & ROW CIP) that are not eligible for mobility fee funding include street resurfacing, sidewalk replacement, street-tree succession, and projects funded by Miami-Dade impact fees.

Impact fees will fund 10% of mobility projects that enhance existing multimodal facilities, or plan future multimodal improvements, which is consistent with the increase in population and jobs over the next ten years. Three mobility projects that expand multimodal infrastructure capacity will be fully funded by impact fees, less applicable grants. Overall, impact fees will fund 21% of mobility projects, with non-growth costs to be funded by other revenues (i.e. 79% of the total).

The growth cost of mobility projects was allocated to residential and non-residential development based on functional population (see Figure P2 and related text). The functional population analysis accounts for residents and jobs within Coral Gables, with adjustments for commuting patterns. Because Coral Gables is an employment center, the cost allocation is 57% residential and 43% nonresidential. In more suburban bedroom communities, infrastructure costs are more heavily weighted to residential development. The final step in the mobility fee methodology is to derive specific fees by dwelling size and type of nonresidential development, as discussed further below.

Figure M1: Mobility Fee Methodology Chart



Planned Mobility Improvements

As shown in Figure M2, the ten-year growth cost of planned Mobility Projects is approximately $7.34 million. Given the fact that Coral Gables is not expanding geographically (i.e. no significant additional transportation infrastructure on the periphery), the improvements listed below are primarily enhancements to existing facilities, along with additional bike paths and sidewalks. For ease of implementation, TischlerBise recommends a citywide mobility fee that limits expenditures to projects that will benefit all new development, such as multimodal improvements along arterials.

Figure M2: Growth Cost of Mobility CIP

Mobility Projects to be Partially Funded by Impact Fees

FY17-21 CIP Page#	*Description*	*Project Total*	*Growth Share*	*Growth Cost*
111	Installation of Bike Paths	$3,043,995	85%	$2,600,000
127	Sidewalk Extensions	$950,000	100%	$950,000
155	Aragon Pedestrian and Bike Amenities	$800,000	100%	$800,000
115	Multimodal Transportation Plan	$300,000	10%	$30,000
128	Traffic Calming Program	$2,225,000	10%	$223,000
141	Miracle Mile Streetscape	$22,188,200	10%	$2,219,000
143	Giralda Ave Streetscape	$4,730,000	10%	$473,000
147	Ponce Median - 8th St to Flagler St	$300,000	10%	$30,000
157	S Dixie Hwy Corridor Master Plan	$150,000	10%	$15,000
	Marginal Cost Subtotal	$34,687,195	21%	**$7,340,000**
	Non-Growth Share of Mobility Projects to be Funded by Other Revenues =>			$27,347,195

CIP Subtotal for Transportation & ROW =>	$61,704,114
Mobility Projects Share of Total =>	56%

Revenue Credit Evaluation

A credit for other revenues is only necessary if there is potential double payment for system improvements. In Coral Gables, General Fund revenue will be used for maintenance of existing facilities, correcting existing deficiencies, and for capital projects that are not impact fee system improvements. As shown below in the Figure M4, cumulative mobility fee revenue over the next ten years approximates the growth cost of system improvements. There will be no potential double payment from other revenues if elected officials make a legislative policy decision to use mobility fee revenue to fund the growth cost of system improvements.

Proposed Mobility Fees

As shown in the upper portion of Figure M3, the ten-year growth cost of Mobility Projects to be funded by fees is $7,340,000. Based on Coral Gables' functional population analysis, the cost allocation for residential development is 57%, while nonresidential development accounts for 43% of the demand for mobility improvements. For residential development, the growth cost of mobility improvements is $763 per additional resident. The mobility fee per dwelling is equal to the cost per person multiplied by the average number of persons per dwelling, by size range (i.e. square feet of finished living space). For example, an apartment building with small units (1400 or less square feet) would pay $763 per person multiplied by an average of 1.04 persons per dwelling, or $793 per dwelling unit (truncated). The mobility fee for nonresidential development is equal to the capital cost per additional job, multiplied by the average number of jobs per development unit, for each type of development.

Figure M3: Mobility Fee Schedule

Growth Cost and Allocation per Service Unit

		Growth Cost for Mobility Projects =>	$7,340,000
		2016	*2026*
	Population	52,259	57,738
	Jobs	55,663	60,962
		Growth Share Based on Increase	10%
	Functional Population Proportionate Share	*2016 to 2026 Increase*	*Cost per Service Unit*
Population	57%	5,479	$763
Jobs	43%	5,299	$595

Residential

Square Feet of Living Space	*Development Unit*	*Persons per Housing Unit*	*Proposed Mobility Fee*
1400 or less	Dwelling Unit	1.04	$793
1401 to 2500	Dwelling Unit	1.71	$1,304
2501 to 3700	Dwelling Unit	2.15	$1,640
3701 to 4900	Dwelling Unit	2.44	$1,861
4901 or more	Dwelling Unit	2.66	$2,029

Nonresidential

Type	*Development Unit*	*Jobs per Development Unit*	*Proposed Mobility Fee*
Retail & Restaurant	1,000 Sq Ft	2.62	$1,558
Institutional & Industrial	1,000 Sq Ft	0.99	$589
Office & Other Services	1,000 Sq Ft	3.58	$2,130

Funding Strategy for Mobility Improvements

The revenue projection shown in Figure M4 assumes implementation of the proposed 2016 mobility fee schedule and the development projections described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in fee revenue and the timing of capital improvements. Based on the proposed 2016 methodology, residential development will pay approximately 57% of the growth cost for mobility projects, with nonresidential development covering the remaining 43%.

