ROAD IMPACT FEE UPDATE

prepared for

LEE COUNTY, FLORIDA

prepared by

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with
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Introduction

Lee County is located along Florida's southwest coast and the Gulf of Mexico. The county covers just over 800 square miles, and contains four municipalities–Cape Coral, Fort Myers, Fort Myers Beach and Sanibel–that until recently accounted for 38 percent of its population. The percentage of the population residing in municipalities recently increased with the incorporation of Bonita Springs in January 2000.

From 1990-1998, the county's population, both total and in the unincorporated area, has increased by 21 percent, as shown in Table 1. This is considerably faster than the 15 percent rate at which the state population grew and the 8 percent rate at which the national population grew during the same period.[1]

Table 1
MUNICIPAL AND UNINCORPORATED POPULATION, 1990-1998

	Population		% of Pop.	% Increase
Jurisdiction	1990	1998	1998	1990-98
Cape Coral	74,991	93,786	23.1%	25.1%
Fort Myers	45,206	46,506	11.5%	2.9%
Fort Myers Beach*	NA	6,010	1.5%	NA
Sanibel	5,468	5,975	1.5%	9.3%
Unincorporated	209,448	253,360	62.5%	21.0%
Total County	335,113	405,637	100.0%	21.0%

* incorporated on January 1, 1996
Source: April 1, 1990 census count and April 1, 1998 estimate from University of Florida, Bureau of Economic and Business Research.

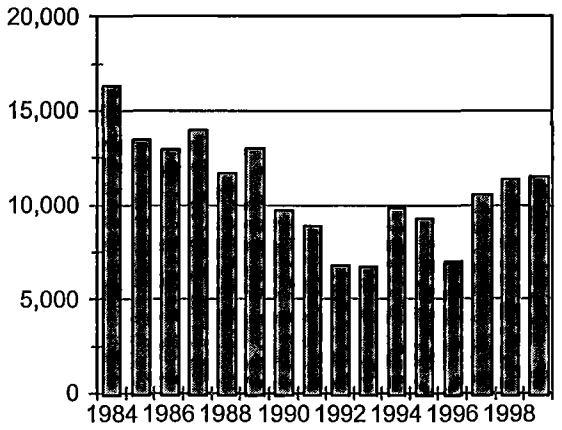
As shown in Table 2 and illustrated in Figure 1 below, the county's growth slowed in the early 1990s, but has since picked up steam again. The county added an average of about 13,300 new residents annually during the 1980s, about 9,200 annually during the early 1990s and about 9,900 annually since 1993.

Table 2
COUNTY POPULATION, 1983-1999

Year	Population	Increase	Percent
1983	243,885	NA	NA
1984	260,246	16,361	6.7%
1985	273,700	13,454	5.2%
1986	286,680	12,980	4.7%
1987	300,636	13,956	4.9%
1988	312,323	11,687	3.9%
1989	325,374	13,051	4.2%
1990	335,113	9,739	3.0%
1991	344,032	8,919	2.7%
1992	350,809	6,777	2.0%
1993	357,550	6,741	1.9%
1994	367,410	9,860	2.8%
1995	376,702	9,292	2.5%
1996	383,706	7,004	1.9%
1997	394244	10,538	2.7%
1998	405,637	11,393	2.9%
1999	417,114	11,477	2.8%

Source: Lee County Planning Division.

Figure 1
ANNUAL POPULATION GROWTH, 1983-1999



[1]U.S. Census Bureau, *Statistical Abstract of the United States*, 1999, Table 26 (online at (http://www.census.gov/prod/99pubs/99statab/sec01.pdf)

Legal Framework

Since impact fees were pioneered in states like Florida that lacked specific enabling legislation, such fees have generally been legally defended as an exercise of local government's broad "police power" to protect the health, safety and welfare of the community. For this reason, the legal framework for impact fees in Florida is found in case law rather than in statute.[2]

The courts have gradually developed guidelines for constitutionally valid impact fees, based on a "rational nexus" that must exist between the regulatory fee or exaction and the development activity that is being regulated. The standards set by court cases generally require that an impact fee meet a three-part test:

1) The need for new facilities must be created by new development;

2) The amount of fee charged must not exceed a proportional fair share of the cost to serve new development; and

3) All fee revenues must be spent within a reasonable period of time and benefit the fee-paying development.

These principles have some important corollaries, which may be broadly categorized under the headings of "proportionality," "credits" and "benefit." The proportionality rules require that the fees cover only those costs that can be attributed to new development. In addition, applicants must have the option of attempting to demonstrate that their development will have less impact on the need for public facilities than is indicated by the fee schedule.

The credit rules are designed to ensure that new development is not overcharged. These rules address both revenue credits, which are calculated up-front in the preparation of the fee schedule, and construction credits, which are determined on a case-by-case basis prior to fee payment. Revenue credits reduce the impact fee schedules to account for any other revenues that will be generated by new development and used to retire debt for existing facilities or to construct new facilities. Construction credits are used to offset an individual development's impact fees by the value of required land dedications or other developer improvements or contributions for the same types of facilities.

Finally, the benefit rules require that the fee revenues be spent within a reasonable period of time and within a reasonable proximity to the fee-paying development. The Florida courts have ruled that earmarking of funds for expenditure in the area in which they were collected is generally sufficient to establish reasonable benefit.

History

The purpose of this study is to update Lee County's road impact fees. The road impact fees were originally adopted in 1985. The fee schedules were updated in 1989 and again in 1990. The current road impact fee schedule is based on consultant studies prepared in 1990.[3]

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[2]There are six Florida cases that have guided the development of impact fees in the state: Contractors and Builders Association of Pinellas County v. City of Dunedin, 329 So.2d 314 (Fla. 1976); Hollywood, Inc. v. Broward County, 431 So.2d 606 (Fla. 4th DCA 1976); Home Builders and Contractors Association of Palm Beach County, Inc. v. Board of County Commissioners of Palm Beach County, 446 So.2d 140 (Fla. 4th DCA 1983); Seminole County v. City of Casselberry, 541 So.2d 666 (Fla. 5th DCA 1989); City of Ormond Beach v. County of Volusia, 535 So.2d 302 (Fla. 5th DCA 1988); and St. Johns County v. Northeast Florida Builders Association, 583 So.2d 635 (Fla. 1991).

[3]James C. Nicholas, *Technical Memorandum on the Methods Used to Recalculate Road Impact Fees, Lee County, Florida*, July 1990; Kimley-Horn and Associates, Inc., *Lee County Impact Fee Transportation Data*, 1990.

The County's road impact fee system applies more or less throughout the county, except within the City of Cape Coral. Cape Coral has adopted a completely independent road impact fee system. The other municipalities currently participate in the County road impact fee system to some extent. The City of Sanibel and the City of Fort Myers have not adopted their own road impact fee ordinances, but instead have entered into interlocal agreements with the County to collect the County's road impact fees within their respective jurisdictions. These agreements provide that the County will pay for legal defense against any lawsuits arising out of the cities' collection of the County's impact fees.

In contrast, the Town of Fort Myers Beach adopted the County's road impact fee ordinance into its own Land Development Code when it incorporated in 1996. In the County's interlocal agreement with Fort Myers Beach, the County agrees to collect the Town's fees as part of its permitting activities on the Town's behalf, but assumes no responsibility for defending the Town's road impact fee system from legal challenge.

At this time, the road impact fee schedules and ordinance procedures that apply within the unincorporated parts of the county and within the municipalities of Fort Myers, Sanibel and Fort Myers Beach are essentially identical (minor amendments to the County ordinance in September and December of 1996 and June of 1998 may not have been incorporated into the Town of Fort Myers Beach's ordinance). It is not yet known whether the new municipality of Bonita Springs, which came into existence on January 1, 2000, will participate in the County road impact fee system.

Benefit Districts

Impact fee case law states that impact fees must be spent so as to provide a reasonable benefit to the fee-paying development. One way of ensuring reasonable benefit is to create multiple benefit districts within which the fees collected must be spent. Multiple benefit districts ensure that the impact fees paid by a development are spent closer to the development than would be the case under a jurisdiction-wide benefit district. On the other hand, the larger the number of benefit districts, the more difficult it is to accumulate sufficient funds in any one district to make any significant improvements. Deciding on the appropriate number and location of benefit districts requires balancing the need to show reasonable benefit to fee payers with the need to maintain sufficient flexibility in impact fee expenditures to address priority improvement needs.

Currently, the county is divided into eight benefit districts for the road impact fees. In addition, the County has been collecting the fees for Fort Myers Beach since its incorporation and tracking those fees separately. The current benefit districts are shown in Figure 2.

The County has been collecting about $7 million annually in road impact fees, while developers applied almost $6 million annually in credits against the road impact fees, for a total of about $13 million annually. Currently, there is a little over $11 million in outstanding road impact fee credits.[4] While the municipalities are included in the benefit districts, Cape Coral does not participate in the County's road impact fees, and Fort Myers and Sanibel collect and keep the road impact fees paid by developments within their jurisdictions. The revenue breakdown by benefit district is shown in Table 3. The three benefit districts to the south and east of Fort Myers (districts 3, 4 and 8) have accounted for the majority of the fees collected and the credits granted.

[4]Outstanding road credits totaled $11,377,047 as of December 3, 1999 according to Lee County Impact Fee Coordinator.

