

Technical Memorandum on the Methods of Calculating Roads, Parks, Emergency Medical and Public Educational Impact Fees

Prepared for The
Board of County Commissioners of
Glades County

by

James C. Nicholas, Ph.D.
March 14, 2006

Development Impact Fees

Development impact fees have become a commonly used source of revenue to supplement available means of funding capital facility improvements needed to accommodate new development. Impact fees grew out of two rather commonly held notions:

1. Generally, new development does not pay the cost of capital facilities needed to accommodate the residents and businesses from standard sources of revenue, and
2. It would be inequitable to impose the cost of extending facilities to new developments on existing residents and taxpayers.

In Florida, both the courts¹ and the Florida Statutes² acknowledge local governments' authority to impose equitable impact fees. Impact fees are not taxes and are governed by a standard that has become known as the "dual rational nexus test." This test has two major components:

1. That the facilities to be charged to new development as impact fees must be needed to serve that new development, and
2. That the funds collected as impact fees must be earmarked and spent for the purposes for which they were collected.

Implied in this test is that any impact fee cannot exceed a *pro rata* or proportionate share of the anticipated costs of providing new developments with capital facilities.

This memorandum will set out how the proposed impact fees for the Glades County were calculated. The methods used comply with the dual rational nexus test, first by establishing or identifying the demand for facility expansions that new development will require, and then calculating the County's cost of providing those facilities on a *pro rata* basis. After review of these methods and data, if the Board of

¹ See *Hollywood, Inc. v. Broward County*, 431 So. 2d 606 (Fla. 4th DCA 1983). In this opinion the Court observed:

[W]e discern the general legal principle that reasonable dedication or impact fee requirements are permissible so long as they offset needs sufficiently attributable to the subdivision and so long as the funds collected are sufficiently earmarked for the substantial benefit of the subdivision residents.

² See Section 163.3202(3), Florida Statutes.

County Commissioners finds the data and methods are reasonable, the County should not adopt any impact fees that exceed the amounts set out herein.

Glades County Population

Table 1 sets out the historic and projected population of Glades County. The projections shown are those prepared by the Bureau of Economic and Business Research at the University of Florida. The methodology employed by the Bureau does not allow it to consider the tremendous growth potential for Glades County as coastal Florida, most importantly south Gulf coastal Florida fills up. Development has progressed eastward from the Gulf coast. The following graphic shows Charlotte County development progressing toward Glades County.



As development spills into Glades County any relationship to historic growth rates will no longer apply. The data in Table 1 are shown because it is conventional to begin such an analysis as this with population data. The only population data that will be used herein are the current population estimates.

**Table 1
HISTORIC AND PROJECTED POPULATION
GLADES COUNTY**

Year	Population	Year	Population
1990	7,591	2011	12,118
1991	7,936	2012	12,285
1992	8,102	2013	12,444
1993	8,256	2014	12,614
1994	8,455	2015	12,766
1995	8,644	2016	12,919
1996	9,553	2017	13,086
1997	9,834	2018	13,248
1998	10,018	2019	13,413
1999	10,331	2020	13,565
2000	10,576	2021	13,716
2001	10,612	2022	13,868
2002	10,664	2023	14,024
2003	10,729	2024	14,177
2004	10,904	2025	14,316
2005	11,128	2026	14,458
2006	11,328	2027	14,594
2007	11,505	2028	14,733
2008	11,672	2029	14,872
2009	11,821	2030	14,991
2010	11,964		

SOURCE: <http://edr.state.fl.us/population.htm>

Table 2 shows the residential demographics of Glades County. The census and the data shown above in Table 1 count only those persons that maintain their residence in Glades County. There are many more people present than those that are permanent residents. Table 2 shows both permanent residents and seasonal residents. These data are presented by dwelling unit type in Table 3.

**TABLE 2
DEMOGRAPHICS
GLADES COUNTY**

	1990	2000	2005

Resident Population	7,591	10,576	11,128
Peak Population	12,167	15,897	16,727
Avg House Hold size	2.631	2.746	2.746
Total Housing Units	4,624	5,790	6,092
Occupied Units	2,885	3,852	4,053
House Holds	2,885	3,852	4,053

SOURCES: www.census.gov/americanfactfinder/ and Florida Legislature, Office of Economic & Demographic Research.

**Table 3
GLADES COUNTY OCCUPANCIES**

	Dwelling Units	Population		Peak Per Unit
		Resident	Peak	
Single Family Detached	2,048	3,748	5,633	2.751
Multi-Family	310	527	792	2.555
Mobile Home	3,180	6,164	9,266	2.914
Boat RV	252	137	206	0.817
TOTAL	5,790	10,576	15,897	2.746

SOURCE: Bureau of the Census, 2000 Census of the Population, Public Use Micro-Sample.

Road Impact Fees

The formula for calculating the road impact fees is:

$$\text{Attributable New Travel in Vehicular Miles per Day} = \frac{[(\text{Vehicular Trip Ends Per Day} \times \text{Average Trip Length}) / 2] \times \% \text{ New Trips}}{}$$

$$\text{New Lane Miles of Roads} = \frac{\text{Attributable Travel}}{\text{Capacity per Lane Mile in Vehicles per Day}}$$

$$\text{Road Cost} = \text{New Lane Miles of Roads} \times \text{Cost per Lane Mile}$$

$$\text{Credits} = \{[(\text{Attributable Travel} \times \text{Days per Year}) / \text{Miles per Gallon}] \times \text{Capital Portion of Motor Fuels Tax}\} \times \text{Present Value Factor}$$

$$\text{Present Value Factor} = \text{Sum from 1 to 25 of } (1 / (1.045^N))$$

Where N Is the Year from 1 To 25

$$\text{Net Cost} = \text{Total Cost} - \text{Credits}$$

These formulae calculate, first, the travel that individual units of new development are expected to place on the Glades County road system and, second, the physical quantity of roads, in terms of lane-miles, required to accommodate that travel at Glades County's adopted level of service. The weighted average adopted level of service for Glades County roadways approximates Level of Service D. The road network of Glades County is currently operating at Level of Service C.

The third step is to calculate the cost of acquiring the necessary rights-of-way and the cost of actually constructing the needed road improvements using the data shown in Table 1. This calculation uses cost provided by the Florida Department of Transportation and relevant to Glades County road costs per lane-mile.

The next step is to determine what new development will pay toward the cost of additional road capacity in motor fuel taxes. The federal government imposes a ¢16.7 motor fuels tax, 51.3% of the receipts from this tax are devoted to capital outlay [Table 5]. The State of Florida imposes two motor fuel taxes. The first is 15.4 cents per gallon tax that is used to fund the state road system. Approximately 47% of this tax is directed toward capital improvements [Table 5]. These state and federal motor fuel taxes generate funds that are used, in part, to fund capital improvements and maintenance within Glades County, thus payment of those taxes

should be considered in calculating the net fiscal impact of new development on road funding within Glades County. The second State of Florida motor fuel taxes are the so-called 5th, 6th, 7th and 8th cent taxes. The 5th, 6th and 7th cent receipts are distributed to counties on a formula basis. The 8th is distributed to cities as part of the Municipal Revenue Sharing program and is not restricted for transportation. A 9th cent is authorized if approved by the voters. Counties in Florida are now authorized to impose up to 11 cents per gallon as the so-called Optional Motor fuels tax. Glades County imposes 6 cents. These receipts are divided between the county and the municipalities. The total motor fuel taxes within Glades County amounts to ¢40 per gallon, ¢19 of which are devoted to capital improvements. Therefore, some consideration needs to be given to future payments of motor fuel taxes even though the cost of road capacity expansion will be incurred in the present. This consideration is given by considering the payments of these motor fuel taxes occasioned by the development for the next 25 years. These future payments are then reduced to present value at an interest rate of 4.5%.