Figure M4: Projected Mobility Fee Revenue

					Growth Cost
				Mobility Projects =>	$7,340,000
Mobility Fee Revenue					
		Average Residential	*Retail / Restaurant*	*Institutional & Industrial*	*Office & Other Services*
		$1,640	$1,558	$589	$2,130
	Year	per housing unit	per 1000 Sq Ft	per 1000 Sq Ft	per 1000 Sq Ft
		Hsg Units	*KSF*	*KSF*	*KSF*
Base	FY15-16	22,044	3,581	6,602	11,091
Year 1	FY16-17	22,288	3,617	6,618	11,202
Year 2	FY17-18	22,534	3,653	6,633	11,314
Year 3	FY18-19	22,782	3,690	6,648	11,427
Year 4	FY19-20	23,033	3,727	6,663	11,542
Year 5	FY20-21	23,286	3,764	6,677	11,657
Year 6	FY21-22	23,542	3,802	6,692	11,774
Year 7	FY22-23	23,801	3,840	6,707	11,892
Year 8	FY23-24	24,062	3,878	6,723	12,011
Year 9	FY24-25	24,326	3,917	6,738	12,132
Year 10	FY25-26	24,592	3,957	6,753	12,253
Ten-Yr Increase		2,548	376	151	1,162
Projected Revenue =>		$4,179,000	$586,000	$89,000	$2,475,000
				Total Projected Revenue over Ten Years (rounded) =>	$7,329,000

APPENDIX A: DEMOGRAPHICS AND DEVELOPMENT PROJECTIONS

Appendix A contains the projected population, housing units, jobs, and nonresidential floor area data that provide the foundation for the City of Coral Gables 2016 impact fee update. To evaluate the demand for growth-related infrastructure by development type and size, TischlerBise also prepared documentation on average number of persons by size of dwelling and jobs per thousand square feet of floor area (abbreviated as "KSF").

Development impact fees are based on the need for growth-related improvements and must be proportionate by type of land use. Demographic data and development projections will be used to demonstrate proportionality and anticipate the need for future infrastructure. In contrast to the City's Comprehensive Plan and the metropolitan area transportation model, which have a long-range horizon, impact fees require a quantitative analysis with a shorter focus. Typically, impact fee studies look out five to ten years, with the expectation that fees will be periodically updated (e.g. every 5-10 years). Infrastructure standards are calibrated using fiscal year 2015-16 data, with FY16-17 being the first projection year. In Coral Gables, the fiscal year begins on October 1st.

Summary of Growth Indicators

Key development projections for Coral Gables' impact fee study are housing units and nonresidential floor area (see Figure A1). These projections will be used to estimate impact fee revenue and to indicate the anticipated need for growth-related infrastructure. The goal is to have reasonable projections without being overly concerned with precision. Because impact fee methods are designed to reduce sensitivity to development projections in the determination of the proportionate-share fee amounts, if actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the City will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

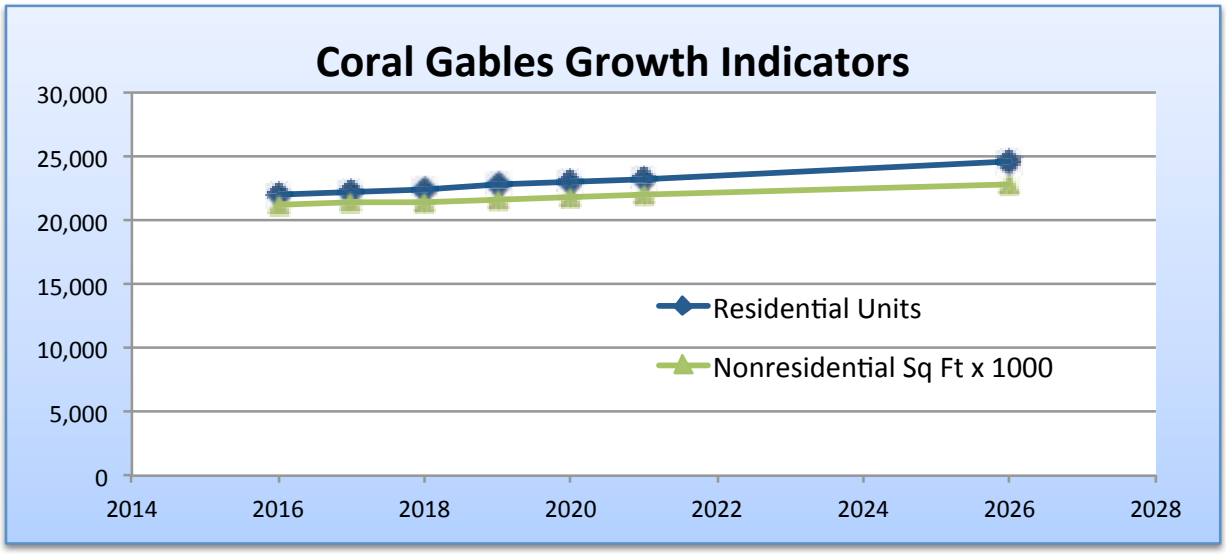
Over the next five years, the 2016 impact fee update expects an average increase of 248 housing units per year. In comparison, Coral Gables' net annual residential increase was an average of 121 housing units per year in calendar years 2013 through 2015.

Over the next five years, the City expects an average increase of 165,000 square feet of nonresidential floor area per year. In comparison, Coral Gables' averaged 179,000 square feet of nonresidential floor area per year in calendar years 2013 through 2015. Current estimates of floor area by type of nonresidential development are discussed below (see Figure A4 and related text).

Figure A1: Development Projections and Growth Rates

Coral Gables, Florida

	Year							2016 to 2021 Average Annual	
	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2026*	*Increase*	*Compound Growth Rate*
Residential Units	22,044	22,288	22,534	22,782	23,033	23,286	24,592	248	1.10%
Nonresidential Sq Ft x 1000	21,209	21,371	21,534	21,699	21,866	22,032	22,896	165	0.76%