Figure 2
ROAD IMPACT FEE BENEFIT DISTRICTS

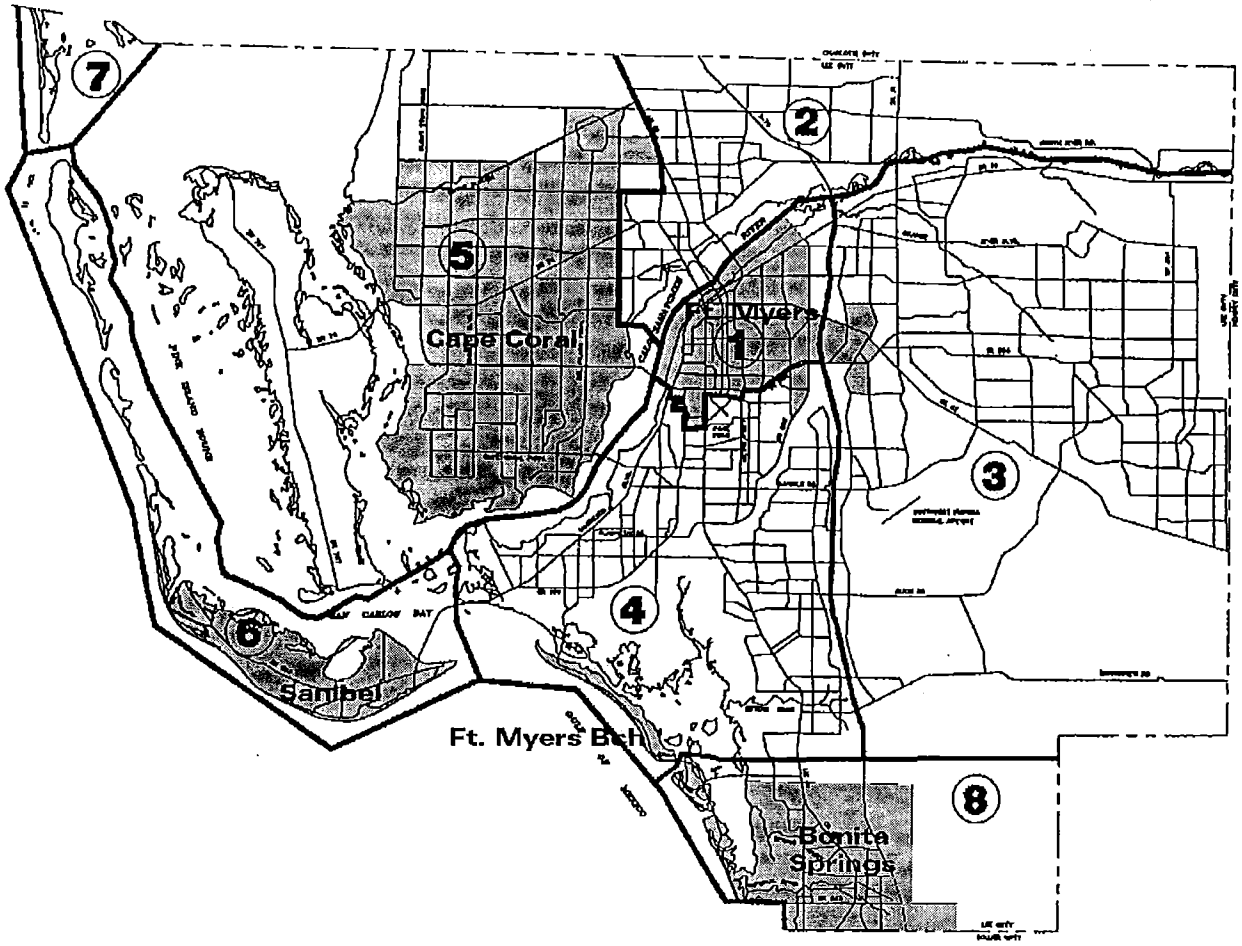

Table 3
ANNUAL ROAD IMPACT FEE REVENUES

District	Area Description	Fees	Credits	Total
1	Ft. Myers Unincorporated	$53,660	$71,137	$124,797
2	North	$198,474	$510,060	$708,534
3	East	$785,839	$1,856,517	$2,642,356
4a	South, except Ft. Myers Beach	$2,500,061	$3,319,952	$5,820,013
4b	Fort Myers Beach	$111,465	$51,286	$162,751
5	West	$316,600	$0	$316,600
6	Captiva	$32,429	$0	$32,429
7	Boca Grande	$90,445	$0	$90,445
8	Bonita Springs	$2,983,537	$136,776	$3,120,313
Total		$7,072,510	$5,945,728	$13,018,238

Source: Lee County Impact Fee Coordinator, average for fiscal years 1997/98 and 1998/99; "fees" represent fees actually paid to Lee County; "credits" represent credits actually used to offset fees.

Service Unit

A service unit creates the link between supply (roadway capacity) and demand (traffic generated by new development). An appropriate service unit basis for road impact fees is vehicle-miles of travel (VMT). Vehicle-miles is a combination of the number of vehicles traveling during a given time period and the distance (in miles) that these vehicles travel.

The two time periods most often used in traffic analysis are the 24-hour day (average daily trips or ADT) and the single hour of the day with the highest traffic volume (peak hour trips or PHT). Lee County's current road impact fee system is based on ADT. The regional transportation model is also based on ADT. However, the County's comprehensive plan sets forth desired level of service standards that are based on PHT.

The County's peak hour traffic characteristics reflect the area's retirement and tourist orientation and are significantly different from national averages. For example, approximately 8 percent of average daily traffic on the County's major roadways occurs during the afternoon peak hour, compared to a national average of about 10 percent.[5] Peak hour trip generation rates based on national data may not be representative of all land uses in Lee County. On the other hand, studies in Lee County have shown that average daily trip generation rates are reasonably representative of Lee County. For this reason, we recommend continuing to base the County's road impact fees on average daily trip generation. Consequently, average daily VMT will be used as the service unit for the road impact fee update.

Methodology

The methodology used in Lee County's current road impact fee system is a "demand-driven" approach. The demand-driven model simply charges a new development the cost of replacing the capacity that it consumes on the major road system. That is, for every vehicle-mile of travel (VMT) generated by the development, the road impact fee charges the net cost to construct an additional vehicle-mile of capacity (VMC).

Since travel is never evenly distributed throughout a roadway system, actual roadway systems require more than one unit of capacity for every unit of demand in order for the system to function at an acceptable level of service. Suppose for example, that the County completes a major arterial widening project. The completed arterial is likely to have a significant amount of excess capacity for some period of time. If the entire system has just enough capacity to accommodate all of the vehicle-miles of travel, then the excess capacity on this segment must be balanced by another segment being over-capacity. Clearly, roadway systems in the real world need more total aggregate capacity than the total aggregate demand, because the traffic does not always precisely match the available capacity. Consequently, the standard demand-driven model generally underestimates the full cost of accommodating new development at the existing level of service. Nevertheless, it is a conservative, legally-defensible approach that has been litigated in Florida, and this update assumes that the basic formula will be retained.

The current impact fee system does not address the issue of existing deficiencies. In most rapidly growing communities, some roadways will be experiencing an unacceptable level of congestion at any given point in time. One of the principles of impact fees is that new development should not be charged, through impact fees, for a higher level of service than is provided to existing development. In the context of road impact fees, this has sometimes been interpreted to mean that impact fees should not be spent on roadways that

[5]"Approximately 10% of all person travel takes place in the morning peak period, and again in the evening peak period" according to the Institute of Transportation Engineers (ITE), *Transportation and Traffic Engineering Handbook*, 1982, p. 283, The ratio of PM peak hour trip rates to average daily trip rates for 115 land use categories from the 1997 sixth edition of the ITE *Trip Generation* manual averages 9.82%.

are already over-capacity. A variant of this approach is that impact fees should only be used to fund a percentage of the project that can be attributed to providing additional capacity beyond what is needed to remedy any existing deficiency.

These approaches for dealing with existing deficiencies create several types of problems. A major one is that impact fees are restricted from being spent on roadways that are most in need of improvement. The approach that allows a percent of the cost to be funded complicates impact fee administration by requiring that the portion of the cost of each improvement that is attributable to remedying deficiencies be funded from a different revenue source. Finally, these approaches ignore the interconnectedness of the major roadway system. For example, road impact fees could not be spent directly to improve a deficient segment, but could be spent to improve or construct a parallel roadway that would also relieve the congestion.

Actually, it is not necessary to address existing deficiencies in a demand-driven system, which, unlike an improvements-driven system, is not really designed to recover the full costs to maintain the desired LOS on all roadway segments. Instead, it is only designed to maintain a minimum one-to-one overall ratio between system demand and system capacity. Virtually all major roadway systems have more capacity (VMC) than demand (VMT) on a system-wide basis. Consequently, under a demand-driven system, the level of service standard is really a systemwide VMC/VMT ratio of one. Since the County's major road system currently operates at better than this LOS, there are no existing deficiencies on a system-wide basis.

The recommended impact fee formula is presented in Figure 3.

Figure 3
ROAD IMPACT FEE FORMULA

IMPACT FEE	=	**PERCENT x VMT x NET COST/VMT**
Where:		
PERCENT	=	Uniform percentage at which fees for all land use categories are assessed
VMT	=	ADT x % NEW x LENGTH ÷ 2
ADT	=	Trip ends during average weekday
%NEW	=	Percent of trips that are primary, as opposed to passby or diverted-link trips
LENGTH	=	Average length of a trip on the major road system
÷ 2	=	Avoids double-counting trips for origin and destination
NET COST/VMT	=	COST/VMT - CREDIT/VMT
COST/VMT	=	COST/LANE-MILE ÷ AVG LANE CAPACITY
COST/LANE-MILE	=	Average cost to add a new lane to the major roadway system
AVG LANE CAPACITY	=	Average daily capacity of a lane at desired LOS
CREDIT/VMT	=	$/GAL ÷ MPG x 365 x NPV
$/GAL	=	Capacity-expanding funding for roads per gallon of gasoline consumed
MPG	=	Miles per gallon, average for U.S. motor vehicle fleet
365	=	Days per year (used to convert daily VMT to annual VMT)
NPV	=	Net present value factor (i.e., 12.46 for 20 years at 5% discount)

Major Roadway System

A road impact fee system should include a clear definition of the major roadway system that is to be funded with the impact fees. This definition clarifies the roads that may be improved with impact fee funds, as well as the roads that can be improved by developers in return for credit against the road impact fees.

The current road impact fee ordinance defines the major roadway system implicitly in its definition of "approved roads" for which credit against the road impact fees is authorized. Approved roads consist of all arterials, collectors, freeways and expressways, as well as designated access roads. Approved roads are divided into three classes, which determine the extent to which developers who improve them are eligible for credit. Class 1 roads are those included for improvement in the County five-year capital improvements program (CIP), Class 2 roads are those scheduled for improvement within the next ten years, and Class 3 roads are those shown on the traffic circulation plan map, but which are not programmed for improvement within the next ten years. The division of the major roadway system into three classes is reasonable, because the intent is to prevent premature development in areas not a priority for major road improvements from essentially monopolizing the expenditure of impact fee funds through the credit mechanism. The County's major roadway system is illustrated in Figure 4.

The current road impact fee system is missing a critical link between the definition of the major roadway system and the calculation of the impact fees. The missing link is that the average trip length is based on non-local data. In this update, we propose to derive the average trip length from local data about travel on the major roadway system. Under this approach, including or excluding a class of roadway, such as minor collectors, from the definition of the major roadway system would affect the average trip length and thus the amount of the impact fee.