The net cost is the total cost less the present value of future payments in the form of motor fuel taxes and motor fuel tax equivalents. Any road impact fee enacted by Glades County cannot exceed the net cost shown in Table 10.

These formulae and calculations are based upon averages and typical conditions. As such, it is possible that the impact of individual or particular new developments could be misestimated. Thus, it is recommended that the road impact fee implementing ordinance allow individuals the opportunity to submit alternative and site or development specific calculations. However, care should be exercised so that the alternate calculations are limited to situations where there are meaningful differences between the averages used in these calculations and the subject development as distinct from normal variations about the mean. As with all statistics, there will be variations about the mean. When individual data are simply variations about the mean they are not different from the mean. However, there are circumstances where individual situations are statistically different from the mean. In these situations alternate calculations should be used. Perhaps an example would help. The trip generation rate for multi-family is 6.72 per living unit. Normal variation about this statistical mean would be as much as 5.8 to 8.6. A count of 6.0 trips per day for a multifamily development would fall within the normal variation about the mean. Alternatively, a count of 4.5 trips per day would fall outside of normal variation about the mean. If such an alternate count were to be accepted as the basis for a reduced impact fee, the reason for the significant deviation should be identified and assurances should be given that such characteristics will be permanent. A deed restricted retirement multifamily development would tend to have fewer trips than a non-restricted development. Before a trip rate relevant to a retirement community could be accepted, assurances should be provided that the subject development would be and remain an age restricted retirement community.

The data presented in Tables 4, 5 & 6 are the parameters used in calculating impact

on the Glades County road system, the cost of new roads and the net impact of growth on the road capital finance system. The sources are listed. The formula for calculation was set out above. In this section the data and calculations are discussed.

TRAVEL. The relevant travel by land use type and unit is calculated by multiplying the number of trip ends per 24-hour day (ADT) times the average trip length, times the percent new trips. The result is then reduced to one-half to adjust the number to trip ends to the number of travel trips (a travel trip, say from home to work, would have two ends, one leaving home and one arriving at work). This reduction is to correct for over-counting. Such over-counting is due to the fact that impact fees would be charged to both attractors and generators of traffic (or both ends of the travel trip). An example might make this point clear. Assume a world in which there are only homes and shops. Homes would be the traffic generators and shops would be the attractors. Further assume that all homes and shops are 5 miles apart. From the perspective of the home, a round trip to the shop is 10 miles. From the perspective of the shop a round trip from the home is 10 miles. The total of both home and shop travel would be 20 miles. But, from a global perspective, only 10 miles of travel has occurred. Thus it is necessary, if global perspectives are to be taken, to correct for this double-count. The individual factors in this calculation and their sources are:

DAILY TRIP RATE. The Average Daily Travel (ADT), in trip ends per day, is taken from *Trip Generation*, (7th Ed), 2003, published by the Institute of Transportation Engineers (ITE). Note should be taken of the fact that two different editions of the ITE's *Trip Generation* are used, the 6th and the 7th. These two editions are used because various editions address particular items of relevance to this study and some of these items addressed in the 6th Edition are not re-addressed in the 7th Edition.

PERCENT NEW TRIPS. Many land uses, while attracting traffic, generate little, if any, new traffic (other than attracting existing traffic to a particular location). There are several reasons for this situation. First, the multiple purpose trips will tend to attract traffic to particular locations while generating little if any additional travel. Second, the capturing of existing trips, such as stopping for a quart of milk on the way home from work, will result in little of any additional travel. Third, diverting a trip that already existed, such as taking the long way home from work to shop, will place limited new travel on the road system. Take, for example, the convenience store and the service (gas) station. The typical visits to these establishments, especially during the peak hour, are made by individuals who are going elsewhere such as home or work. An example may help. Let there be an individual driving from work to home (which would be two trip ends), a distance of 8 miles. Assume that this individual stops at the day care center to pick up a child, a convenience store to get milk and a service station for gasoline. How many trips have

been made? According to the standard methodology of transportation engineering, a total of 8 trips have been made:

- *leaving work
- *entering the day care center
- *leaving the day care center
- *entering the convenience store
- *leaving the convenience store
- *entering the service station
- *leaving the service station
- *arriving home.

If we were to apply the average trip length of 5 miles to these trips, the result would be 40 miles, a vast overstatement of actual travel. This overstatement is corrected in two ways. First, to deduct, by a percentage reduction factor (% NEW TRIPS), for trips to particular land uses that do not place additional travel on the roads and, second, to adjust the trip lengths for non-residential land uses which more accurately reflect the travel patterns of individuals visiting those sites. The first, % NEW TRIPS, is set out in Table 6 and used in Table 9. The second, adjusted trip lengths are also included in Table 8 and are shown in Table 9. The % NEW TRIPS is, ultimately, a professional judgment. Such judgments, however, are based upon several articles in the "ITE Journal" and specifically upon the "pass by" analysis set out in the 6th edition of the ITE's *Trip Generation*.

AVERAGE TRIP LENGTHS. The trip lengths shown in Table 8 are derived from the National Household Transportation Survey.³ These national studies are adjusted to Glades County conditions where it is expected that trip lengths will be shorter. Additionally, travel of local streets is also factored out.

REQUIRED NEW LANE MILES. This is calculated by dividing the attributable new miles of daily travel (total daily miles of travel divided by 2) by the 24-hour capacity of a lane-mile of roadway. The capacity utilized is 17,708 vehicles per lane-mile per day. Lane miles are converted to lane feet by multiplying lane miles by 5,280.

ANNUAL CAPITAL PAYMENTS. The Florida and Glades County transportation finance systems receive a portion of the motor fuel tax to pay for new roads and other road improvements. This is calculated by determining the attributable miles of travel per year and dividing by the average miles per gallon to arrive at gallons per year of motor fuel

³ US Dept of Transportation, Bureau of Transportation Statistics, National Household Transportation Survey, 2001, www.bts.gov/programs/national_household_travel_survey/.

consumption by land use type. This fuel consumption is then multiplied by the dollars per gallon going to road capital projects to arrive at annual payments toward road capacity improvements.

CREDIT. The credit given to new development results from determining the present value of future annual payments toward road capacity improvements. This is calculated by multiplying the annual capital payments by the present value factor.

TOTAL ROAD COST. The quantity of lane miles of new roads, as discussed above, is multiplied by the construction cost per lane mile of road plus the cost per lane mile for rights of way. The average cost for construction of county roads is \$1,336,726 per lane mile, including rights of way.

NET COST. The net cost is simply the total cost less any applicable credit.

Table 4 shows the anticipated road cost for Glades County. Florida Department of Transportation projects in District 1, specifically projects in Lee, Charlotte, Hendry, Highlands and Okeechobee counties that have some degree of comparability to Glades County. The Glades County costs are reduced from the FDOT experience in recognition of the fact that Glades County should experience costs less than those of the state.

**TABLE 4
ROAD COST PARAMETERS
GLADES COUNTY**

PER LANE MILE ROAD COSTS:			
	CONSTRUCTION	R.O.W.	TOTAL
FDOT District 1	\$1,619,092	\$338,937	\$1,958,029
Glades County	\$1,133,364	\$203,362	\$1,336,726
	84.79%	15.21%	100.00%
	Cost per Lane-Foot		\$253.17

SOURCE: Florida Department of Transportation.