Residential Construction

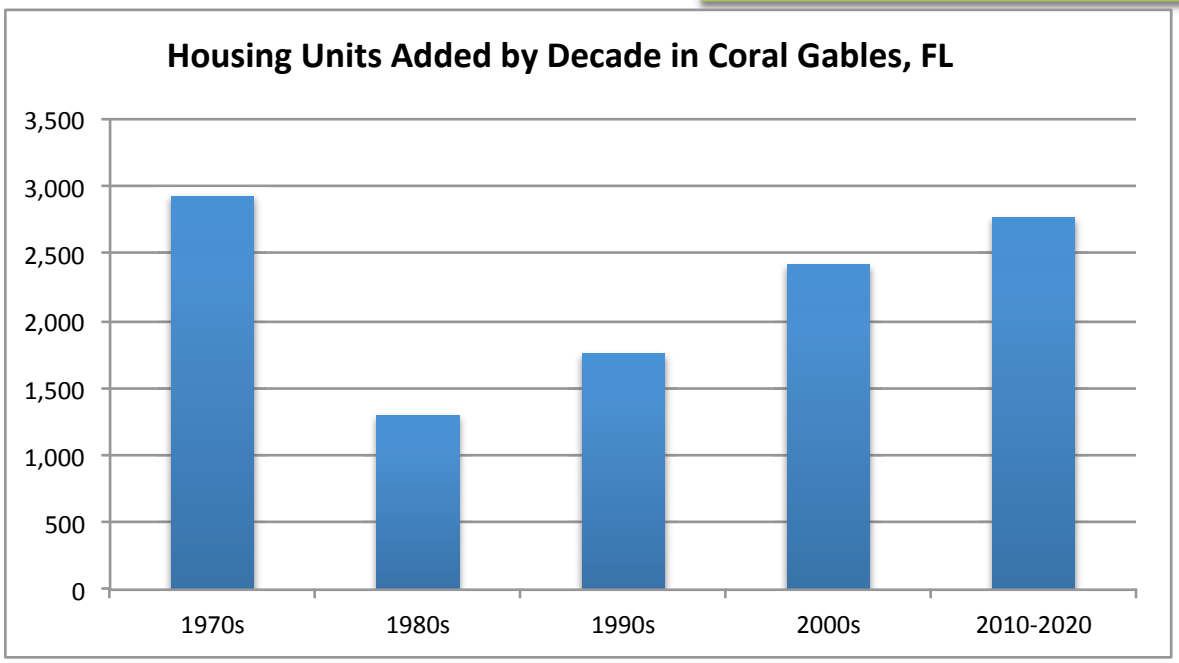
From 2000 to 2010, Coral Gables increased by an average of 242 housing units per year (see Figure A2). Consistent with the nationwide decline in development activity during the Great Recession, residential construction slowed significantly from 2008 to 2010, thus decreasing the number of units added during the past decade. From 2010 to 2020, Coral Gables expects to increase by an average of 277 housing units per year, which is slightly more than the previous decade.

Figure A2: Housing Units by Decade

Coral Gables, Florida	
Census 2010 Population*	46,776
Census 2010 Housing Units*	20,264
Total Housing Units in 2000*	17,849
New Housing Units 2000-2010	2,415

From 2000 to 2010, Coral Gables added an average of 242 housing units per year. The projected increase from 2010 to 2020 is an average of 277 housing units per year.

** U.S. Census Bureau SF1.*



Source for 1990s and earlier is Table B25034, American Community Survey, adjusted to yield total units in 2010. Projected units in 2020 from Figure A5.

Nonresidential Development

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development. TischlerBise uses the term "jobs" to refer to employment by place of work. In Figure A3, gray shading indicates three nonresidential development prototypes that will be used to estimate average weekday vehicle trips. Current nonresidential floor area estimates and job densities are documented in the next section.

The prototype for future commercial development (i.e. retail and restaurants) is an average-size Shopping Center (ITE code 820). A reasonable proxy for future institutional and industrial development is an Elementary School (ITE code 520). For office and other services, General Office (ITE 710) is the prototype for future development.

Figure A3: Nonresidential Vehicle Trips per Development Unit

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

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

Figure A4 indicates 2014 estimates of jobs and nonresidential floor area located in Coral Gables. Job estimates, by type of nonresidential development, are from the U.S. Census Bureau's Work Area Profile (obtained from OnTheMap web application). City staff provided Costar floor area estimates for retail, industrial and office development within Coral Gables. The total institutional and industrial floor area (6.57 million square feet) is the product of jobs multiplied by 1,010 square feet per job, which is the current average on the University of Miami's Coral Gables campus. In the 2013-14 academic year, UM had a total of 4,452,951 square feet of floor space, less 211,340 square feet for Lennar Medical Center (Type 2 building) and dorm space (1,286,486 square feet), yielding a net area of 2,955,125 square feet of Type 1 buildings.

Figure A4: Jobs and Floor Area Estimates

	2014 Jobs (1)		*Sq Ft per Job*	*2014 Floor Area (2)*	*Jobs per 1000 Sq Ft*
Retail & Restaurant (3)	9,190	17%	382	3,508,200	2.62
Institutional & Industrial (4)	6,508	12%	1,010	6,573,100	0.99
Office & Other Services (5)	38,966	71%	279	10,886,500	3.58
TOTAL	54,664	100%	384	20,967,800	2.61

(1) Work Area Profile, OnTheMap, U.S. Census Bureau.
(2) Industrial, Retail/Restaurant, and Office floor area from Costar; Institutional estimated from number of jobs: Hotel (in other services) based on number of rooms and average square feet per room.
(3) Major sectors are Retail Trade and Accommodation/Food Services.
(4) Major sectors are Educational Services and Public Administration. In the 2013-14 academic year, the University of Miami had 2,927 faculty and staff (full time equivalents) on the campus in Coral Gables. Given the insignificant amount of industrial development in Coral Gables, it was added to Institutional because they have similar job densities.
(5) Major sectors are Health Care/Social Assistance and Professional/Scientific/ Technical Services.

Detailed Land Use Assumptions

Development projections shown in Figure A5 and A6 are key inputs for Coral Gables' impact fee update. Cells with light blue shading are current estimates. For example, the 2014 estimate of 51,227 residents is from the U.S. Census Bureau. TischlerBise converted population into housing units, using the latest Census Bureau estimate of 2.15 persons per housing unit. Housing units include vacant and seasonal dwellings.