An inventory of the existing major roadway system was prepared as part of this update. The major purpose of the inventory is to determine the total amount of travel on the major roadway system, expressed in vehicle-miles of travel (VMT). This figure is used to calculate an average trip length, and is also used as an input into some of the credit calculations. A summary of the major road system is presented in Table 4 below. A detailed inventory in tabular form is presented in Table 18 at the end of this report.

Figure 4
MAJOR ROADWAY SYSTEM

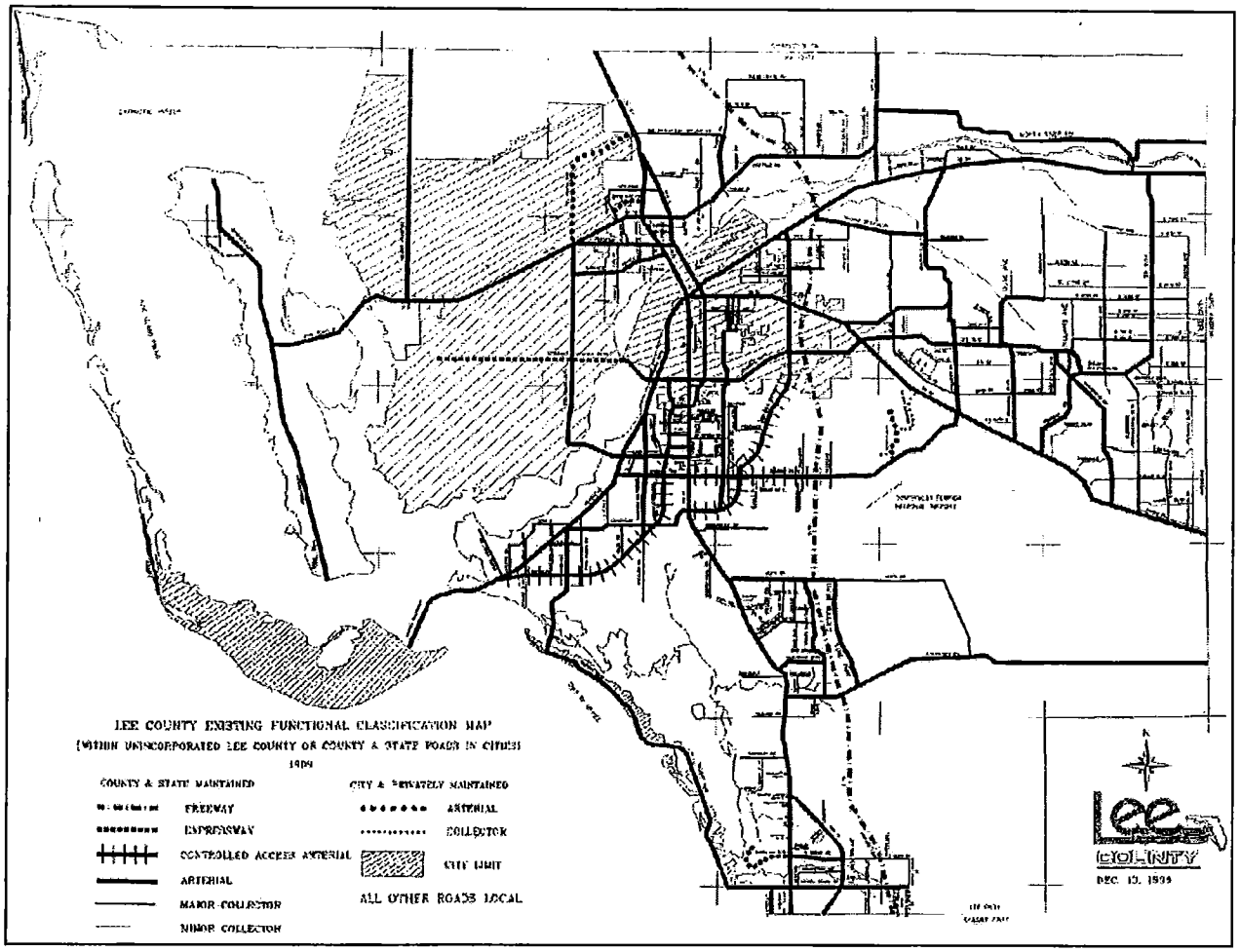

Table 4
EXISTING TRAVEL ON MAJOR ROAD SYSTEM

Part of System	Miles	Daily VMT
I-75	34.1	1,924,050
State Roads	121.0	2,682,144
County Arterials	255.1	3,422,955
County Collectors	69.4	320,634
City of Fort Myers	19.2	263,961
City of Cape Coral	64.8	683,704
Total	563.6	9,297,448

Source: Table 18; daily VMT is annual average daily trips (AADT) adjusted to represent peak season volumes times segment length.

Roadway Capacity

Nationally-accepted transportation level of service (LOS) categories have been developed by the transportation engineering profession. Six categories, ranging from LOS A to LOS F, generally describe driving conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS A represents free flow, while LOS F represents the breakdown of traffic flow, characterized by stop-and-go conditions.

In contrast to LOS, service volume capacity is a quantitative measure, expressed in terms of the rate of flow (vehicles passing a point during a period of time). Service volume capacity represents the maximum rate of flow that can be accommodated by a particular type of roadway while still maintaining a specified LOS. The service volume capacity at LOS E represents that maximum volume that can be accommodated before the flow breaks down into stop-and-go conditions that characterize LOS F, and thus represents the ultimate capacity of the roadway.

The analysis of the capacity of Lee County's major roadway system has been based on the generalized planning capacity estimates promulgated by the Florida Department of Transportation (FDOT), as modified by Lee County based on local data. These capacity estimates are based on *Highway Capacity Manual* procedures and take into consideration roadway cross-sections, left turn bays at intersections, posted speed limits, the spacing of signalized intersections and the characteristics of the area (i.e., rural, rural developed, transitioning to urban and urbanized).

The generalized capacity estimates developed for planning purposes by Lee County are hourly, rather than average daily, capacities. These capacities are essentially the same for LOS D and LOS E, since the capacities of the intersections have already been reached by the time the segment volumes reach LOS D.[6] The hourly capacity numbers also contain an directional split (D) factor. The D factor used in the general Lee County calculations is 0.58 (giving a peak hour directional split of 58% - 42%).

Average daily capacities are calculated by applying a specific peak hour factor to the peak hour capacity. Technically the roadway has the "capacity" to handle 24 times the peak hour capacity. This would result in a 6-lane arterial having a daily capacity of over 125,000, obviously not realistic. To convert from peak hour to daily capacity, the hourly capacity is divided by the percentage of daily travel occurring in the peak hour. In the case where AM and PM peaks differ, the higher peak is used.

For area wide planning numbers, such as are used in impact fees, a generalized peak factor, usually borrowed from another community, is often used. However, the *Lee County Count Report* contains the peaking characteristics for multiple permanent count stations in the County. This allows application of appropriate peaking characteristics to each project used in the cost calculations, and also defends against any charges that Lee County's peaking characteristics are unique due to the retiree population. Where the capacity improvement is planned on an existing transportation facility, the count station assigned to the facility in the *Lee County Annual Traffic Count Report* was used. For new facilities, the count station judged to be the most likely to reflect traffic peaking characteristics on the new facility was used.

As noted above, the average capacity per lane will be determined from the same set of improvements used to determine the average cost per lane-mile. This is the set of capacity-expanding improvements included in the County's current five-year CIP. As shown in Table 5, the average daily capacity per lane, for both LOS D and LOS E, is about 10,600 vehicles per day for this representative set of improvements.

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[6]On a signalized urban street, LOS is measured based on average travel speed. Per the *Highway Capacity Manual*, Chapter 11, the service volume at LOS "D" borders on a range in which small increases in volume may cause substantial increases in delay and hence decreases in arterial speed to LOS "E" and below.

This is somewhat higher than the 9,534 average capacity estimate on which the current impact fees are based. The difference is attributable to the County's more sophisticated analysis of capacity and more extensive count station data.

Table 5
AVERAGE CAPACITY PER LANE

Road	Segment	Miles	New Lanes	Lane-Miles	Pk Hr Capacity/Lane LOS D	Pk Hr Capacity/Lane LOS E	Pk Hr Factor	Daily Capacity/Lane LOS D	Daily Capacity/Lane LOS E
US 41 Bus	SR 78 to Littleton	1.10	2	2.20	853	855	9%	9,478	9,500
Colonial	I-75 to SR 82	2.48	2	4.96	855	855	8%	10,688	10,688
Cypress Lake	Summerlin to US 41	0.74	2	1.48	855	855	8%	10,688	10,688
Gladiolis	Pine Ridge to Winkler	2.33	2	4.66	853	855	8%	10,663	10,688
Gunnery Rd	SR 82 to Lee	2.22	2	4.44	853	855	9%	9,478	9,500
Imperial St	BB Rd to E Terry	1.00	2	2.00	853	855	8%	10,663	10,688
Lee Blvd	800' E of Homestead to Wms	0.32	2	0.64	853	855	8%	10,663	10,688
Lee Blvd	Williams to Leeland Hts	1.02	1	1.02	680	745	8%	8,500	9,313
Livingston	Collier Co to Imperial	1.00	2	2.00	680	745	8%	8,500	9,313
Palmetto	Six Mi Cypress to Ford term.	4.23	2	8.46	853	855	8%	10,663	10,688
Palmetto	Ford to Plantation	0.46	4	1.84	853	855	8%	10,663	10,688
Pondella Rd	Orange to SR 78	0.86	2	1.72	853	855	9%	9,478	9,500
Summerlin	Boyscout to Univ	2.39	2	4.78	855	855	8%	10,688	10,688
Summerlin	Bass to Gladiolus	1.74	2	3.48	855	855	8%	10,688	10,688
Summerlin	San Carlos to Bass	2.16	2	4.32	855	855	8%	10,688	10,688
Three Oaks	Williams to Corkscrew	0.75	4	3.00	853	855	9%	9,478	9,500
Three Oaks	Alico to Fiddlesticks	1.21	4	4.84	853	855	9%	9,478	9,500
Three Oaks	Fiddlesticks to Daniels	2.49	2	4.98	853	855	9%	9,478	9,500
Three Oaks	Terry to Cockleshell	1.32	2	2.64	853	855	8%	10,663	10,688
Three Oaks	S of Cordkscrew to Cockleshell	2.75	4	11.00	853	855	8%	10,663	10,688
Three Oaks	Corkscrew to Alico	4.62	2	9.24	853	855	8%	10,663	10,688
Treeline	Daniels to termination	1.26	2	2.52	853	855	7%	12,186	12,214
Treeline	Termination to Colonial	3.17	4	12.68	853	855	7%	12,186	12,214
Burnt Store	Extension	3.00	4	12.00	853	855	8%	10,663	10,688
Veteran's	Santa Barbara to Skyline	1.03	6	6.18	853	855	8%	10,663	10,688
W Terry St	BB Plaza to Old 41	1.57	2	3.14	853	855	8%	10,663	10,688
Total/Weighted Average				120.22				10,600	10,600

Source: Lee County Department of Transportation, *Lee County FY 99/00-03/04 Transportation Capital Improvement Program*, October 1999; peak hour capacity per lane from *The Lee Plan*, Transportation Element, Volume II, June 3, 1998, page 52, Table T-4: Lee County Generalized Two-Way Peak Hour Service Volumes, Urbanized Areas; peak hour factor from *1998 Lee County Annual Traffic Count Report*; daily capacity per lane is peak hour capacity divided by peak hour factor; weighted averages are weighted by number of lane-miles and rounded to nearest one hundred.