The funding of road capital improvements in Florida and in Glades County is by means of motor fuel taxes. The level and allocation of motor fuel taxes are shown in Table 5. Total motor fuel taxes paid amounts to ¢40 per gallon. This is divided with ¢21 for maintenance and ¢19 for road improvements. When net

**TABLE 5
ROAD REVENUE PARAMETERS
GLADES COUNTY**

Motor Fuel Taxes:	Rate per	% Capital	Effective
--------------------------	-----------------	------------------	------------------

	Gallon		Rate
FEDERAL	\$0.154	49.7%	\$0.077
STATE	\$0.136	43.4%	\$0.059
COUNTY:			
5TH & 6TH	\$0.020	20.0%	\$0.004
7TH	\$0.010	0.0%	\$0.000
8TH	\$0.010	0.0%	\$0.000
9 TH	\$0.010	50.0%	\$0.005
OPTIONAL 1	\$0.060	75.0%	\$0.045
OPTIONAL 2	\$0.000	100.0%	\$0.000
TOTAL	\$0.400		\$0.190
Other Parameters:			
Miles per Gallon			16.900
Lane Capacity (Vehicles Per Day)			10,103
Capitalization Period (Years)			25
Discount Rate			4.00%
Present Value Factor			15.622

SOURCES: US Department of Energy, www.eia.doe.gov/emeu/mer/pdf/pages/sec1_17.pdf

US DOE, Highway Statistics 200, Nov. 2003.

Glades County, May 2005.

Federal Highway Administration, <http://www.fhwa.dot.gov/policy/ohpi/hss/pubs.htm>

FI Dept of Transportation, Tentative 04-09 Work Program, <http://www.dot.state.fl.us/financialplanning/>

NOTES: (1) The Federal tax of \$.184 is reduced to \$.1544 because \$0286 is transferred to mass transit and \$.001 is used to fund underground storage tank clean-up.

(2) The motor fuel tax rates shown are for both gasoline and diesel, with the rate shown being a weighted average of the two.

road costs are calculated, the total cost will be reduced by the amount expected to be paid toward road construction costs at ¢19 per gallon.

Table 6 sets out the “pass-by” formula. This formula projects the portion of vehicles visiting a commercial site that were “passing-by” and stopped in on the way to some other destination. This formula was derived from studies published by the Institute of Transportation Engineers. While the studies reported had a

**TABLE 6
ITE "PASS BY" FORMULA**

BUILDING SIZE	PASS-BY PERCENT	NEW TRIPS PERCENT
Under 100,000 FT ²	43.4	56.6
100,000 -199,999 FT ²	41.7	58.3
200,000 – 399,999 FT ²	39.5	60.5
400,000 FT ² & Over	33.9	66.1

SOURCE: Institute of Transportation Engineers, TRIP GENERATION,

6th Edition, 1997.
 Pass-By Trip % = 45.1 - [.0225 * (X)]
 X - 1,000 Square Feet Gross Leasable Area

limited number and type of commercial sites, the results are consistent with everyday experience. The formula indicates that smaller commercial establishments have more “pass-by” business than larger. This pass-by attraction is factored into the calculation as Percent New Trips. The studies reported have been limited. First, they dealt entirely with retail commercial establishments. Second, the retail establishments studied can be characterized as “shopping centers.” This limited set of data is used as a basis to project pass-by capture to other types of land uses. The data used are shown in Table 6.

**TABLE 7
 ROAD CAPACITIES
 LOS "C" Non-State Roadways**

Lanes	Capacity	Type	Per Lane
2	9,100	Undivided	4,550
4	21,400	Divided	5,350
6	33,400	Divided	5,567
LOS "C" Uninterrupted Flow			
2	13,800	Undivided	6,900
4	47,800	Divided	11,950
6	71,600	Divided	11,933
Grand Average			7,708

SOURCE: FI DOT, using Non-State Roadways at LOS C.

Table 7 shows adopted level of service for Glades County roads measured in vehicular capacity per lane-mile of road within a 24-hour period. The adopted level of service for Glades County is Level of Service “C.”

Average trip lengths are shown in Table 8. The base data for the lengths used in Glades County are nationwide norms as reported by the US Department of Transportation. In those studies, the USDOT analyzed how trip lengths varied by type of area. These studies showed that as communities become larger in population trip lengths become longer. Based on these studies, it is projected that Glades County trip lengths would be equal to 85% of the national norms. These data are shown in Table 8 as Glades County. Most of actual travel occurs on collector and arterial roads. Nevertheless, a portion of travel does occur on neighborhood streets. The cost of constructing neighborhood streets is borne by developers and therefore should not be charged as travel to be accommodated on the road system. The net trip lengths by trip purpose and by land use type are also shown in Table 5. These are the data used in Table 9 to estimate road impact.

TABLE 8
AVERAGE TRIP LENGTHS

TRIP LENGTHS (Miles):	NATIONAL	GLADES COUNTY	ON ARTERIAL & COLLECTOR ROADS
All Trips	10.03	8.06	6.85
To/From Work	12.11	9.73	8.27
Work Related Business	28.26	22.70	19.30
Shopping	7.02	5.64	4.79
Personal Business	7.84	6.30	5.35
School/Church	6.00	4.82	4.10
Social & Recreational	11.36	9.13	7.76
Travel on Local Roads - Percent of All Travel		15%	15%
Residential Based Trips (Miles) – Average			6.85
Office Based Trips (Miles) - 50% Work and 50% Pers. Business			6.81
Commercial Based Trips (Miles) - 20% Work and 80% Shopping			5.49
Industrial Based Trips (Miles) - 80% Work and 20% Average			7.99
Recreational Based Trips (Miles) - 100% Recreational			7.76
Short Trip Reduction Factors:			
Convenience Trip – Percent Reduction			80%
Neighborhood Trip - Percent Reduction			60%
Local Trip - Percent Reduction			40%
Community Trip - Percent Reduction			20%

SOURCE: US Dept. of Transportation, Bureau of Transportation Statistics, "Summary of Travel Trends: 2001 National Household Transportation Study," p. 16 & 46, and US Dept. of Transportation, Federal Highway Administration, "NPTS Databook," October 2001, p. 4-35.

Table 9 begins the combination of the data. The first data column shows the number of vehicular trip movements associated with the type and quantity of development shown. These movements include both entrances and exits from the site and thus must be corrected when travel is being calculated. These are vehicular trips over a 24-hour period. These trip generation rates are those reported by the Institute of Transportation Engineers. These data are recognized as authoritative by the Florida Department of Transportation and are used by the vast majority of local jurisdictions within Florida. The trip lengths are those set out in Table 5. The Percentage New are the result after subtracting out the pass-by trips. The last column, New Roads in lane-feet, is the attributable travel divided by the 24-hour capacity of a lane-mile of road.

Using the data in Table 9, a single family home has 9.57 trip-ends per day – 4.785 outbound and 4.785 inbound. Each trip has a Glades County average length of 6.85 miles per day on arterial and collector roads. This results in 32.78 miles of daily travel attributable to a single family home. The other half of the travel is attributable to the places that the home-based trips are starting from or going to. With an average capacity of 7,708 vehicles per lane-mile per day, it would require one lane of road 22.44 feet long to accommodate a new single family home. It follows that every time a new home is built, 22.44 feet of roadway will be consumed by the expected travel from that home. This nexus is the first component of the dual rational nexus test.