Figure A5: Projected Population and Housing Units

Coral Gables, Florida	*FY13-14*	*FY15-16*	*FY16-17*	*FY18-19*	*FY20-21*	*FY25-26*
FY begins October 1st	*2014*	*2016*	*2017*	*2019*	*2021*	*2026*
		Base Yr	*1*	*3*	*5*	*10*
Total Population						
in Housing Units	46,363	47,395	47,918	48,981	50,066	52,874
in Group Quarters	4,864	4,864	4,864	4,864	4,864	4,864
Citywide Population	51,227	52,259	52,782	53,845	54,930	57,738
Housing Units						
Citywide Housing Units	21,564	22,044	22,288	22,782	23,286	24,592
Persons per Housing Unit	2.15	2.15	2.15	2.15	2.15	2.15

Figure A6 indicates projected jobs and nonresidential floor area by type. Projected jobs were converted to projections of nonresidential floor area using the current multipliers listed in Figure A4. The high average of approximately 2.5 jobs for every housing unit indicates Coral Gables is an employment center. Coral Gables currently has an overall average of approximately 380 square feet of nonresidential floor area per job.

Figure A6: Projected Jobs and Nonresidential Floor Area

Coral Gables, Florida	*FY13-14*	*FY15-16*	*FY16-17*	*FY18-19*	*FY20-21*	*FY25-26*
FY begins October 1st	*2014*	*2016*	*2017*	*2019*	*2021*	*2026*
		Base Yr	*1*	*3*	*5*	*10*
Jobs in Coral Gables						
Retail & Restaurant	9,190	9,375	9,469	9,660	9,854	10,358
Institutional & Industrial	6,508	6,537	6,552	6,582	6,611	6,686
Office & Other Services	38,966	39,751	40,149	40,958	41,783	43,918
Total Jobs	54,664	55,663	56,170	57,200	58,248	60,962
Jobs to Housing Ratio	2.53	2.53	2.52	2.51	2.50	2.48
Nonresidential Floor Area (square feet in thousands)						
Retail & Restaurant	3,508	3,581	3,617	3,690	3,764	3,957
Institutional & Industrial	6,573	6,602	6,618	6,648	6,677	6,753
Office & Other Services	10,887	11,091	11,202	11,427	11,657	12,253
Total KSF	20,968	21,274	21,437	21,765	22,098	22,963
Avg Sq Ft Per Job	384	382	382	381	379	377
Avg Jobs per KSF	2.61	2.62	2.62	2.63	2.64	2.65

Service Units by Dwelling Size

The 2010 census did not obtain detailed information using a "long-form" questionnaire. Instead, the U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which is limited by sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). Part of the rationale for deriving fees by bedroom range, as discussed further below, is to address this ACS data limitation.

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Development fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. TischlerBise recommends that fees for residential development in Coral Gables be imposed according to the number of year-round residents per housing unit. Figure A7 indicates the average number of year-round residents by units in structure. In 2014, the control total for the city is 2.15 persons per dwelling (i.e. weighted average for all types of housing).

Figure A7: Year-Round Persons per Unit by Type of Housing

Coral Gables Population and Housing Characteristics

Units in Structure	*Persons*	*House-holds*	*Persons per Household*	*Housing Units*	***Persons per Housing Unit***	*Housing Mix*	*Vacancy Rate*
Single Unit*	32,966	11,195	2.94	12,306	2.68	60%	9%
2+ Units	11,489	6,404	1.79	8,328	1.38	40%	23%
Subtotal	44,455	17,599	2.53	20,634	**2.15**		15%
Group Quarters	4,864						
TOTAL	49,319				2.39		

Source: U.S. Census Bureau, 2014 American Community Survey, 5-Year Estimates, Tables B25024, B25032, B25033, and B26001.
** Single unit includes detached, attached, and mobile homes.*

Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the U.S. Census Bureau, in files known as Public Use Micro-data Samples (PUMS). Because PUMS files are available for areas of roughly 100,000 persons, Coral Gables is included in Public Use Micro-data Areas (PUMA) 8616. At the top of Figure A8, in the cells with yellow shading, are the survey results. Unadjusted persons per dwelling, derived from PUMS data, were adjusted downward to match the control total for Coral Gables, as documented above.

Figure A8: Average Number of Persons by Bedroom Range

			Recommended Multipliers (4)	
Bedrooms	*Persons (1)*	*Housing Units (1)*	*Persons per Housing Unit*	*Housing Mix*
0-1	69	56	1.10	11.5%
2	161	83	1.74	17.0%
3	399	168	2.13	34.5%
4+	539	180	2.68	37.0%
Total	1,168	487	2.15	100.0%

(1) American Community Survey, Public Use Microdata Sample for FL 2010 PUMA 8616 (2013 1-yr unweighted data).
(4) Recommended persons per housing unit are scaled to make the average derived from PUMS survey data match the control total for Coral Gables (i.e. 2.15 persons per housing unit).