Cost per Service Unit

One of the key inputs into the road impact fee formula is the cost per lane-mile to construct new roadway capacity. In the 1990 update study, the average cost per new lane-mile, including right-of-way and construction costs (including costs of bridges and interchanges), was determined to be $798,565.

While the most obvious component of roadway construction is the physical roadway itself, other elements are involved in the construction almost all of which add to the cost to the project. Included in the consideration of new roadway costs for Lee County are professional services (such as planning, and design), actual construction costs, right-of-way (land) costs, and other costs, which, in Lee County, primarily consist of costs for environmental mitigation, but may also include elements such as utility relocation.

Roadway construction costs developed for inclusion in the Lee County Impact Fee Update are based on the *Lee County FY 99/00-03/04 Transportation Capital Improvement Program* (CIP), which was produced by the Lee County Department of Transportation in October 1999. The CIP contains the listing of roadway projects that are under construction or are likely to be constructed in the future in Lee County. Projected costs developed by the county for each project are included in the CIP.

In addition to the Lee County CIP, two additional sources of roadway costs were examined during the study. These were historic cost information gathered by Lee County DOT for past county projects, and costs for projects contained in the Florida Department of Transportation (FDOT) five year work plan.

After review of these three potential sources for cost information, the Lee County CIP was chosen as the basis for establishment of roadway costs. The basis for this decision was the fact that the CIP most closely represented the types of projects likely to be funded partially or totally by impact fee revenues. Further, only projects with new funding projected in the 1999/00 through 2003/04 budget years were included. This allowed the study to include a substantial number of potential projects while confining construction cost projections to projects that are most typical of those likely to be encountered in the future. It should be noted that in some cases the total project cost is not budgeted in the five-year CIP time frame. In those cases funds previously budgeted or expended or projected to be budgeted in the future were included to establish the total project cost.

In a demand-driven impact fee system such as Lee County has, roadway construction costs are input into the fee structure as an average cost for providing new roadway capacity. The average is based on a selection of representative projects, which were selected as described above. Using this method, assuming there are no dramatic changes to the type of construction contemplated in the county, it is not necessary to revisit impact fees each time that the CIP changes. Updates at reasonable periodic intervals are sufficient in analyzing potential changes to average costs.

Once project selection criteria have been established, exceptions to those criteria and the reason behind those exceptions should be noted. In the Lee County study, only two exceptions to the selection criteria were made. Project number 204044, Bonita Beach Road Resurfacing was excluded. This is primarily a resurfacing project with capacity enhancements over a relatively short section of the entire project. This was not felt to be representative of a capacity enhancement project in Lee County. Project number 204062, Treeline Avenue, airport entrance to Daniels Road was also excluded. This roadway is associated with the new Midfield Terminal at Southwest Florida International Airport. Because of federal involvement in the project, it could be argued that this project would not be typical of Lee County roadways likely to be constructed with impact fee revenues.

In all, twenty-one projects, adding just over 120 new lane-miles, were included in computing an average cost per lane-mile. Costs for these projects total $162.5 million, resulting in an average cost for a new lane-mile of $1,352,000 as shown in Table 6.

Table 6
AVERAGE COST PER NEW LANE-MILE

Road	Segment	Miles	Lanes Exist	Lanes Future	New Lane-Miles	Cost	Cost/ Lane-Mile
US 41 Bus	SR 78 to Littleton	1.10	2	4	2.20	$6,262,000	$2,846,000
Colonial	I-75 to SR 82	2.48	4	6	4.96	$3,207,000	$647,000
Cypress Lake	Summerlin to US 41	0.74	4	6	1.48	$2,285,000	$1,544,000
Gladiolis	Pine Ridge to Winkler	2.33	2	4	4.66	$7,989,000	$1,714,000
Gunnery Rd	SR 82 to Lee	2.22	2	4	4.44	$3,985,000	$898,000
Imperial St	BB Rd to E Terry	1.00	2	4	2.00	$7,741,000	$3,871,000
Lee Blvd	Homestead-Leeland Hts	1.34	2	3 to 4	1.66	$1,703,000	$1,026,000
Livingston	Collier Co to Imperial	1.00	0	2	2.00	$5,290,000	$2,645,000
Palmetto	Widening/Ext to Plantation	4.75	Varies	4	10.30	$18,670,000	$1,813,000
Pondella Rd	Orange to SR 78	0.86	2	4	1.72	$2,820,000	$1,640,000
Summerlin Rd	Boyscout to Univ	2.39	4	6	4.78	$14,833,000	$3,103,000
Summerlin	Bass to Gladiolus	1.74	4	6	3.48	$1,707,000	$491,000
Summerlin	San Carlos to Bass	2.16	4	6	4.32	$2,575,000	$596,000
Three Oaks	Williams to Corkscrew	0.75	0	4	3.00	$3,738,000	$1,246,000
Three Oaks	Alico to Daniels	3.70	0 to 4	4	9.82	$9,937,000	$1,012,000
Three Oaks	Terry to Corkscrew	4.07	0 to 2	2	13.64	$16,386,000	$1,201,000
Three Oaks	Corkscrew to Alico	4.62	2	4	9.24	$9,079,000	$983,000
Treeline	Daniels to Colonial	4.43	Varies	4	15.20	$10,659,000	$701,000
Burnt Store	Extension	3.00	0	4	12.00	$10,290,000	$858,000
Veteran's	Santa Barb to Chiquita	1.03	0	6	6.18	$17,908,000	$2,898,000
W Terry St	BB Plaza to Old 41	1.57	2	4	3.14	$5,438,000	$1,732,000
Total					120.22	$162,502,000	$1,352,000

Source: Lee County Department of Transportation, projects with at least some funding in the *Lee County FY 99/00 - 03/04 Transportation Capital Improvement Program.*

The cost to accommodate a new service unit of transportation demand, which is a daily vehicle-mile of travel (VMT), can now be calculated. The cost per VMT can be estimated by dividing the average cost of adding a new lane-mile to the major roadway system by the average daily capacity per lane. As shown in Table 7, the average cost per service unit is $128.

Table 7
ROAD COST PER SERVICE UNIT

Average Cost per New Lane-Mile	$1,352,000
Average Daily Capacity per Lane	10,600
Average Cost per VMT	$128

Source: Cost per lane-mile from Table 6; average capacity per lane from Table 5.

Motor Fuel Tax Credits

The revenues generated by federal, state and local gasoline and motor fuel taxes are used to fund the construction of capacity-expanding projects as well as the maintenance of existing roads in Lee County. An impact fee credit should only be granted for the portion that funds capacity-expanding roadway improvements.

The federal fuel excise tax is 18.4 cents per gallon of gasoline. Of the total, 4.3 cents is earmarked for deficit reduction and 2 cents is earmarked for mass transit, with the remaining 12.1 cents dedicated for roads and bridges.

State fuel taxes consist of a motor fuel sales tax and the State Comprehensive Enhanced Transportation System (SCETS) tax. The amount of these taxes are indexed to inflation and increase annually. For 2000, the state motor fuel sales tax is 9.3 cents and the SCETS tax is 5.1 cents, for a total of 14.4 cents per gallon of gasoline. These funds are earmarked for transportation purposes, and at least 14.3 percent of all FDOT receipts must be spent on public transportation. In addition, SCETS net tax receipts must be spent in the district where they were generated.

Federal and state taxes on motor fuels that are used for transportation purposes thus total 26.5 cents per gallon. In the 1990 update, the portion of federal and state gas tax revenue that is applied toward funding capacity-expanding improvements was derived from summary data published in the U.S. Statistical Abstract. In this update, the effective tax rate representing the funds returned to the county for capacity-expanding improvements will be determined by comparing construction and right-of-way projects in the first year of the Florida Department of Transportation (FDOT) Five-Year Work Programs for Lee County for the last five years to the gallons of motor fuels sold in Lee County during the same time period.