TABLE 9
ROAD NEEDS BY LAND USE TYPE
GLADES COUNTY

LAND USE TYPE (UNIT)	No. of TRIPS	AVG. LENGT H (Miles)	% NEW TRIPS	NEW ROAD S (Lane Feet)
RESIDENTIAL:				
Single Family Detached Unit	9.57	6.85	100.0 %	22.44
Multi-Family Unit	6.72	6.85	100.0 %	15.79
Mobile Home	4.99	6.85	100.0 %	11.72
Recreational Vehicle	3.70	6.85	100.0 %	8.66
NON-RESIDENTIAL:				
Walk-in Bank per 1,000 FT ² or fraction thereof	156.48	2.72	36.5%	53.28
Drive-Thru Bank per 1,000 FT ² or fraction thereof	246.49	2.72	23.7%	54.60
Mini-Warehouse per 1,000 FT ² or fraction thereof	2.50	5.49	75.0%	3.54
Hotel/Motel per Room	6.90	6.85	80.0%	12.94

TABLE 9
ROAD NEEDS BY LAND USE TYPE
GLADES COUNTY

LAND USE TYPE (UNIT)	No. of TRIPS	AVG. LENGT H (Miles)	% NEW TRIPS	NEW ROAD S (Lane Feet)
Movie Theatre per 1,000 FT ² or fraction thereof	78.06	3.10	60.0%	49.79
Religious Facilities per 1,000 FT ² or fraction thereof	9.11	5.48	85.0%	14.52
Day Care Center per 1,000 FT ² or fraction thereof	79.26	1.37	25.0%	9.29
Restaurant per 1,000 FT ² or fraction thereof	89.95	2.20	57.5%	38.91
Car Sales 1,000 FT ² or fraction thereof	33.34	5.49	75.0%	46.99
OFFICE PER 1,000 FT² or fraction thereof:				
Under 100,000 FT ²	22.60	4.09	60.0%	18.96
100,000 -199,999 FT ²	12.08	5.45	65.0%	14.68
200,000 FT ² & Over	9.72	6.81	70.0%	15.84
MEDICAL BUILDINGS:				
MEDICAL OFFICES PER 1,000 FT ² or fraction thereof	36.13	6.81	60.0%	50.58
HOSPITALS PER 1,000 FT ² or fraction thereof	17.57	5.49	60.0%	19.80
NURSING HOME PER 1,000 FT ² or fraction thereof	6.10	6.85	60.0%	8.61
INDUSTRIAL BUILDINGS:				
GEN. INDUSTRIAL PER 1,000 FT ² or fraction thereof	6.97	7.99	75.0%	14.31
WAREHOUSING PER 1,000 FT ² or fraction thereof	4.96	7.99	75.0%	10.19
GENERAL COMMERCIAL RETAIL PER 1,000 FT² or fraction thereof:				
Under 100,000 FT ²	71.49	2.20	55.1%	29.62
100,000 -199,999 FT ²	58.98	3.29	56.0%	37.28
200,000 – 399,999 FT ²	46.05	4.39	56.6%	39.18
400,000 FT ² & Over	38.37	5.49	57.1%	41.18
Pharmacy with Drive-Thru per 1,000 FT ² or fraction thereof	88.16	2.20	50.0%	33.16
Restaurant with Drive-Thru per 1,000 FT ² or fraction thereof	496.1 2	1.10	25.0%	46.62
Service Station per Fueling Station	168.5 6	1.10	15.0%	9.50
Convenience Retail per 1,000 FT ² or fraction thereof	737.9 9	1.10	20.0%	55.49

NOTES: (1) Mobile home rates are only for mobile homes located within mobile home parks.

(2) A fueling station is a position from which a motor vehicle can be fueled.

SOURCE: Institute of Transportation Engineers, Trip Generation, 7th Edition, 2004.

NOTES: (1) The office and commercial retail rates shown are only examples. The actual trip rates for these land uses should be determined by the following formulae:

A. Office;

$$\text{Total Daily Trips} = \text{Ln}(T) = 0.768\text{Ln}(X) + 3.654$$

T = Total Daily Trips

X = Area in 1,000 sq. ft.

Ln = Natural Logarithm

B. Commercial Retail;

$$\text{Total Daily Trips} = \text{Ln}(T) = 0.643 \text{Ln}(X) + 5.866$$

TABLE 9
ROAD NEEDS BY LAND USE TYPE
GLADES COUNTY

LAND USE TYPE (UNIT)	No. of TRIPS	AVG. LENGHT H (Miles)	% NEW TRIPS	NEW ROAD S (Lane Feet)
----------------------	--------------	-----------------------	-------------	------------------------

T = Total Daily Trips

X = Area in 1,000 sq. ft.

Ln = Natural Logarithm

(2) The mobile homes parameters utilized are for mobile homes located within mobile home parks. Any other mobile home would be treated as single family detached.

Table 10 estimates annual motor fuel tax payments available for road capacity expansions per year. The travel parameters in Table 9 can be used to calculate annual travel. Annual travel divided by Miles per Gallon will equal motor fuel consumption. Annual motor fuel consumption miles the motor fuel capital tax rate (¢19 per gallon) will equal annual payments toward road expansion costs. The present value of these payments over 25 years at 4.5% is the credit given for the payment of those motor fuel taxes. The construction and right of way costs are the per lane-mile costs shown in Table 4 times the lane-miles of roadway attributable to a unit of the specified type of development. The net cost is the sum of the construction and right of way costs less the credit.

Table 10
ROAD COST BY LAND USE TYPE
GLADES COUNTY

LAND USE TYPE (UNIT)	ANNUAL GAS TAXES	CREDIT FOR GAS TAXES	ROAD COSTS		NET COST
			CONST. COST	R.O.W.	
RESIDENTIAL:					
Single Family Detached Unit	\$154.66	\$2,416	\$4,817	\$864	\$3,265
Multi-Family Unit	\$108.60	\$1,697	\$3,389	\$608	\$2,300
Mobile Home in Mobile Home Park	\$80.64	\$1,260	\$2,516	\$451	\$1,708
Recreational Vehicle	\$59.80	\$934	\$1,859	\$334	\$1,258
NON-RESIDENTIAL:					
Walk-in Bank per 1,000 FT ² or fraction thereof	\$7,985	\$117	\$0	0	\$8,102
Drive-Thru Bank per 1,000 FT ² or fraction thereof	\$8,187	\$129	\$0	0	\$8,316
Mini-Warehouse per 1,000 FT ² or fraction thereof	\$24.28	\$379	\$759	\$136	\$517
Hotel/Motel per Room	\$89.21	\$1,394	\$2,777	\$498	\$1,881
Movie Theatre per 1,000 FT ² or fraction thereof	\$342.91	\$5,357	\$10,688	\$1,918	\$7,248
Religious Facilities per 1,000 FT ² or fraction thereof	\$100.11	\$1,564	\$3,117	\$559	\$2,112
Day Care Center per 1,000 FT ² or fraction thereof	\$64.05	\$1,001	\$1,995	\$358	\$1,352

**Table 10
ROAD COST BY LAND USE TYPE
GLADES COUNTY**

LAND USE TYPE (UNIT)	ANNUAL GAS TAXES	CREDIT FOR GAS TAXES	ROAD COSTS		NET COST
			CONST. COST	R.O.W.	
Restaurant per 1,000 FT ² or fraction thereof	\$267.94	\$4,186	\$8,353	\$1,499	\$5,666
Car Sales 1,000 FT ² or fraction thereof	\$323.85	\$5,059	\$10,087	\$1,810	\$6,838
Offices per 1,000 FT² or fraction thereof:					
Under 100,000 FT ²	\$130.76	\$2,043	\$4,069	\$730	\$2,756
100,000 -199,999 FT ²	\$100.96	\$1,577	\$3,151	\$565	\$2,139
200,000 FT ² & Over	\$109.30	\$1,707	\$3,400	\$610	\$2,303
Medical Buildings:					
Medical Offices per 1,000 FT ² or fraction thereof	\$348.42	\$5,443	\$10,858	\$1,948	\$7,363
Hospitals per 1,000 FT ² or fraction thereof	\$136.53	\$2,133	\$4,250	\$763	\$2,880
Nursing Homes per 1,000 FT ² or fraction thereof	\$59.15	\$924	\$1,847	\$331	\$1,255
Industrial Buildings:					
Gen. Industrial per 1,000 FT ² or fraction thereof	\$98.50	\$1,539	\$3,071	\$551	\$2,084
Warehouse/Storage per 1,000 FT ² or fraction thereof	\$70.09	\$1,095	\$2,187	\$392	\$1,485
Commercial/Retail per 1,000 FT² or fraction thereof:					
Under 100,000 FT ²	\$204.07	\$3,188	\$6,358	\$1,141	\$4,311
100,000 -199,999 FT ²	\$256.66	\$4,010	\$8,002	\$1,436	\$5,427
200,000 - 399,999 FT ²	\$270.05	\$4,219	\$8,410	\$1,509	\$5,700
400,000 FT ² & Over	\$283.75	\$4,433	\$8,840	\$1,586	\$5,993
Pharmacy with Drive-Thru per 1,000 FT ² or fraction thereof	\$228.36	\$3,567	\$7,118	\$1,277	\$4,828
Restaurant with Drive-Thru per 1,000 FT ² or fraction thereof	\$321.27	\$5,019	\$10,008	\$1,796	\$6,784
Service Station per Fueling Station per 1,000 FT ² or fraction thereof	\$65.49	\$1,023	\$2,040	\$366	\$1,383
Convenience Retail per 1,000 FT ² or fraction thereof	\$382.32	\$5,973	\$11,912	\$2,137	\$8,076

NOTE: For fees denominated in thousands of feet, the fees would be applied on a fractional for those portions of a building that are less than 1,000 feet.