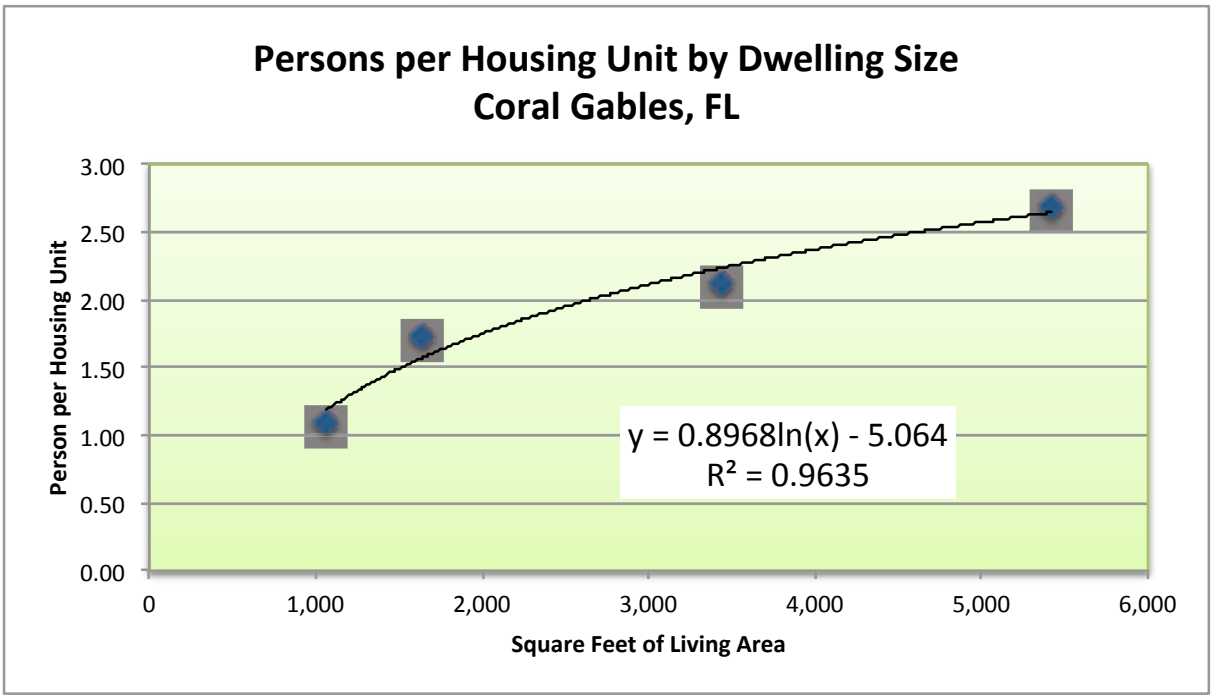
Average floor area and number of persons by bedroom range are plotted in Figure A9, with a logarithmic trend line derived from four actual averages by bedroom range in Coral Gables. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons, by dwelling size, using five size thresholds. For the purpose of impact fees, TischlerBise recommends a minimum fee based on a unit size of 1400 square feet and a maximum fee for units 4901 square feet or larger. Average dwelling sizes by bedroom range in Coral Gables were derived from building permit records from 2013 through 2015, except for the average size of 1,070 square feet for a one-bedroom dwelling, which is the mean for all multifamily units constructed in the South Census Region in 2014 (see U.S. Census Bureau Survey of Construction).

In Coral Gables, a mid-size dwelling (2501 to 3700 square feet) has an average of 2.15 persons. Small units (1400 square feet or less) average 1.04 persons. At the upper end, large units (4901 or more square feet) average 2.66 persons.

Figure A9: Persons by Square Feet of Living Space

Average persons per housing unit are derived from 2013 ACS PUMS data for Coral Gables. Average square feet of living space was derived from City building permits from 2013-15, except 1 bedroom, which is the mean size for all multifamily units constructed in the South Census Region in 2014.

Actual Averages per Hsg Unit			*Fitted-Curve Values*	
Bedrooms	*Square Feet*	*Persons*	*Sq Ft Range*	*Persons*
0-1	1,070	1.10	1400 or less	1.04
2	1,641	1.74	1401 to 2500	1.71
3	3,437	2.13	2501 to 3700	2.15
4+	5,418	2.68	3701 to 4900	2.44
			4901 or more	2.66



APPENDIX B: ADMINISTRATIVE CHARGES

According to Florida's impact fee enabling legislation, a jurisdiction must limit administrative charges for collection of impact fees to actual costs. Because the recommended update timeframe for impact fees is five years, administrative charges were allocated to the projected increase in service units over five years. Costs shown below include staff time for fee administration and the cost of impact fee studies.

Figure B1: Actual Cost of Fee-Related Studies and Administration

Input Variables for Administrative Charges

Impact Fee Collections by City Staff (over 5 years)	$95,000	
Impact Fee Studies	$98,920	
Total Administrative Cost over Five Years =>	$193,920	
Proportionate Share (Functional Population) =>	57%	43%
	Population	Jobs
Five-Year Increase in Service Units =>	2,671	2,585
	Cost per Person	Cost per Job
	$41	$32

Residential (per dwelling unit) by Square Feet of Finished Living Space

Sq Ft Range	*Persons per Hsg Unit*	*Proposed Administrative Charge*	*Current Service Charge*	*Increase/ Decrease*
1400 or less	1.04	$42	$22	$20
1401 to 2500	1.71	$70	$26	$44
2501 to 3700	2.15	$88	$45	$43
3701 to 4900	2.44	$100	$45	$55
4901 or more	2.66	$109	$45	$64

Nonresidential (per 1,000 square feet of building)

Development Type	*Jobs per 1,000 Sq Ft*	*Proposed Administrative Charge*	*Current Service Charge*	*Increase/ Decrease*
Retail & Restaurant	2.62	$83	$60	$23
Institutional & Industrial	0.99	$31	$10	$21
Office & Other Services	3.58	$114	$50	$64

APPENDIX C: IMPLEMENTATION AND ADMINISTRATION

All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. If cost estimates change significantly, the City should redo the fee calculations.

Residential Development

The demographics of residential development are based on data from the American Community Survey, obtained from the U.S. Census Bureau. Average dwelling sizes by bedroom range in Coral Gables were derived from building permit records. Coral Gables will collect impact fees from all new residential units, including mobile homes and recreational vehicles (if applicable). For a parcel intended for occupancy by multiple mobile homes and/or recreational vehicles, the landowner will pay an impact fee for each site that can accommodate a residential unit. One-time impact fees are determined by site capacity (i.e. number of residential units) and will not be imposed on replacement units that are the same size as existing residential units. If the replacement unit is larger than the existing dwelling, Coral Gables will collect impact fees for the additional living space.

Impact fees for residential development will be imposed by finished square feet of living space, excluding garages and non-climate controlled areas such as patios and porches. For live/work units with no clear delineation between the living and working area, total square feet of finished living space will be used to derive the impact fee. If the work area is on the first floor and living area on the second floor, the City of Coral Gables will apply the nonresidential fee schedule to the work area and the residential fee schedule to the living area.