Table 8
STATE/FEDERAL MOTOR FUEL TAXES, FY 1996/97-2000/01

Facility	Improvement	FY 96/97	FY 97/98	FY 98/99	FY 99/00	FY 00/01
I-75 @ Alico Rd	PD&E/EMO Study			$356,447	$345,000	
I-75 @ Bonita Beach Rd	Interchange Imp			$100,000	$89,000	
SR 31, SR 80-Charlotte Co	Widen 2-4 Lanes		$74,000			
SR 739, US 41-6 Mi Cypress	New 4-Lane Road		$277,000			
SR 739, Winkler Ave-SR 82	Add Lanes		$161,000			
SR 78 @ Burnt Store	Traffic Signals				$25,000	
SR 78, E of Chiquita-W of S Barb	Add Lanes			$100,000	$1,300,000	$989,000
SR 78, Hart Rd-Slater Rd	Add Lanes		$6,930,000	$1,442,559		
SR 78, Slater-I-75	Add Lanes				$750,000	$1,245,000
SR 80 @ I-75	Interchange Imp				$52,000	
SR 80, E of Hickey Cr-Iverson	Add Lanes				$1,162,000	$25,000
SR 80, Iverson-Hendry Co	Add Lanes				$641,000	
SR 82 @ Lee/Thompson	Intersection Imp	$1,055,000		$48,991		
SR 82, Evans-Michigan Link	Add Lanes			$11,951,999	$2,660,000	
SR 82, Michigan-Ortiz Ave	Add Lanes				$706,000	
SR 867, San Carlos-Southdale	Add Lanes				$1,773,000	
SR 884, Solomon-Metro Pkwy	PD&E Study	$95,000				
US 41 @ Williams Rd	Traffic Signals			$28,692		
US 41 Bus @ Littleton Rd	Add Turn Lanes			$88,070	$136,000	
US 41 Bus, Marianna-Littleton	Add Lanes		$50,000	$875,000		
US 41, Collier Co-San Carlos	PD&E/EMO Study			$156,353		
US 41, Collier Co-Terry St	Add Lanes			$431,610		
US 41, N of Is Park-S of Daniels	Add Lanes			$535,800	$613,000	
US 41, S of Alico-N of Is Park	Add Lanes			$481,840	$374,000	
US 41, San Carlos-Alico Rd	Widen 2-4 Lanes	$290,000	$271,000		$7,096,000	
US 41, Victoria-N of 1st St	Interchange Imp	$482,000	$2,415,000		$373,000	
US 41, W Terry-Old 41 Hwy	Widen 2-4 Lanes			$586,206		
TOTAL		$1,922,000	$10,178,000	$17,183,567	$18,095,000	$2,259,000
Total Gallons Sold (inc. diesel)		217,034,829	223,086,765	239,173,802	251,132,492	263,689,117
Federal/State Capacity Funding per Gallon		$0.0089	$0.0456	$0.0718	$0.0721	$0.0086

Source: Capacity-expanding improvement funding from first years of FDOT, *Five Year Tentative Work Program, July 1, 1996 through June 30, 2001* and FDOT, *Five Year Tentative Work Program, July 1, 1997 through June 30, 2002*; gallons of motor fuels sold in Lee County for FY 1996/97 through 1998/99 from Florida Department of Revenue; estimated gallons for FY 1999/00 and 2000/01 based on annual increase of 5%; total state/federal motor fuel tax per gallon described in text and summarized in Table 9.

This analysis, summarized in Table 8 above, indicates that less than 8 cents per gallon of the Federal and State motor fuel taxes paid by Lee County motorists returns to the County to be spent on capacity-expanding improvements, and even this level of spending was almost achieved in only two of the last five years. Given the uncertainty of future federal and state funding, 8 cents per gallon is a reasonable estimate of future capacity-expanding funding based on recent historical experience.

The State imposes a 4-cent per gallon excise tax on motor fuels that is distributed to local governments. Two cents of this tax, referred to as the Constitutional Fuel Tax or the Fifth-Cent and Sixth-Cent Fuel Tax, is distributed to counties for transportation purposes. Approximately 25 percent of the Constitutional Fuel Tax revenue for Lee County is retained by the State to cover debt service for the Matanzas Pass and Hurricane Bay Bridges. The remaining 75 percent has been remitted to the County, which has been spending it in recent years on transportation operations and maintenance. The County Fuel Tax, also known as the Seventh-Cent Fuel Tax, is distributed to counties via the same distribution formula used for the constitutional fuel tax, and the proceeds are used by Lee County solely for transportation operations and maintenance. The Municipal Fuel Tax, also known as the Eighth-Cent Fuel Tax, is joined with non-transportation revenues and distributed to the cities from the Revenue Sharing Trust Fund for Municipalities.

Local governments in Florida are authorized to levy up to 12 cents of local option fuel taxes in the form of three separate levies. All 12 cents of local option fuel taxes are authorized for Lee County. The proceeds of the local option fuel taxes are distributed among the County and municipal governments according to interlocal agreement or statutory formula.

The first is a tax of up to 6 cents per gallon of motor and diesel fuel sold within the county. Approximately one-half of the 6-cent local option gas tax revenues are used to pay debt service on the County's 1993 and 1997 Gas Tax Bonds,[7] with the excess going to the Transportation Capital Improvement Fund and informally earmarked for road resurfacing and rehabilitation (except for the equivalent of 10 percent of the 5-cent optional gas tax going to transit operations).

The second is a tax of up to 5 cents per gallon of motor fuel sold within the county (diesel fuel is not subject to this tax). All of the 5-cent local option gas tax revenues are used for capacity-expanding improvements. Approximately one-half is dedicated to debt service for East/West Corridor improvements associated with the Midpoint Memorial Bridge, while the other half is used for other capacity-expanding projects.

The third, referred to as the Ninth-Cent Fuel Tax, is a tax of one cent per gallon of motor and diesel fuel sold in the county. The County is not required to share the proceeds of the Ninth-Cent Fuel Tax with the municipalities, and the funds are restricted to be used for transportation. Approximately one-half of the Ninth-Cent Fuel Tax revenues are used to retire debt service on the 1993 Road Bonds, with the balance used for transportation operations and maintenance.[8]

The motor fuel tax credits per gallon are summarized in Table 9. For every gallon of gasoline sold in Lee County, motorists currently pay approximately 42.5 cents in motor fuel taxes. Of this, approximately 17 cents can be expected to be available for capacity-expanding improvements to the major roadway system in Lee County based on past experience, or about 40 percent of motor fuel taxes paid.

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[7]From FY 1995-1999, debt service on the 1993 and 1997 gas tax bonds totaled $14.53 million, and 6-cent optional gas tax revenues were $34.95 million, so on average about 42% is being used for capacity-expanding improvements, although it has been going up and was 45% and 48% the last two years (from Lee County Budget Services, *Lee County Revenue Manual, FY 1998/99* and *FY 98 Lee County Debt Manual*).

[8]From FY 1995-1999, debt service on the 1993 road bonds totaled $5.7 million, and 9th cent gas tax revenues were $10.93 million, so about 52% is being used for capacity-expanding improvements (from Lee County Budget Services, *Lee County Revenue Manual, FY 1998/99* and *FY 98 Lee County Debt Manual*).

Table 9
MOTOR FUEL TAX CREDIT PER GALLON

Component of Motor Fuel Tax	Tax/Gallon (cents)	% to Capacity Improvements	Funding/ Gal.(cents)
Federal Motor Fuel Tax per Gallon	12.1	NA	NA
State Motor Fuel Sales Tax and SCETS per Gallon	14.4	NA	NA
Total Federal State Motor Fuel Taxes per Gallon	26.5	NA	8.0
Fifth and Sixth Cent (Constitutional Fuel Tax)	2.0	25%	0.5
Seventh Cent Fuel Tax (County Fuel Tax)	1.0	0%	0.0
Eighth Cent Fuel Tax (Municipal Fuel Tax)	1.0	0%	0.0
6-Cent Local Option Fuel Tax	6.0	50%	3.0
5-Cent Local Option Fuel Tax	5.0	100%	5.0
Ninth-Cent Fuel Tax	1.0	50%	0.5
Total Motor Fuel Tax/Gallon	42.5	40%	17.0

Source: Total Federal/State motor fuel tax funding per gallon from Table 8; percent of Constitutional Fuel Tax to capacity from Florida Legislative Committee on Intergovernmental Relations, *1999 Local Government Financial Information Handbook*, Table 2: Constitutional Fuel Tax, Summary of Distributions by County, State Fiscal Year 1997-98 (http://fcn. state.fl.us/lcir/99handbk/confuel2.pdf); percentages for 6-Cent Local Option Fuel Tax and Ninth-Cent Fuel Tax derived from data in Lee County Budget Services, *Lee County Revenue Manual, FY 1998/99* and *FY 98 Lee County Debt Manual* (http://www.lee-county.com/budget.asp); for other percentages see preceding text (percentages have been rounded)

Over the approximately 20-year useful life of road improvements, new development could thus be expected to generate approximately $46 in capacity-expanding road funding for every daily vehicle-mile of travel, as shown in Table 10. This is the amount of credit that should be applied against the cost of accommodating the transportation demands of new development.

Table 10
MOTOR FUEL TAX CREDIT PER SERVICE UNIT

Total Federal, State and Local Motor Fuel Tax Capacity-Expanding Improvement Funding per Gallon	$0.17
Miles per Gallon	16.9
Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	$0.0101
Days per Year	365
Annual Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	$3.69
Net Present Value Factor (5% discount rate over 20 years)	12.46
Motor Fuel Tax Credit per Daily Vehicle-Mile	$46

Source: Motor fuel tax funding per gallon from Table 9; miles per gallon is average for all motor vehicles for 1996 from US Census Bureau, *Statistical Abstract of the United States*, 1999,Tables 1053 and 1054; discount rate of 5% based on the County's average return on investments in the State Board of Administration (SBA) investment pool for the 12-month period from October 1998 to September 1999 according to Lee County Budget Services, Fiscal Research Division, January 28, 2000 memorandum.

Travel Demand

The travel demand generated by specific land use types is a product of three factors: 1) trip generation, 2) percent new trips and 3) trip length. The first two factors are well documented in the professional literature, and the average trip generation characteristics identified in studies of communities around the nation should be reasonably representative of trip generation characteristics in Lee County. In contrast, trip lengths are much more likely to vary between communities, depending on the geographic size and shape of the community and its major roadway system.

Travel demand factors were developed for a number of land uses not currently included in the impact fee ordinance fee schedule. These were land uses for which requests for individual assessments or administrative determinations had been made, and adding these land use categories formalizes what in many cases was administrative practice.

Requests have been made for the County to help promote affordable housing by varying the road impact fee for single-family dwellings by the size of the unit. The idea is that smaller units, which tend to be more affordable, also generate fewer trips and should have a lower road impact fee. While the idea is intuitively appealing, there is very little national data on this subject, and in any event, Lee County is sufficiently different from national average conditions due to its resort character that local studies would need to be conducted in order to justify differential fees by size.

Trip Generation

Trip generation rates were based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) Trip Generation manual. There have been a couple of local studies that have found trip rates for some uses that were significantly different from national average trip rates. Unfortunately, these studies had limited sample sizes and were conducted over ten years ago. Consequently, in most cases this study relies on more current national data.

Trip generation rates represent trip ends, or driveway crossings at the site of a land use. Thus, a single one-way trip from home to work counts as one trip end for the residence and one trip end for the work place, for a total of two trips. To avoid over-counting, all trip rates have been divided by two. This places the burden of travel equally between the origin and destination of the trip and eliminates double-charging for any particular trip.