The discussion herein largely focused on the single family home. The formulae used for the single family home apply equally to all other types of development shown.

Table 11 shows the existing road impact fees charged by Florida counties for a single family detached home. These data and the averages are presented simply to provide perspective. Road impact fees are enacted to recoup road improvements costs. Some jurisdictions, such as Hillsborough County, have not kept improvement costs current. Hillsborough County's fee was enacted in 1985

**Table 11
OTHER COUNTY ROAD FEES**

County	Roads
Broward (non-infill)	\$257.44
Wakulla	\$521.79
Monroe	\$633.00
Levy	\$1,046.00
Seminole	\$1,060.75
Gilchrist	\$1,071.43
Miami/Dade	\$1,275.00
Brevard	\$1,327.67
Nassau *	\$1,429.51
Flagler	\$1,438.10
Hillsborough *	\$1,548.00
Charlotte *	\$1,799.00
St Lucie	\$1,871.25
Volusia	\$1,920.00
Pinellas	\$1,923.00
Alachua	\$2,010.00
Lake	\$2,189.00
Marion	\$2,212.00
Santa Rosa **	\$2,237.00
Hendry	\$2,490.00
Sarasota	\$2,499.23
Sumter	\$2,582.00
Martin	\$2,793.00
Lee	\$2,971.00
Orange	\$3,398.00
Citrus	\$3,480.00
Hernando	\$3,627.00
St. Johns	\$3,708.00
Pasco	\$3,928.00
Manatee	\$3,986.00
Palm Beach **	\$4,073.98
Osceola	\$4,148.76
Indian River	\$5,202.00
Collier *	\$5,592.00
Polk **	\$5,884.00
Mean	\$2,518.08
Median	\$2,212.00
Count	35
* In revision	
** Not yet effective	

and has not been increased since. Monroe's and Broward's have gone many years without being updated. Others elect to charge less than the full cost. Alachua County, for example, charges 65% of road improvement costs as a road impact fee. This table shows what is being charged around the state.

Park & Recreation Impact Fees

Glades County's existing inventory of park and recreational areas and facilities is shown in Table 12. Existing investment in park and recreational areas and facilities amounts to \$133.01 per capita. This investment has accumulated an

**Table 12
PARK & RECREATION FACILITIES AND COSTS
GLADES COUNTY**

PARK TYPE	Acres	Value of	
		Facilities	Land
Boat Ramps			
Indian Prairie Boat Ramp	5.33	\$8,000	\$21,320
Twin Palms Boat Ramp	4.50	\$16,000	\$18,000
Fisheating Creek Boat Ramp	1.00	\$8,000	\$4,000
Alvin Ward Boat Ramp	10.00	\$116,000	\$40,000
Community Centers			
Buckhead Ridge Community Center	16.76	\$180,000	\$33,520
Lakeport Community Center	20.00	\$80,000	\$40,000
Palmdale Community Center	3.41	\$80,000	\$6,820
Muse Community Center	9.62	\$150,000	\$19,240
Ortona Community Center	1.00	\$50,000	\$2,000
Parks			
Margaret Van de Velde Park	22.00	\$107,000	\$44,000
Vance Whidden Park	446.00	\$0	\$892,000
Sportsman's Village area	9.89	\$28,000	\$19,780
Washington Park Play Area	13.16	\$15,000	\$26,320
Larry Luckey Park	30.00	\$80,000	\$60,000
Equipment		\$79,800	
Totals	592.67	\$997,800	\$1,227,000
			\$2,224,800
Outstanding Debt			\$0
Citizens' Equity			\$2,224,800
Population Served			16,727
Cost per Capita			\$133.01
SOURCE: Glades County, November 2005.			
NOTE: The general figure for land of \$2,000 per acre was doubled for water access land.			

inventory of 592.67 acres of land. This is equal to 35 acres per 1,000 population. Much of that provision is in one park, Vance Whidden Park. This is largely a passive recreation site. If that one park is not considered, the provision is 8.7 acres of parks per 1,000 population. Maintaining that provision, plus some increase in passive recreation, is the level of service incorporated into the park and recreational

impact fees.

Table 13 shows the \$133.01 per capita cost on a dwelling unit basis. Because

**Table 13
PARK & RECREATIONAL COSTS
GLADES COUNTY**

TYPE	OCCUPANCY	COST
Single Family Detached Unit	2.751	\$365.86
Multi-Family Unit	2.555	\$339.90
Mobile Home Unit	2.914	\$387.55
Recreational Vehicle	1.750	\$232.77
Hotel/Motel per Room	0.817	\$108.67

hotels and motels provide lodging for visitors that make use of park and recreation areas, especially boat ramps, it is recommended that hotels and motels be assessed park and recreational impact fees, but at a reduced rate.

Other county park and recreation impact fees are shown in Table 14.

**Table 14
OTHER COUNTY PARK & RECREATION FEES**

County	Parks Fee
Wakulla	\$53
Hernando	\$113
Lake	\$222
Alachua	\$252
Flagler	\$268
Monroe	\$340
Hillsborough	\$354
Broward (non-infill)	\$389
Charlotte	\$402
Citrus	\$435
St Lucie	\$447
Manatee	\$457
Sarasota	\$462
Nassau	\$520
Volusia	\$529
St. Johns	\$753
Pasco	\$892
Lee	\$1,116
Miami/Dade	\$1,173
Palm Beach	\$1,248
Indian River	\$1,507
Collier	\$1,603

Table 14
OTHER COUNTY PARK & RECREATION FEES

County	Parks Fee
Martin	\$2,345
Mean	\$690
Median	\$457
Count	23

Emergency Medical Impact Fees

Table 15 contains the inventory and cost of Glades County's existing inventory of emergency medical service equipment and facilities. This investment amounts to

**Table 15
EMERGENCY MEDICAL SERVICE PARAMETERS
GLADES COUNTY**

Station I		
Size in FT ²	2,400	
Value per	\$55.00	
Value		\$132,000
Acres	2.00	
Value per	\$7,500	
Value		\$15,000
Station II		
Size in FT ²	784	
Value per	\$55.00	
Value		\$43,120
Acres	1.00	
Value per	\$7,500	
Value		\$7,500
Medic I		\$125,000
Medic II		\$125,000
Medic III		\$125,000
Equipment		
Lifepack	3 at \$30,000	\$90,000
Stretchers	3 at \$3,000	\$9,000
Radios	8 at \$1,700	\$13,600
Airway Bags	6 at \$3,000	\$18,000
Auto-vents	3 at \$2,000	\$6,000
NTP Pumps	3 at \$2,000	\$6,000
Radios		\$35,000
TOTAL		\$750,220
Outstanding Debt		\$0
Citizen's Equity		\$750,220
Calls		1,599
Cost per Call		\$469.18
Population Served		11,128
Cost per Capita		\$67.42

SOURCE: Glades County Emergency Services, November 7, 2005.