Nonresidential Development

General nonresidential development categories (defined below) were used for the demographic analysis in the impact fee study for Coral Gables. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (e.g., trips and jobs per thousand square feet of gross floor area). For buildings in urban areas with a vertical mix of uses (e.g. ground floor retail with offices on the second floor and residential on the upper floors), Coral Gables will derive a cumulative impact fee for the predominant use on each floor. Parking garages are an ancillary use, not subject to impact fees.

Retail & Restaurant: Establishments primarily selling merchandise, including eating/drinking places. By way of example, this category includes commercial buildings, shopping centers, supermarkets, pharmacies, restaurants, bars and automobile dealerships.

Institutional & Industrial: This category includes public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, Institutional includes schools, universities, churches, daycare facilities, and government buildings. Given an insignificant amount of industrial development in Coral Gables, Industrial is combined with Institutional because they have similar job densities per thousand square feet of floor area. Industrial establishments are primarily engaged in the production, transportation, or storage of goods. By way of example, Industrial includes manufacturing, warehouses, trucking companies, utility substations and telecommunications buildings.

Office & Other Services: Establishments providing management, administrative, professional, governmental or business services; personal and health care services; lodging facilities; and entertainment uses. By way of example, Office & Other Services includes banks and business offices;

hotels and motels; movie theaters and bowling alleys; assisted living facilities, nursing homes, hospitals, medical offices and veterinarian clinics.

APPENDIX D: SANITARY SEWER CAPACITY FEES

The sanitary sewer capacity fee includes a cost recovery component for available capacity in the City's wastewater collection system and the growth-related cost of planned improvements that increase collection system capacity.

Sewer Service Area

Coral Gables currently has one sewer capacity fee schedule for the entire city. TischlerBise recommends continuation of this approach.

Projected Wastewater Flow

As shown in Figure D1, TischlerBise projected wastewater flow to 2030 based on the increase in population and jobs within Coral Gables (see Appendix A). Average daily wastewater flow is expected to increase from 3.78 Million Gallons per Day (MGD) in 2016 to 4.32 MGD in 2030.

Figure D1: Average Day Gallons of Sewer Flow

Year		Million Gallons Per Avg Day	Service Units*	Annual Increase Service Units*	Annual Increase MGD	Cumulative Increase Service Units*	Cumulative Increase MGD
past 2	FY13-14		105,891				
past 1	FY14-15		106,901				
Base	FY15-16	3.78	107,922				
future 1	FY16-17	3.82	108,952	1,031	0.04	1,031	0.04
future 2	FY17-18	3.85	109,993	1,041	0.03	2,072	0.07
future 3	FY18-19	3.89	111,045	1,052	0.04	3,124	0.11
future 4	FY19-20	3.93	112,107	1,062	0.04	4,185	0.15
future 5	FY20-21	3.96	113,178	1,071	0.03	5,256	0.18
future 6	FY21-22	4.00	114,260	1,082	0.04	6,339	0.22
future 7	FY22-23	4.04	115,354	1,094	0.04	7,432	0.26
future 8	FY23-24	4.08	116,458	1,103	0.04	8,536	0.30
future 9	FY24-25	4.12	117,574	1,116	0.04	9,652	0.34
future 10	FY25-26	4.16	118,700	1,126	0.04	10,778	0.38
future 11	FY26-27	4.20	119,837	1,138	0.04	11,915	0.42
future 12	FY27-28	4.24	120,987	1,150	0.04	13,066	0.46
future 13	FY28-29	4.28	122,147	1,159	0.04	14,225	0.50
future 14	FY29-30	4.32	123,318	1,171	0.04	15,396	0.54

* Residents plus jobs in Coral Gables.

Existing Sewer Facilities

Miami-Dade County provides wastewater treatment capacity and Coral Gables provides the sewer collection system. Because the City has oversized the collection system to accommodate future development, new customers will pay their proportionate share per gallon of capacity consumed. The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is commonly used for utility systems that must provide adequate capacity before new development can take place.

According to the Sanitary Sewer Plan of Compliance (Hazen and Sawyer, 2016), Coral Gables has invested approximately $23.37 million to construct gravity mains, pump stations, and force mains that can accommodate 29.96 MGD of peak wastewater capacity, which equates to approximately 7.49 MGD of average day wastewater flow. Even though engineering studies typically design facilities for peak capacity, fee studies often use average day gallons. As shown in the lower-right corner of the Figure D2, the sewer collection system has a capital cost of $3.12 per average day gallon of capacity.

Figure D2: Cost Recovery for Sewer Collection System

Basin Name	*Gravity Mains Initial Cost (12-21 inch)*	*Pump Station Peak Capacity (MGD)*	*Pump Station Initial Cost*	*Force Mains Initial Cost*
City 1	$37,899	3.19		
City 2	$801,969	4.90		
City 3	$1,014,548	1.27		
City 4B		0.09		
City 5	$14,268	1.87		
City 6		0.39		
G		0.59		
F		1.26		
E	$88,948	1.43		
Prospect		0.48		
Sunrise		0.38		
D		1.21		
Campamento		0.43		
Cocoplum 1		0.94		
Cocoplum 2		0.23		
Cocoplum 3		0.26		
Cocoplum 4		0.46		
C	$39,374	2.22		
Casuarina 1		0.35		
Casuarina 2		0.21		
Leucadendra 1		0.26		
Leucadendra 2		0.30		
Arvida		0.28		
Solan Prado 1		1.01		
Solan Prado 2		0.19		
Journeys End		0.30		
Campana		0.12		
Rovino		0.21		
Fire 3		0.04		
A	$269,317	2.95		
Bella Vista 1		0.55		
Bella Vista 2		0.53		
San Pedro		0.68		
Lugo		0.38		
H				
Total Peak Capacity		29.96		
Average Day Capacity*		7.49		
Total Cost	$2,266,323		$14,437,806	$6,663,170
			Grand Total =>	$23,367,299
		Cost of Collection System per Average Day Gallon of Capacity =>		$3.12

Data source: Sanitary Sewer Plan of Compliance, Hazen and Sawyer, March 2016.