New Trip Factor

Trip rates also need to be adjusted by a "new trip factor" to exclude pass-by and diverted-link trips. This adjustment is intended to reduce the possibility of over-counting by only including primary trips generated by the development. Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a particular development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees. A diverted-link trip is similar to a pass-by trip, but a diversion is made from the regular route to make an interim stop. The reduction for pass-by and diverted-link trips was drawn from the ITE manual and other published information.

Average Trip Length

The average trip length is the most difficult travel demand factor to determine. In the context of a road impact fee based on a demand-driven methodology, we are interested in determining the average length of a trip on the major roadway system within Lee County. This can be approximated by dividing the total daily travel demand (VMT) on the major roadway system by the total number of average daily trips generated by existing development in the county.

Existing land use data was compiled for all jurisdictions in the county in order to determine a county-wide average trip length. Existing land uses in each of six general categories are multiplied by average daily trip generation rates and summed to determine a reasonable estimate of total county-wide trips. As shown in Table 11, existing land use generates approximately 1.5 million average daily trips.

Table 11
COUNTY-WIDE DAILY TRIPS

Land Use	Units	Unincorp.*	Fort Myers	Cape Coral	Sanibel	Total County	Trip Rates	Daily Trips
Single-Family	Dwelling	64,736	8,047	35,016	3,816	111,615	4.79	534,636
Multi-Family	Dwelling	87,107	13,066	10,183	4,684	115040	3.32	381,933
Hotel/Motel	Rooms	20,466	NA	NA	0	20466	4.51	92,302
Commercial	1,000 sq. ft.	15,518.285	6,250.000	2,360.000	440.300	24568.585	14.74	362,141
Service	1,000 sq. ft.	8,130.828	17,260.000	2,360.000	396.850	28147.678	4.92	138,487
Industrial	1,000 sq. ft.	6,586.272	1,890.000	890.000	0.000	9366.272	3.04	28,473
Total Daily Trips Generated Within Lee County								1,537,972

*includes Fort Myers Beach

Source: Existing units for unincorporated area (including Fort Myers Beach) and Sanibel from 1998 property appraiser records (industrial square footage based on acres and assumed 0.10 FAR), existing units for Fort Myers and Cape Coral provided by city staff (nonresidential square footage based on acres and assumed 0.10 FAR); trip rates are one-half of average daily trip ends on a weekday reported in Institute of Transportation Engineers (ITE), *Trip Generation*, Sixth Edition, 1997 for ITE land use codes 210 (Single-Family Detached), 220 (Apartment), average of 310 and 320 (Hotel and Motel), 820 (Shopping Center–used rate for 250,000 sq. ft. center reduced by 30% pass-by rate plus additional 10% reduction for diverted-link trips), 710 (General Office Building), and 130 (Industrial Park).

The next step is to determine total daily travel in Lee County. An inventory was developed of all arterial and major collector roadways in the county. The major source of data for this effort is Lee County's ongoing traffic count program. The County maintains average daily traffic for all arterials maintained by the State or County. The 1999 counts were supplied by the County in a digital format. These counts were supplemented by counts maintained by the City of Cape Coral. Lack of counts for certain roadways in the City of Fort Myers required use of estimated volumes based on the judgment of the consultant, but these roadways make up a very small percentage of the total traffic considered in the county.

Counts provided by all agencies were average annual counts. However, there is a significant seasonal variation in traffic in Lee County, and trip generation performed for the impact fee update is based on peak season characteristics. It was therefore necessary to convert average annual counts to peak season counts. As with capacity, conversion of the counts was based on the permanent count station assigned to a particular link. In the few cases where a count station has not been assigned, the count station judged to be the most likely to reflect traffic peaking characteristics on the new facility was used. As part of the reporting generated by the permanent count stations, variations in monthly traffic are calculated. These variations are reported as a percentage of traffic during a particular month as compared to average annual traffic. In Lee County, traffic is heaviest during February and March. For purposes of converting traffic to peak season, traffic characteristics for March were used. In the instances where March data was unavailable, data for February was used.

Once traffic counts were converted to peak season, conversion to total county-wide VMT was straightforward. Counts for each segment were multiplied by the centerline length of the segment to calculate VMT for the link. VMT for individual links were totaled to arrive at county-wide VMT. The detailed count data, peaking factor and VMT for each roadway segment is presented in Table 18 at the end of this report.

To determine the average length of a trip within Lee County, the major road system VMT should be reduced by the amount of travel associated with "through trips" that do not have an origin or destination in

the county. Data from the 1999 regional travel demand model indicates that "external-to-external" trips are equivalent to 1.55 percent of trips generated within Lee County. Applying this percentage and the number of trips estimated to be generated within Lee County by existing land use yields a reasonable estimate of through trips. Multiplying through trips by the length of I-75 through the county provides a reasonable estimate of VMT associated with through traffic. Subtracting through trip VMT from total VMT gives the VMT that is associated with trips generated within the county. As shown in Table 12, locally-generated trips account for about 8.5 million vehicle-miles of travel on the major road system every day.

Table 12
MAJOR ROAD SYSTEM TRAVEL DEMAND

Total Daily Trips Generated within Lee County	1,537,972
Percent Through Trips	1.55%
Daily Through Trips	23,839
Average Length of Through Trips (miles)	34.1
Daily Through Trip VMT	812,910
Total Daily VMT on Major Road System	9,297,448
Locally-Generated Daily VMT	8,484,538

Source: Total daily trips generated within Lee County from Table 13; percent trips through Lee County with no origin or destination in county from regional travel demand model; average length of through trips based on length of I-75 through county; total daily VMT from Table 18.

Beside total locally-generated VMT on the major roadway system, the other necessary information required to determine average trip length is data on existing land use. This data was also compiled for all jurisdictions in the county in order to determine a county-wide average trip length. This calculation, presented in Table 13, indicates that the average trip length on the major roadway system is over five miles.

Table 13
AVERAGE TRIP LENGTH

Total Locally-Generated Daily VMT on Major Road System	8,484,538
Total Daily Trips Generated by Existing Development in County	1,537,972
Average Trip Length, Miles	5.52

Source: Total VMT from Table 12; total trips from Table 11.

This average trip length for Lee County's major roadway system is 62 percent of the national average trip length identified in the U.S. Department of Transportation's 1995 *Nationwide Personal Transportation Survey.* Using this ratio, reasonable trip lengths were derived for specific trip purposes, including home-to-work trips, shopping, school/church and other personal trips, as shown in Table 14. In addition, a residential trip length was determined, using a weighting of 40 percent work trips and 60 percent average trips.

Table 14
AVERAGE TRIP LENGTH BY TRIP PURPOSE

Trip Purpose	National Data	Local Data	Ratio	Est. Local Trip Lengths
To or from work	11.73	na	0.62	7.3
Residential	na	na	na	6.2
Doctor/Dentist	9.23	na	0.62	5.7
Average	8.92	5.52	0.62	5.5
School/Church	8.05	na	0.62	5.0
Family/Personal	6.88	na	0.62	4.3
Shopping	5.61	na	0.62	3.5

Source: Average trip lengths in miles; national data from US. Department of Transportation, *Nationwide Personal Transportation Survey*, 1995; local data from Table 13; ratio is average local divided by average national trip length; estimated local trip lengths are products of national data by ratio, estimated local residential trip length is weighted 40% local work trip length and 60% average trip length.

Average daily travel demand must be estimated for a broad variety of land uses in order to develop the fee schedule. The result of combining trip generation rates, new trip factors and average trip lengths is a travel demand schedule that establishes the vehicle-miles of travel (VMT) during the average weekday generated by various land use types per unit of development. The recommended travel demand schedule is presented in Table 15.

Table 15
TRAVEL DEMAND SCHEDULE

Land Use Type	ITE Code	Unit	Trip Ends	1-Way Trips	% New Trips	Length (miles)	Daily VMT
Single-Family Detached	210	Dwelling	9.57	4.79	100%	6.2	29.70
Multi-Family	220	Dwelling	6.63	3.32	100%	6.2	20.58
Townhouse	230	Dwelling	5.86	2.93	100%	6.2	18.17
Mobile Home/RV Park	240	Pad	4.81	2.40	100%	6.2	14.88
Adult Cong. Living Facility (ACLF)	252	Dwelling	2.15	1.08	100%	6.2	6.70
Hotel/Motel	310/320	Room	9.02	4.51	80%	6.2	22.37
RETAIL/COMMERCIAL							
Shopping Ctr (0-99,999 sf)	820	1000 sq. ft.	68.17	34.09	51%	2.8	48.68
Shopping Ctr (100,000-249,999 sf)	820	1000 sq. ft.	49.15	24.58	60%	3.2	47.19
Shopping Ctr (250,000-499,999 sf)	820	1000 sq. ft.	38.37	19.18	66%	3.5	44.31
Shopping Ctr (500,000 sf +)	820	1000 sq. ft.	29.96	14.98	70%	3.9	40.90
Bank	911	1000 sq. ft.	156.48	78.24	27%	3.5	73.94
Car Wash, Self Service	847	Stall	108.00	54.00	50%	3.5	94.50
Convenience Store w/Gas Sales	851	1000 sq. ft.	737.99	369.00	16%	1.8	106.27
Golf Course (open to public)	430	Acre	5.04	2.52	80%	4.3	8.67
Movie Theater	443	1000 sq. ft.	78.06	39.03	50%	3.5	68.30
Restaurant, Fast Food	834	1000 sq. ft.	496.12	248.06	27%	1.8	120.56
OFFICE/INSTITUTIONAL							
Office, General (0-99,999 sf)	710	1000 sq. ft.	13.27	6.64	75%	5.5	27.49
Office, General (100,000 sf +)	710	1000 sq. ft.	11.30	5.65	75%	5.5	23.39
Office, Medical	720	1000 sq. ft.	36.13	18.07	75%	5.7	77.25
Hospital	610	1000 sq. ft.	16.78	8.39	75%	5.7	35.87
Nursing Home	620	1000 sq. ft.	4.70	2.35	75%	5.7	10.05
Church	560	1000 sq. ft.	9.11	4.56	75%	5.0	17.10
Day Care Center	565	1000 sq. ft.	79.26	39.63	24%	5.0	47.56
Elementary/Sec. School (private)	520/522/530	1000 sq. ft.	12.41	6.21	24%	5.0	7.45
INDUSTRIAL							
Industrial Park	130	1000 sq. ft.	6.96	3.48	95%	6.2	20.50
Warehouse	150	1000 sq. ft.	4.96	2.48	95%	6.2	14.61
Mini-Warehouse	151	1000 sq. ft.	2.50	1.25	95%	4.3	5.11

Source: "Trip Ends" is average daily trips (ADT) during weekday from Institute of Transportation Engineers (ITE), *Trip Generation*, 6th ed., 1997; "1-Way Trips" = ½ Trip Ends; "ITE Code" is land use code from ITE manual used for land use category (where more than one code shown, rates were averaged); shopping center and general office rates based on upper end of range; nursing home ADT derived from peak hour trip (PHT) rate and ADT and PHT rates per bed; new trip percentages for most uses from ITE, *Trip Generation Handbook,* October 1998; percentage for day care center from paper by Hitchens, 1990 ITE Compendium; percentage for elementary/secondary school assumed same as for day care; percentages for movie theater, golf course and car wash assumed; percentages for other land uses taken from Kimley-Horn and Associates, Inc., *Lee County Impact Fee Transportation Data*, 1990; average trip lengths from Table 14; retail average trip length used for centers of 250,000 to 500,000 square feet, reduced by 10% and 20%, respectively for the next two smaller categories and increased by 10% for the next larger category, and reduced by 50% for convenience stores and fast food restaurants; average trip length used for office uses and residential trip length used for industrial/warehousing uses.