\$67.42 per capita. Additionally, this investment is \$469.18 for each EMS call received. As population grows and calls increase, Glades County will need to increase its investment in EMS equipment and facilities in order to maintain the existing level of service.

Emergency medical service is delivered to people within Glades County whenever and wherever they need it. It is delivered to permanent or seasonal residents in their homes, to employees at their places of work, to shoppers at commercial establishments and to recreators at wherever they might be recreating. The convention is to distribute facility costs among the land uses that have people present based on the number of people present and their lengths of stay. A methodology has evolved for this distribution known as “functional population.” Functional population allocates the population to various land uses based on the amount of time people spend at those various land uses. A very recent study of functional population was undertaken for Charlotte County and the results of that study will be used here in Glades County. The function population data are shown as “occupants” in Table 16. Table 16 uses the \$67.42 per capita costs together with functional occupants to assess emergency medical costs by land use types.

**TABLE 16
EMS COSTS BY LAND USE TYPE**

LAND USE	UNIT	OCCUPANCY	COST
RESIDENTIAL			
Single Family Detached	Dwelling	1.338	\$90.20
Multi Family	Dwelling	0.918	\$61.89
Mobile Home in Mobile Home Park	Dwelling	0.968	\$65.29
Recreational Vehicle	Vehicle	0.726	\$48.97
NON-RESIDENTIAL:			
Walk-in Bank per 1,000 FT ² or fraction thereof	1,000 FT ²	1.688	\$113.83
Drive-Thru Bank per 1,000 FT ² or fraction thereof	1,000 FT ²	1.856	\$125.10
Mini-Warehouse per 1,000 FT ² or fraction thereof	1,000 FT ²	0.095	\$6.43
Hotel/Motel per Room	Room	1.047	\$70.61
Movie Theatre per 1,000 FT ² or fraction thereof	1,000 FT ²	8.034	\$541.66
Religious Facilities per 1,000 FT ² or fraction thereof	1,000 FT ²	0.514	\$34.64
Day Care Center per 1,000 FT ² or fraction thereof	1,000 FT ²	1.100	\$74.19
Restaurant per 1,000 FT ² or fraction thereof	1,000 FT ²	4.258	\$287.03
Car Sales 1,000 FT ² or fraction thereof	1,000 FT ²	2.234	\$150.59
Offices per 1,000 FT² or fraction thereof :			
Under 100,000 FT ²	1,000	0.854	\$57.59

**TABLE 16
EMS COSTS BY LAND USE TYPE**

LAND USE	UNIT	OCCUPANCY	COST
	FT ²		
100,000 -199,999 FT ²	1,000 FT ²	0.769	\$51.84
200,000 FT ² & Over	1,000 FT ²	0.729	\$49.17
Medical Buildings:			
Medical Offices per 1,000 FT ² or fraction thereof	1,000 FT ²	1.172	\$78.99
Hospitals per 1,000 FT ² or fraction thereof	1,000 FT ²	1.276	\$86.05
Nursing Homes per 1,000 FT ² or fraction thereof	1,000 FT ²	0.562	\$37.87
Industrial Buildings:			
Gen. Industrial per 1,000 FT ² or fraction thereof	1,000 FT ²	0.473	\$31.91
Warehouse/Storage per 1,000 FT ² or fraction thereof	1,000 FT ²	0.244	\$16.43
Commercial/Retail per 1,000 FT² or fraction thereof:			
Under 100,000 FT ²	1,000 FT ²	0.944	\$63.63
100,000 -199,999 FT ²	1,000 FT ²	1.314	\$88.61
200,000 - 399,999 FT ²	1,000 FT ²	1.778	\$119.85
400,000 FT ² & Over	1,000 FT ²	1.634	\$110.14
Pharmacy with Drive-Thru per 1,000 FT ² or fraction thereof	1,000 FT ²	0.858	\$57.83
Restaurant with Drive-Thru per 1,000 FT ² or fraction thereof	1,000 FT ²	5.308	\$357.82
Service Station per Fueling Station per 1,000 FT ² or fraction thereof	Per Stn	1.494	\$100.74
Convenience Retail per 1,000 FT ² or fraction thereof	1,000 FT ²	4.263	\$287.42
NOTE: For fees denominated in thousands of feet, the fees would be applied on a fractional for those portions of a building that are less than 1,000 feet.			
SOURCE: Charlotte County Functional Population Study, December 2005.			

Comparative ems impact fees are found in Table 17.

**Table 17
EMS IMPACT FEES IN OTHER COUNTIES**

County	EMS	Fire	Both
Hillsborough *		\$48.66	\$48.66
Brevard	\$38.65	\$54.08	\$92.73
Osceola		\$92.95	\$92.95

**Table 17
EMS IMPACT FEES IN OTHER COUNTIES**

County	EMS	Fire	Both
Hernando	\$16.00	\$80.00	\$96.00
Monroe	(see Fire)	\$105.00	\$105.00
Charlotte *	\$12.00	\$96.00	\$108.00
Nassau *	(see Fire)	\$121.01	\$121.01
Marion		\$137.00	\$137.00
Orange		\$148.69	\$148.69
Alachua		\$152.00	\$152.00
Citrus	\$15.00	\$156.00	\$171.00
Seminole		\$172.00	\$172.00
Miami/Dade *	(see Fire)	\$176.73	\$176.73
Polk	\$49.00	\$184.50	\$233.50
St Lucie	(see Fire)	\$258.00	\$258.00
Volusia		\$259.61	\$259.61
Lake		\$287.00	\$287.00
Manatee	\$27.74	\$287.50	\$315.24
Sarasota	\$48.00	\$280.50	\$328.50
Martin		\$346.00	\$346.00
Pasco	\$171.94	\$248.45	\$420.39
Palm Beach		\$483.51	\$483.51
St. Johns		\$501.00	\$501.00
Collier	\$104.00	\$397.20	\$501.20
Lee	\$30.00	\$501.60	\$531.60
Indian River	\$277.92	\$277.92	\$555.84
Mean	\$71.84	\$225.11	\$255.51
Median	\$38.65	\$180.62	\$205.12
Count	11	26	26

Public Educational Impact Fees

Educational or school impact fees have become a common component of growth management in Florida. Accommodating increased public school attendees has become increasingly a local responsibility. At present 24 counties (out of 67) require the payment of school impact fees. Collectively, these 24 counties have 72% of Florida's population and 79% of population growth. These fees are shown in Table 18.

**TABLE 18
OTHER SCHOOL IMPACT FEES**

County	School Fee
Hillsborough *	\$195.95
Seminole	\$1,384.00
Martin	\$1,466.59
Indian River	\$1,755.96
Citrus	\$1,861.00
Clay	\$2,000.00
Sarasota	\$2,032.00
Collier *	\$2,248.00
Miami/Dade *	\$2,305.71
Palm Beach **	\$2,894.00
Flagler	\$3,600.00
Nassau	\$3,726.00
St. Johns	\$3,771.00
Hernando	\$4,266.00
Lee	\$4,309.00
Pasco	\$4,313.00
Brevard	\$4,445.40
St Lucie	\$4,956.00
Hendry	\$5,100.63
Volusia	\$5,443.00
Manatee	\$5,886.00
Orange	\$7,000.00
Lake	\$7,055.00
Polk **	\$8,596.00
Osceola	\$9,708.30
Mean	\$4,012.74
Median	\$3,771.00
Count	25

* In revision

** Not yet effective

Educational impact fees have been experiencing rapid increases in Florida. The demise of the traditional state funding programs together with the limitations on taxable values imposed by the Save Our Homes constitutional amendment has

caused many jurisdictions to turn to alternate educational capital funding programs, including increased impact fees. The primary reasons for the increases in educational facilities impact fees are, first, reduced state funding for new school construction and, second, increased cost for new schools and especially for school sites. These conditions exist in Glades County.