** assumes average day capacity is 25% of peak*

Future Sewer Improvements

As shown in Figure D3, Coral Gables anticipates relatively minor expenditures of approximately $2.83 million on growth-related improvement over the next five years. The capacity projects to be partially funded by fees will reduce stormwater flow into sanitary sewers, which has the effect of increasing the capacity of the collection system. TischlerBise used an average-cost allocation, yielding a capital cost of $0.72 per gallon of average day capacity (i.e. total cost divided by total projected flow in 2020). Therefore, new development will only fund approximately 4% of the planned capacity projects.

Capacity fees exclude costs to upgrade, update, improve, expand, correct or replace sewer facilities to meet existing needs or stricter safety, efficiency, environmental or regulatory standards. According to the CIP, Coral Gables plans to spend $8.6 million on these excluded items over the next five years.

Figure D3: Sewer System Capital Improvements

CIP#	Fiscal Year =>	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	Five-Year TOTAL
Capacity Projects to be Partially Funded by Impact Fees							
169	Inflow & Infiltration Abatement	$1,882,827	$0	$0	$0	$0	$1,882,827
171	Cross Connection Removal	$290,457	$165,000	$165,000	$165,000	$165,000	$950,457
	Subtotal	$2,173,284	$165,000	$165,000	$165,000	$165,000	$2,833,284
						Sewer Flow in 2020 (gal/avg day)	3,930,000
						Capital Cost per Gallon of Capacity	**$0.72**
Projects Funded by Utility Rates							
165	Station F Rehabilitation	$167,551	$0	$0	$0	$0	$167,551
167	Major Repairs	$1,436,113	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$5,836,113
173	County Volume Ordinance	$2,198,947	$0	$0	$0	$0	$2,198,947
175	Sewer Pipe Cameras	$100,000	$0	$0	$0	$0	$100,000
177	Pump Station1 Upgrade	$250,000					$250,000
178	Grease Trap Assessment	$50,000					$50,000
	Subtotal	$4,202,611	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$8,602,611
	Total Sewer CIP	$6,375,895	$1,265,000	$1,265,000	$1,265,000	$1,265,000	$11,435,895

Revenue Credit Evaluation

Currently the City of Coral Gables does not have any outstanding debt related to sanitary sewer facilities. Therefore, a revenue credit for bond payments is not applicable. As shown in the cash flow analysis below, projected fee revenue roughly matches the growth cost of new facilities. Because impact fees fully fund expected growth costs, there is no potential double-payment from other revenue sources.

Sewer Capacity Fees

Proposed capacity fees for sewer facilities are shown in Figure D4. The proposed fee is equal to the net capital cost per gallon of capacity multiplied by the EDU demand factor of 221 gallons of wastewater flow on an average day. The EDU demand assumes 103 gallons of average day sewer flow per person (per capita flow factor for a mid-size single-family residence, obtained from Miami-Dade County Code Section 24-43.1) and the current average of 2.15 persons per housing unit in Coral Gables (see Appendix A).

For meters larger than 0.75 inches, a capacity ratio converts the fee per EDU to a proportionate fee based on hydraulic capacity. Proposed fees are 19-56% higher than current fees.

Figure D4: Sewer Fee Schedule

Demand Factors

Average Day Sanitary Sewer Flow per Person	103
Average Persons per Housing Unit	2.15

Cost Factors

Sewer Cost Recovery per Gallon of Capacity	$3.12
CIP Cost per Gallon of Capacity	$0.72
Principal Payments Credit	$0.00
Net Capital Cost Per Gallon	$3.84

Sewer Capacity Fee (per connection)

*Meter Size (inches)**	*Capacity Ratio***	*Proposed Sewer Fee*	*Current Fee*	*Increase / (Decrease)*
0.75	1.00	$850	$713	$137
1.00	1.67	$1,420	$1,071	$349
1.50	3.33	$2,831	$1,890	$941
2.00	5.33	$4,532	$2,902	$1,630
3.00	10.67	$9,073	$6,322	$2,751
4.00	16.67	$14,175	$10,687	$3,488
6.00	33.33	$28,342		
8.00	53.33	$45,350		

** Sewer fees are based on water meter size.*

*** Source American Water Works Association, M6.*

Forecast of Sewer Fee Revenue

Over the next five years, Coral Gables' growth cost for sewer facilities is approximately $0.69 million. As shown at the bottom of Figure D5, projected sewer fee revenue will cover the growth cost of wastewater facilities.

Figure D5: Sewer Fee Revenue Forecast

Five-Year Growth Costs for Sewer Facilities

Sewer Collection System Cost Recovery	$562,000
Growth Share of Sewer CIP	$130,000
Total	$692,000

Projected Sewer Capacity Fee Revenue

	Year	*Capital Cost* $3.84 per Gallon of Capacity
		Average Day Gallons
Base	FY15-16	3,780,000
Year 1	FY16-17	3,820,000
Year 2	FY17-18	3,850,000
Year 3	FY18-19	3,890,000
Year 4	FY19-20	3,930,000
Year 5	FY20-21	3,960,000
Five-Year Increase		180,000
Projected Sewer Capacity Fees =>		$691,000

APPENDIX E: IMPACT FEES FOR THE UNIVERSITY OF MIAMI

The distinctive character of a university campus, with a predominant student population, academic classroom buildings, on-site police patrol and on-campus recreation facilities, presents circumstances significantly different from other development in the City to warrant specific impact fees for the University of Miami campus. The impact fees calculated in Appendix E are based on data provided by the University of Miami.

Service Units per Development Unit

Unlike the previous studies, when TischlerBise prepared impact fees for the City (2007) and then a separate study for the University of Miami (2008), the 2016 update integrates current data for the University of Miami into the impact fee study for Coral Gables. This change in methodology is important because the University is a major employer and accounts for a significant portion of the nonresidential floor area.

Over the next ten years, the University will add new dorms and academic buildings, as specified in the University of Miami UCD Master Plan. For the purpose of impact fees, Type 1 buildings directly serve and support the student population, staff and faculty. Type 2 facilities generate activity not directly related to the student population and will pay the same impact fees as any other nonresidential building constructed with Coral Gables. The University-specific impact fees calculated in this Appendix apply to dorms and Type 1 academic buildings.