Recommended Fee Schedule

Based on the impact fee formula and the inputs calculated in this report, the recommended road impact fees per unit of development for various land uses are shown in Table 16. Impact fees could be adopted at less than 100 percent of the level shown in the net cost schedule, provided that the reduction is applied uniformly across all land use categories in order to retain the proportionality of the fees. The impact fee ordinance contains a provision allowing the option of independent fee determination studies for those applicants who can demonstrate that their development will have less impact on the need for road facilities than indicated by the fee schedule.

Table 16
RECOMMENDED ROAD IMPACT FEE SCHEDULE

Land Use Type	Unit	Daily VMT	Cost/ VMT	Cost/ Unit	Credit/ VMT	Credit/ Unit	Net Cost per Unit
Single-Family Detached	Dwelling	29.70	$128	$3,802	$46	$1,366	$2,436
Multi-Family	Dwelling	20.58	$128	$2,634	$46	$947	$1,687
Townhouse	Dwelling	18.17	$128	$2,326	$46	$836	$1,490
Mobile Home/RV Park	Pad	14.88	$128	$1,905	$46	$684	$1,221
Adult Cong. Living Facility (ACLF)	Dwelling	6.70	$128	$858	$46	$308	$550
Hotel/Motel	Room	22.37	$128	$2,863	$46	$1,029	$1,834
RETAIL/COMMERCIAL							
Shopping Ctr (0-99,999 sf)	1000 sq. ft.	48.68	$128	$6,231	$46	$2,239	$3,992
Shopping Ctr (100,000-249,999 sf)	1000 sq. ft.	47.19	$128	$6,040	$46	$2,171	$3,869
Shopping Ctr (250,000-499,999 sf)	1000 sq. ft.	44.31	$128	$5,672	$46	$2,038	$3,634
Shopping Ctr (500,000 sf +)	1000 sq. ft.	40.90	$128	$5,235	$46	$1,881	$3,354
Bank	1000 sq. ft.	73.94	$128	$9,464	$46	$3,401	$6,063
Car Wash, Self Service	Stall	94.50	$128	$12,096	$46	$4,347	$7,749
Convenience Store w/Gas Sales	1000 sq. ft.	106.27	$128	$13,603	$46	$4,888	$8,715
Golf Course (open to public)	Acre	8.67	$128	$1,110	$46	$399	$711
Movie Theater	1000 sq. ft.	68.30	$128	$8,742	$46	$3,142	$5,600
Restaurant, Fast Food	1000 sq. ft.	120.56	$128	$15,432	$46	$5,546	$9,886
OFFICE/INSTITUTIONAL							
Office, General (0-99,999 sf)	1000 sq. ft.	27.49	$128	$3,519	$46	$1,265	$2,254
Office, General (100,000 sf +)	1000 sq. ft.	23.39	$128	$2,994	$46	$1,076	$1,918
Office, Medical	1000 sq. ft.	77.25	$128	$9,888	$46	$3,554	$6,334
Hospital	1000 sq. ft.	35.87	$128	$4,591	$46	$1,650	$2,941
Nursing Home	1000 sq. ft.	10.05	$128	$1,286	$46	$462	$824
Church	1000 sq. ft.	17.10	$128	$2,189	$46	$787	$1,402
Day Care Center	1000 sq. ft.	47.56	$128	$6,088	$46	$2,188	$3,900
Elementary/Sec. School (private)	1000 sq. ft.	7.45	$128	$954	$46	$343	$611
INDUSTRIAL							
Industrial Park	1000 sq. ft.	20.50	$128	$2,624	$46	$943	$1,681
Warehouse	1000 sq. ft.	14.61	$128	$1,870	$46	$672	$1,198
Mini-Warehouse	1000 sq. ft.	5.11	$128	$654	$46	$235	$419

Source: Daily VMT per unit from Table 15; cost per VMT from Table 7; credit per VMT from Table 9.

While impact fees in Florida are primarily governed by case law, there are some statutory provisions that do apply. Section 235.26(1)(a), Florida Statutes, for example, provides that public schools are exempt from

impact fees. Consequently, fees shown above for elementary/secondary schools apply only to private schools.

The recommended fees calculated in this report are compared with the current fees in Table 17. If adopted at 100 percent, the fees would be increased by an average of 37 percent, although the fees for some land use categories, such as retail centers of 100,000 square feet or more and convenience stores, should be reduced.

Table 17
COMPARATIVE ROAD IMPACT FEES

Land Use	Unit	Current Fees	Recommended Fees	Change	Percent Change
Single Family	Dwelling	$1,712	$2,436	$724	42%
Multi-Family	Dwelling	$1,075	$1,687	$612	57%
Townhouse	Dwelling	$1,251	$1,490	$239	19%
Timeshare	1,000 sf	$1,477	$1,687	$210	14%
Mobile Home Park	Pad	$987	$1,221	$234	24%
RV Park	Pad	$1,038	$1,221	$183	18%
Hotel/Motel	Room	$1,420	$1,834	$414	29%
Retail (<100,000 sf)	1,000 sf	$3,297	$3,992	$695	21%
Retail (100,000 sf+)	1,000 sf	$4,041	$3,634	($407)	-10%
Convenience Store	1,000 sf	$11,177	$8,715	($2,462)	-22%
Fast Food Restaurant	1,000 sf	$7,947	$9,886	$1,939	24%
General Office (<100,000 sf)	1,000 sf	$1,990	$2,254	$264	13%
General Office (100,000 sf +)	1,000 sf	$1,265	$1,918	$653	52%
Medical Office	1,000 sf	$4,169	$6,334	$2,165	52%
Industrial	1,000 sf	$722	$1,681	$959	133%
Warehouse	1,000 sf	$1,079	$1,198	$119	11%
Weighted Average					37%

Source: Current fees from Ordinance No. 90-A32; recommended fees from Table 16; weighted average based on land uses in Table 11.

Table 18
EXISTING MAJOR ROADWAY CONDITIONS

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
I-75	Collier County Line	Bonita Beach Rd	1.00	56,000	1.13	63,280
I-75	Bonita Beach Rd	Corkscrew Rd	7.40	50,500	1.13	422,281
I-75	Corkscrew Rd	Alico Rd	4.30	52,000	1.13	252,668
I-75	Alico Rd	Daniels Pkwy	3.80	65,000	1.13	279,110
I-75	Daniels Pkwy	Colonial Blvd	4.50	57,000	1.13	289,845
I-75	Colonial Blvd	MLK	1.60	58,500	1.13	105,768
I-75	MLK	Luckett Rd	1.50	53,500	1.13	90,682
I-75	Luckett Rd	SR 80	1.90	54,500	1.13	117,011
I-75	SR 80	SR 78	2.40	43,000	1.13	116,616
I-75	SR 78	County Line	5.70	29,000	1.13	186,789
Subtotal, Interstate			34.10			1,924,050
Bus 41	SR 80	N End of Bridge	1.20	27,700	1.13	37,561
Bus 41	N End of Bridge	Pondella Rd	0.50	27,700	1.13	15,650
Bus 41	Pondella Rd	SR 78	1.10	25,000	1.13	31,075
Bus 41	SR 78	Littleton	1.00	17,400	1.13	19,662
Bus 41	Littleton	Laurel Dr	0.50	9,900	1.13	5,593
Bus 41	Laurel Dr	US 41	1.10	9,900	1.13	12,306
Colonial Blvd	US 41	Fowler St	0.50	33,400	1.08	18,036
Colonial Blvd	Fowler St	Metro Pkwy	0.80	41,300	1.08	35,683
Colonial Blvd	Metro Pkwy	Winkler Ave	2.10	34,800	1.21	88,427
Colonial Blvd	Winkler Ave	Six Mile Pkwy	0.70	40,100	1.11	31,158
Colonial Blvd	Six Mile Pkwy	I-75	0.50	38,800	1.11	21,534
McGregor Blvd	Gladiolus Dr	Griffin Blvd	1.00	18,700	1.07	20,009
McGregor Blvd	Griffin Blvd	A & W Bulb Rd	1.00	20,900	1.07	22,363
McGregor Blvd	A & W Bulb Rd	Cypress Lake Dr	0.70	27,200	1.07	20,373
McGregor Blvd	Cypress Lake Dr	College Pkwy	0.80	25,700	1.07	21,999
McGregor Blvd	College Pkwy	Winkler Rd	1.40	13,800	1.07	20,672
McGregor Blvd	Winkler Rd	Brentwood	0.80	18,600	1.13	16,814
McGregor Blvd	Brentwood	Colonial Blvd	0.80	18,900	1.13	17,086
Metro Pkwy	Six Mile Pkwy	Daniels Pkwy	1.30	8,100	1.10	11,583
Metro Pkwy	Daniels Pkwy	Crystal Dr	1.30	20,100	1.10	28,743
Metro Pkwy	Crystal Dr	Danley Dr	1.10	25,300	1.10	30,613
Metro Pkwy	Danley Dr	Colonial Blvd	1.20	30,300	1.10	39,996
Metro Pkwy	Colonial Blvd	Winkler Ave	0.50	18,700	1.10	10,285
Metro Pkwy	Winkler Ave	Warehouse Rd	0.50	16,400	1.10	9,020
Metro Pkwy	Warehouse Rd	Hanson St	0.80	13,400	1.10	11,792
MLK (SR 82)	Cranford Ave	Ford St	0.60	17,500	1.11	11,655
MLK (SR 82)	Ford St	Highland Ave	0.40	17,500	1.11	7,770
MLK (SR 82)	Highland Ave	Michigan Link	1.10	12,700	1.11	15,507
MLK (SR 82)	Michigan Link	Ortiz Ave	0.80	18,600	1.11	16,517
MLK (SR 82)	Ortiz Ave	I-75	0.60	17,000	1.11	11,322
MLK (SR 82)	I-75	Buckingham Rd	1.50	12,200	1.11	20,313