Table 19 also sets out the historic, present and projected public school enrollment in Glades County.

**TABLE 19
HISTORIC AND PROJECTED PUBLIC SCHOOL ENROLLMENT
GLADES COUNTY**

Year	Total FTE	House Holds	Dwellings	FTE/HH
2000-01	1,068	3,849	5,810	0.184
2001-02	1,031	3,851	5,838	0.177
2002-03	977	3,858	5,874	0.166
2003-04	1,041	3,904	5,970	0.174
2004-05	1,280	3,968	6,092	0.210
2005-06	1,305	4,022	6,202	0.210
2006-07	1,370	4,067	6,299	0.218
2007-08	1,439	4,109	6,390	0.225
2008-09	1,582	4,144	6,472	0.244
2009-10	1,740	4,176	6,550	0.266

SOURCE: Glades County School District, August 2005.

Table 20 shows the public educational impact by dwelling unit based on the type of the dwelling. The student generation rates are derived from the 2000 Census, Public Use Micro-Sample. After 2000 available data suggest increasing rates of student generation per dwelling unit.

**Table 20
GLADES COUNTY
OCCUPANCIES**

	Dwelling Units	Population	Public School Attendees	Per Unit
Single Family Detached	2,048	3,748	683	0.334
Multi-Family	310	527	66	0.212
Mobile Home	3,180	6,164	694	0.218
Boat or Recreational Vehicle	252	137	0	0.000
	5,790	10,576	1,443	

SOURCE: Bureau of the Census, 2000 Census of the Population, Public Use Micro-Sample.

Increasing school enrollment has been a national trend and reported by the U.S. Bureau of the Census ["School Enrollment, Social and Economic Characteristics of

Students,” May 2005, <http://www.census.gov/prod/2005pubs/p20-554.pdf>] and this national trend is apparent in Glades County.

Table 21 presents an inventory of public school facilities in Glades County. There are a total of 1,736 existing student stations, all permanent. The anticipated increases in enrollment will consume all existing available stations and require further expansion.

**TABLE 21
EDUCATIONAL FACILITIES INVENTORY
GLADES COUNTY**

SCHOOL NAME/LEVEL	Student Stations			Enrollment	Bldg Gross SF	Acres
	Total	Perman-ent	Portable			
West Glades Elem School	378	378		339	65,433	12
Moore Haven Elem School	563	563		443	64,800	12
Moore Haven Jr/Sr High School	795	795		456	87,892	16
TOTALS	1,736	1,736	0	1,238	218,125	40
Per Station					125.65	0.023

Tables 22a and b set out the cost of accommodating an additional student in Glades County. Table 22a shows that the cost of providing the school facility itself, including land, amounts to \$20,794 per student. Table 22b shows that adding the cost of ancillary facilities, including buses, increases per student cost to \$22,363.

**TABLE 22a
STUDENT STATION COST
GLADES COUNTY**

SCHOOL PLANT COSTS:	
Square Feet per Station	125.65
Cost per Foot	\$165
Cost per Station	\$20,732
Land Area per Station (acres)	0.025
Cost per Acre	\$2,500
Land Cost per Station	\$62.50
Plant Cost per Station	\$20,794.43

**TABLE 22b
CENTRAL FACILITY COST
GLADES COUNTY**

CENTRAL FACILITIES:	
Administrative Bldg/Facilities	\$956,800
Nus/Maint. Facility	\$374,690
Vehicle Fleet;	
No of Buses 11	

Value per Bus \$65,000	\$715,000
Land	
Value of central, ancillary & transport facilities	\$2,046,490
Enrollment	1,305
Cost per Student	\$1,568
TOTAL COST PER STUDENT	\$22,363

SOURCE: Glades County School Board, September 2005.

The estimated value of all school facilities is \$29.2 million. There is existing outstanding debt of \$1.6 million resulting in Glades County Citizens' Equity of \$27.5 million. This is the estimated value of the school assets owned by the citizens of Glades County. Citizens' Equity is akin to stockholders equity, a concept commonly used in the private sector. This amounts to \$21,106 per student. This is the cost that will be used to calculate the school impact

**TABLE 23
CITIZENS EQUITY**

Replacement Value of School Plants	
Permanent Stations	\$27,136,727
Portables	
Replacement Value of Central Facilities	\$2,046,490
Total	\$29,183,217
Outstanding Debt	\$1,640,000
Citizen's Equity	\$27,543,217
Enrollment	1,305
Equity per Student	\$21,106

fee. Note can be taken of the fact that this cost is net of outstanding debt. The reason that debt is factored out is that new development will pay the cost of such debt along with existing developments.

Table 24 shows the sources of capital funding in the current capital improvement plan. These funds are divided between three major types of capital expense; maintenance, renovations or remodeling, and capacity expansion. Once a school has been built it must be maintained and, when needed, renovated or remodeled. A failure to keep current with these demands will result in a loss of those facilities. The category of interest is capacity expansion. This is the addition of new facilities that can accommodate new students. A total of \$5 million is expected to be available to fund capital projects. Construction revenues, either capacity expansion or capacity preservation, amount to \$4.6 million. Only \$3.0 million (64%) is budgeted for capacity expansion with the remainder allocated to major maintenance, renovations, replacements, and remodeling. A portion (\$859,251) of capital funding is provided by the State of Florida. Only \$486 thousand of this amount is available for capacity expansions. State funding of capacity funding will amount to 11% of capacity expansion cost, meaning that 89% of capacity expansion is a local cost. State capacity expansion funding amounts to \$65.30 per student per year.

During the next five years projected Capital Improvement Tax (CIT) receipts amount to \$4.1 million. The CIT will be combined with all other sources to finance capital projects. Because these monies are fungible, it will be concluded that all funds are equally allocated among the capital purposes and that 64% of the local CIT go toward funding capacity expansions.

**TABLE 24
SOURCES OF EDUCATIONAL CAPITAL FUNDS
GLADES COUNTY**

SOURCE	2004-05	2005-06	2006-07	2007-08	2008-09	5 YEARS
STATE OF FLORIDA:						
P E C O Maintenance	0	0	0	0	0	0
P E C O New Construction	38,125	357,452			0	395,577
C O & D S Bond Proceeds received on 20 March 1998	26,000	26,000	38,000	0	0	90,000
COBI BONDS	0	0	0	0	0	0
Classrooms Size Reduction/First	124,558	124,558	124,558	0	0	373,674
Other						0
Total State	188,683	508,010	162,558	0	0	859,251
Net State	64,125	383,452	38,000	0	0	485,577
Enrollment	1,305	1,370	1,439	1,582	1,740	
State Funds per student	\$49.14	\$279.89	\$26.41	\$0.00	\$0.00	\$65.30
LOCAL :						
Capital Improvement Tax	719,035	768,344	821,034	877,338	937,503	4,123,255
Sales Tax Revenues	0	0	0	0	0	0
COPS	0	0	0	0	0	0
Construction Funds	783,160	1,151,796	859,034	877,338	937,503	4,608,832
Capacity Expansions	421,740	410,344	538,034	769,338	829,503	2,968,960
Percent to Capacity	53.9%	35.6%	62.6%	87.7%	88.5%	64.4%
Impact Fees						0
Total Capital Funds	907,718	1,276,354	983,592	877,338	937,503	4,982,506

The local educational facility costs will be paid by a combination of appropriations from the State of Florida, the annual Capital Improvement Tax (CIT), and impact fees. The State funding shown in Table 8 is low. This reflects the anticipation of few state capacity expansion dollars for Glades County. Nevertheless, a credit for state funds is needed and the calculation of this credit is shown in Table 25.