As shown in Figure E1, total building space was reduced by the floor area of Type 2 buildings and dormitories, yielding a net of 2,955,125 square feet for Type 1 academic buildings. To best match the base year data used in the Coral Gables impact fee analysis, TischlerBise used 2013-14 academic year data (i.e. 2,927 full time equivalents for faculty plus staff) to derive the key multipliers at the bottom of the table below. The University of Miami averages 1,010 square feet of academic building space for every job, or 0.99 jobs per thousand square feet of floor area (often abbreviated KSF).

Figure E1: Jobs per 1,000 Sq. Ft. for Type 1 Academic Buildings

School Year 13-14	*Square Feet*
Total in Floor Area Ratio	4,452,951
Less Type 2 (Lennar Medical Center)	211,340
Less Dorms	1,286,486
Net for Type 1 Academic Buildings	2,955,125
Faculty & Staff Full Time Equivalents (FTE) =>	2,927
Type 1 Square Feet per Job =>	**1,010**
Jobs per 1,000 Square Feet =>	**0.99**

Data source: Campus Planning & Development, University of Miami.

For the police impact fees, capital costs are allocated by type of nonresidential development based on Average Weekday Vehicle Trip Ends (AWVTE) per thousand square feet (KSF) of floor area. In contrast to the previous impact fee study, the latest version of Trip Generation, published by Institute of Transportation Engineers in 2012, now includes statistically valid rates for a University/College (see ITE code 550). As shown in Figure E2, the national average trip generation rate of 1.71 AWVTE per student was multiplied by UM's 14,583 FTE students and divided by UM's 2,955 KSF of academic building space, to yield an unadjusted trip generation rate of 8.44 AWVTE per KSF. TischlerBise "annualized" this rate because the academic year is only 32 of the total 52 weeks in a calendar year.

Figure E2: Vehicle Trips per 1,000 Sq. Ft. for Type 1 Buildings

National average trip rate*	1.71	Average Weekday Vehicle Trip Ends (AWVTE) per Student
School Year 2013-14 FTE Students at UM	14,583	
Type 1 Academic Floor Area (in thousands)	2,955	
	8.44	AWVTE per thousand square feet (KSF)
Academic weeks per year	32	
Total weeks per year	52	
	5.19	Annualized AWVTE per KSF

** Source: University/College (550), Trip Generation Institute of Transportation Engineers (2012).*

Capital Cost per Service Unit

In addition to the University of Miami's customized multipliers discussed above (i.e. jobs and AWVTE per KSF), impact fees are derived using capital costs per service unit (i.e. students, jobs and vehicle trip ends). As documented in the main body of the 2016 impact fee study, these costs per service unit for each type of public facility are derived using current infrastructure standards. Impact fees for the University of Miami use the same cost factors unless on-campus facilities reduce the demand for infrastructure. Consistent with the extensive analysis contained in the 2008 impact fee study, the capital cost per service unit is the same for the University as the remainder of the city, except for parks/recreation and police facilities. Given extensive recreation facilities on campus, additional students residing in dorms and employees at the Coral Gables campus will not significantly impact city parks and recreation facilities. For police facilities, future dorms and academic buildings will continue to pay 94% of the capital cost, as documented in 2008 impact fee study.

Impact Fee for Dormitories

For additional dorms constructed on the University of Miami campus, the impact fee is equal to the capital cost per person in dorms (see Figure E3) multiplied by the number of dormitory residents (i.e. beds per building). The capital cost per person for police facilities is 94% of the cost factor for the remainder of Coral Gables. For all other types of pubic facilities to be funded by impact fees (i.e. fire, municipal, mobility and administrative charges), the cost per dormitory resident is the same as the cost per person used in the citywide impact fee. The University of Miami fee for dormitories excludes parks and recreation facilities. Also, if the University constructs any free standing, faculty/staff housing, citywide residential impact fees are applicable (see Figure ES3).

Figure E3: University of Miami Impact Fee per Student

Cost per Person in Dorms		*Cost per Person Citywide*
Police Facilities (94%)	$118	$126
Fire Facilities	$142	$142
Municipal Facilities	$430	$430
Parks and Recreation	$0	$3,377
Mobility Facilities	$763	$763
Administrative Charges	$41	$41
Total Cost per Person	**$1,494**	$4,879
Current Cost per Student	$2,056	
Increase/Decrease	-$562	

Impact Fee for Academic Buildings

For academic buildings, the unique impact fee for the University of Miami is for police facilities, and consistent with the cost per student discussed above, Type 1 academic buildings do not pay the parks and recreation impact fee. As shown at the top of Figure E4, the University's police impact fee of $66 per KSF is equal to 5.19 AWVTE per KSF multiplied by the 33% trip adjustment factor (conversion to primary inbound trips) and the net capital cost of $39 per inbound vehicle trip. The impact fee components for all other types of infrastructure (i.e. fire, municipal, mobility and administrative charges) are the same as the remainder of Coral Gables. In total, academic buildings will pay $1,127 per KSF, which is an increase compared to the current impact fee of $650 per KSF. As discussed in the main body of the 2016 impact fee study, nonresidential fees increased primarily due to the updated functional population analysis and the additional of a mobility fee.

Figure E4: University of Miami Impact Fee for Type 1 Buildings

	Police Facilities Cost per Inbound Vehicle Trip
Net Capital Cost (94%)	$39

Nonresidential (per 1,000 square feet of building)

Type	*Avg Wkdy Veh Trip Ends*	*Trip Adjustment Factors*	*University of Miami Police Facilities Fees*
Academic Buildings	5.19	33%	$66

Fee Schedule per KSF for Academic Buildings (Type 1)		*Cost per KSF Citywide and Type 2*
Police Facilities	$66	$213
Fire Facilities	$109	$109
Municipal Facilities	$332	$332
Parks and Recreation	$0	$470
Mobility Facilities	$589	$589
Administrative Charges	$31	$31
TOTAL	**$1,127**	$1,744
Current Impact Fee per KSF	$650	
Increase/Decrease	$477	