**TABLE 25
STATE CREDIT CALCULATION**

State Capacity Funds per Student	\$65.30
Discount Rate	5%
Discount Period – Years	25
State Credit	\$968.29

New development will financially contribute to the costs of school capital improvements. Therefore it is appropriate to consider what portion of capital costs may be expected to be borne by the funding sources set out in Table 24. The percentage of available capital revenues devoted to school capacity expansion – 64% – is derived from data shown in Table 24 and is used in Table 10 to calculate credits for future payments of property taxes that can be expected to be devoted to school capacity expansion.

**TABLE 26
EDUCATIONAL CREDIT CALCULATIONS
GLADES COUNTY**

CAPITAL MILLAGE:	CIT MILLAGE	% CAPITAL	CAPITAL CIT RATE	GOB MILLAGE
2004-05	\$2.000	53.85%	\$1.077	\$0.000
2005-06	\$2.000	35.63%	\$0.713	\$0.000
2006-07	\$2.000	62.63%	\$1.253	\$0.000
2007-08	\$2.000	87.69%	\$1.754	\$0.000
2008-09	\$2.000	88.48%	\$1.770	\$0.000
AVERAGE '04-09			\$1.313	\$0.000
Residential Property Value (Millions)*				\$384.8
Enrollment				1,305
Residential Value per Student				\$294,844
Capital Millage Rate per \$1,000				\$1.313
Annual Capital Payment per Student				\$387.17
Discount Rate				5.00%
Tax Base Growth per Student				3.00%
Net Discount Rate				2.00%
Discount Period				25
Present Value of Capital Payments per Student				\$7,558.82

SOURCE: Glades County School District, October 2005.

Note: At 95%.

The discount rate shown in Table 26 has been increased by .5% because the future values being discounted back to present value are expected to fluctuate and thus are subject to a

higher degree of uncertainty than fixed amounts. The final significant component of Table 10 is the escalation of taxable value per student. The past indicates that taxable values will increase, even with the limitations imposed by the Save Our Homes constitutional amendment. In the recent past values have been growing at unprecedented rates. Table 10 assumes that taxable values per student will grow at 3% per year for the next 25 years. The future receipts of Capital Improvement Taxes are escalated at that rate and then discounted to present value at 5%, for a net discount rate of 2%.

The formula for the School Impact Fee is:

$$\text{CAPITAL COST PER STUDENT} = [(\text{COST OF NEW SCHOOL CAPITAL FACILITIES} + \text{LAND COST} + \text{ANCILLARY COST}) - \text{OUTSTANDING DEBT}] / \text{STUDENT CAPACITY} = \$21,105.91$$

$$\text{LOCAL COST} = \text{CAPITAL COST PER STUDENT} - \text{STATE PARTICIPATION} = \$20,137.62$$

$$\text{OFFSET FOR FUTURE TAXES} = \$7,558.82 \text{ PER STUDENT}$$

$$\text{NET LOCAL COST PER STUDENT} = \text{LOCAL COST} - \text{OFFSETS FOR FUTURE CAPITAL TAXES PER STUDENT} = \$12,578.80$$

$$\text{NET COST PER RESIDENCE} = \text{NET LOCAL COST PER STUDENT} * \text{STUDENT OCCUPANCY PER UNIT}$$

Table 27 contains the results of applying the parameters set out above to this formula.

**TABLE 27
EDUCATIONAL FISCAL IMPACTS
GLADES COUNTY**

UNIT SIZE	OCCUPANCY	TOTAL COST	STATE CREDIT	LOCAL COST	LOCAL CREDIT	NET COST
RESIDENTIAL:						
Single Family Detached	0.334	\$7,039.90	\$322.98	\$6,716.92	\$2,521.25	\$4,195.67
Multi-Family	0.212	\$4,483.26	\$205.68	\$4,277.58	\$1,605.62	\$2,671.96
Mobile Home in a Mobile Home Park	0.218	\$4,606.39	\$211.33	\$4,395.05	\$1,649.72	\$2,745.34
Recreational Vehicle	0.000					\$0.00
NON-RESIDENTIAL						No Fee

Summary and Recommendations

Table 28 summarizes the impact fees that Glades County can adopt. This schedule includes a 3% administrative charge. Glades County is free to adopt fees lower than those shown in Table 28 but may not charge anything higher.

**Table 28
TOTAL IMPACT COSTS BY LAND USE TYPE WITH 3% CHARGE
GLADES COUNTY**

LAND USE TYPE (UNIT)	Roads	EMS	Parks	School	Total
RESIDENTIAL:					
Single Family Detached Unit	\$3,363	\$93	\$365.00	\$4,322	\$8,143
Multi-Family Unit	\$2,369	\$64	\$339.00	\$2,752	\$5,525
Mobile Home Unit in a Mobile Home Park	\$1,759	\$67	\$387.00	\$2,828	\$5,042
Recreational Vehicle	\$1,296	\$50	\$233.00	\$0	\$1,579
NON-RESIDENTIAL:					
Walk-in Bank per 1,000 FT ² or fraction thereof	\$7,985	\$117	\$0	0	\$8,102
Drive-Thru Bank per 1,000 FT ² or fraction thereof	\$8,187	\$129	\$0	0	\$8,316
Mini-Warehouse per 1,000 FT ² or fraction thereof	\$533	\$7	\$0	0	\$539
Hotel/Motel per Room	\$1,937	\$73	\$109	0	\$2,119
Movie Theatre per 1,000 FT ² or fraction thereof	\$7,465	\$558	\$0	0	\$8,023
Religious Facilities per 1,000 FT ² or fraction thereof	\$2,175	\$36	\$0	0	\$2,211
Day Care Center per 1,000 FT ² or fraction thereof	\$1,393	\$76	0	0	\$1,469
Restaurant per 1,000 FT ² or fraction thereof	\$5,836	\$296	0	0	\$6,132
Car Sales per 1,000 FT ² or fraction thereof	\$7,043	\$155	0	0	\$7,198
Offices per 1,000 FT² or fraction thereof:					
Under 100,000 FT ²	\$2,839	\$59	0	0	\$2,898
100,000 -199,999 FT ²	\$2,203	\$53	0	0	\$2,257
200,000 FT ² & Over	\$2,372	\$51	0	0	\$2,423
Medical Buildings:					
Medical Offices per 1,000 FT ² or fraction thereof	\$7,584	\$81	0	0	\$7,665
Hospitals per 1,000 FT ² or fraction thereof	\$2,966	\$89	0	0	\$3,055
Nursing Homes per 1,000 FT ² or fraction thereof	\$1,293	\$39	0	0	\$1,332
Industrial Buildings:					
Gen. Industrial per 1,000 FT ² or fraction thereof	\$2,147	\$33	0	0	\$2,179
Warehouse/Storage per 1,000 FT ² or fraction thereof	\$1,530	\$17	0	0	\$1,546
Commercial/Retail per 1,000 FT² or fraction thereof:					
Under 100,000 FT ²	\$4,440	\$66	0	0	\$4,506
100,000 -199,999 FT ²	\$5,590	\$91	0	0	\$5,681
200,000 - 399,999 FT ²	\$5,871	\$123	0	0	\$5,994
400,000 FT ² & Over	\$6,173	\$113	0	0	\$6,286
Pharmacy with Drive-Thru per 1,000 FT ² or fraction thereof	\$4,973	\$60	0	0	\$5,032
Restaurant with Drive-Thru per 1,000 FT ² or fraction thereof	\$6,988	\$369	0	0	\$7,356

Table 28
TOTAL IMPACT COSTS BY LAND USE TYPE WITH 3% CHARGE
GLADES COUNTY

LAND USE TYPE (UNIT)	Roads	EMS	Parks	School	Total
Service Station per Fueling Station per 1,000 FT ² or fraction thereof	\$1,424	\$104	0	0	\$1,528
Convenience Retail per 1,000 FT ² or fraction thereof	\$8,318	\$296	0	0	\$8,614

NOTE: For fees denominated in thousands of feet, the fees would be applied on a fractional for those portions of a building that are less than 1,000 feet.