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
MLK (SR 82)	Buckingham Rd	Colonial Blvd	1.00	9,500	1.11	10,545
MLK (SR 82)	Colonial Blvd	Gateway Blvd	0.80	8,900	1.09	7,761
MLK (SR 82)	Gateway Blvd	Gunnery Rd	3.50	8,900	1.09	33,954
MLK (SR 82)	Gunnery Rd	Alabama Rd	3.50	4,900	1.09	18,694
MLK (SR 82)	Alabama Rd	Bell Blvd	4.20	4,900	1.09	22,432
MLK (SR 82)	Bell Blvd	County Line	2.70	4,900	1.09	14,421
San Carlos Blvd	Estero Blvd	Main St	0.60	23,100	1.10	15,246
San Carlos Blvd	Main St	Summerlin Rd	2.50	23,900	1.16	69,310
San Carlos Blvd	Summerlin Rd	Kelly Rd	1.10	14,900	1.07	17,537
San Carlos Blvd	Kelly Rd	McGregor Blvd	0.60	14,900	1.07	9,566
Six Mile Pkwy	US 41	Metro Pkwy	1.20	26,700	1.21	38,768
SR 31	SR 80	SR 78	1.40	7,200	1.10	11,088
SR 31	SR 78	N. River Rd	1.30	4,000	1.13	5,876
SR 31	N. River Rd	County Line	2.00	4,000	1.13	9,040
SR 78	Burnt Store Rd	Chiquita Blvd	2.00	12,436	1.24	30,841
SR 78	Chiquita Blvd	Santa Barbara	2.30	17,124	1.24	48,838
SR 78	Santa Barbara Blvd	Del Prado Blvd	2.30	18,399	1.24	52,474
SR 78	Del Prado Blvd	Barnett Rd	2.10	16,100	1.11	37,529
SR 78	Barnett Rd	US 41	0.50	16,100	1.11	8,936
SR 78	US 41	Walmart entry	0.40	20,600	1.12	9,229
SR 78	Walmart Entrance	Piney Rd	0.40	20,600	1.12	9,229
SR 78	Piney Rd	Bus 41	0.40	20,600	1.12	9,229
SR 78	Bus 41	Hart Rd	1.10	27,500	1.13	34,183
SR 78	Hart Rd	Brewers Rd	0.40	24,600	1.13	11,119
SR 78	Brewers Rd	Slater Rd	0.80	24,600	1.13	22,238
SR 78	Slater Rd	I-75	2.90	16,400	1.13	53,743
SR 78	I-75	Nalle Rd	0.60	8,400	1.13	5,695
SR 78	Nalle Rd	SR 31	2.70	8,400	1.13	25,628
SR 80	Prospect Ave	Ortiz Ave	1.30	25,500	1.10	36,465
SR 80	Ortiz Ave	I-75	1.20	25,500	1.10	33,660
SR 80	I-75	SR 31	2.70	26,700	1.10	79,299
SR 80	SR 31	Buckingham Rd	2.50	24,700	1.10	67,925
SR 80	Buckingham Rd	Hickey Creek Rd	2.50	14,200	1.10	39,050
SR 80	Hickey Creek Rd	Mitchell Ave	0.90	9,700	1.10	9,603
SR 80	Mitchell Ave	Joel Blvd	4.00	9,700	1.10	42,680
SR 80	Joel Blvd	County Line	2.20	9,700	1.10	23,474
US 41	Collier County Line	Bonita Beach Rd	1.00	27,400	1.17	32,058
US 41	Bonita Beach Rd	Terry St	1.10	34,500	1.17	44,402
US 41	Terry St	Old 41	2.30	29,200	1.20	80,592
US 41	Old 41	Corkscrew Rd	3.50	30,100	1.20	126,420
US 41	Corkscrew Rd	Broadway	0.70	27,100	1.20	22,764
US 41	Broadway	Sanibel Blvd	1.90	25,700	1.20	58,596
US 41	Sanibel Blvd	Alico Rd	2.20	25,700	1.20	67,848
US 41	Alico Rd	Island Park Rd	1.00	39,400	1.20	47,280

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
US 41	Island Park Rd	Jamaica Bay W	1.60	42,800	1.20	82,176
US 41	Jamaica Bay W	Six Mile Pkwy	0.50	52,700	1.09	28,722
US 41	Six Mile Pkwy	Andrea Ln	0.50	39,900	1.09	21,746
US 41	Andrea Ln	Daniels Pkwy	0.80	39,900	1.09	34,793
US 41	Daniels Pkwy	College Pkwy	0.70	47,200	1.09	36,014
US 41	College Pkwy	South Rd	1.40	49,000	1.09	74,774
US 41	South Rd	Boy Scout Rd	0.40	46,800	1.09	20,405
US 41	Boy Scout Rd	North Airport Rd	0.80	38,400	1.09	33,485
US 41	North Airport Rd	Colonial Blvd	0.20	42,800	1.09	9,330
US 41	Fountain Interchange	N Key Dr	0.90	38,800	1.09	38,063
US 41	N Key Dr	Hancock B Pkwy	0.70	40,600	1.10	31,262
US 41	Hancock B. Pkwy	Pondella Rd	0.30	27,000	1.10	8,910
US 41	Pondella Rd	SR 78	1.30	22,400	1.10	32,032
US 41	SR 78	Littleton Rd	1.00	18,000	1.10	19,800
US 41	Littleton Rd	Bus 41	1.20	16,000	1.10	21,120
US 41	Bus 41	Del Prado Blvd	0.80	11,500	1.10	10,120
US 41	Del Prado Blvd	Charlotte Co	3.40	11,500	1.10	43,010
Subtotal, State Roads			121.00			2,682,144
Alabama Rd	SR 82	Milwaukee Blvd	1.90	3,700	1.09	7,663
Alabama Rd	Milwaukee Blvd	Homestead Rd	1.70	5,900	1.08	10,832
Alexander Bell	SR 82	Milwaukee Blvd	2.30	1,000	1.09	2,507
Alexander Bell	Milwaukee Blvd	Leeland Heights	3.40	2,600	1.08	9,547
Alico Rd	US 41	Lee Rd	2.10	12,800	1.17	31,450
Alico Rd	Lee Rd	Three Oaks Pky	0.80	12,000	1.17	11,232
Alico Rd	Three Oaks Pkwy	I-75	0.50	14,900	1.17	8,717
Ben H Griffin Pkwy	Corkscrew Rd	FGCU Entrance	2.20	2,400	1.17	6,178
Ben H Griffin Pkwy	FGCU Entrance	Alico Rd	2.20	1,000	1.17	2,574
Bonita Beach Rd	Hickory Blvd	Vanderbilt Dr	1.50	12,900	1.38	26,703
Bonita Beach Rd	Vanderbilt Dr	US 41	0.70	21,500	1.38	20,769
Bonita Beach Rd	US 41	Hacienda Village	0.70	20,700	1.38	19,996
Bonita Beach Rd	Hacienda Village	Old 41	1.00	20,700	1.38	28,566
Bonita Beach Rd	Old 41	Imperial St	1.10	19,700	1.25	27,088
Bonita Beach Rd	Imperial St	I-75	0.70	21,400	1.25	18,725
Bonita Beach Rd	I-75	Bonita Grand Dr	0.70	9,300	1.25	8,138
Boyscout Rd	Summerlin Rd	Clayton Ct	0.40	23,100	1.01	9,332
Boyscout Rd	Clayton Ct	US 41	0.30	23,100	1.01	6,999
Buckingham Rd	SR 82	Orange River Blv	7.80	3,200	1.08	26,957
Buckingham Rd	Orange River Blvd	SR 80	2.60	5,300	1.08	14,882
Burnt Store Rd	SR 78	Diplomat Pkwy	2.80	3,800	1.22	12,981
Burnt Store Rd	Diplomat Pkwy	County Line	6.30	2,900	1.22	22,289
Cape Coral Bridge	Del Prado Blvd	W end of bridge	0.40	35,100	1.10	15,444
Cape Coral Bridge	W end of bridge	McGregor Blvd	1.30	35,100	1.10	50,193
College Pkwy	McGregor Blvd	Winkler Rd	0.80	29,400	1.08	25,402

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
College Pkwy	Winkler Rd	Whiskey Crk Dr	0.80	35,200	1.08	30,413
College Pkwy	Whiskey Creek Dr	Summerlin Rd	0.80	37,400	1.08	32,314
College Pkwy	Summerlin Rd	US 41	0.90	30,400	1.08	29,549
Colonial Blvd	McGregor Blvd	Summerlin Rd	0.40	39,900	1.06	16,918
Colonial Blvd	Summerlin Rd	US 41	0.70	41,900	1.06	31,090
Colonial Blvd	I-75	SR 82	2.40	15,900	1.11	42,358
Corkscrew Rd	US 41	Three Oaks Pky	1.30	7,800	1.32	13,385
Corkscrew Rd	Three Oaks Pkwy	I-75	0.80	10,800	1.32	11,405
Corkscrew Rd*	I-75	Ben H Griffin Pky	0.50	3,500	1.32	2,310
Corkscrew Rd	Ben Hill Griffin Pkwy	Wildcat Run Dr	1.70	3,500	1.32	7,854
Corkscrew Rd	Wildcat Run Dr	Alico Rd	2.60	1,200	1.32	4,118
Corkscrew Rd	Alico Rd	County Line	10.40	1,200	1.32	16,474
Cypress Lake Dr	McGregor Blvd	South Point Blvd	0.40	13,900	1.21	6,728
Cypress Lake Dr	South Point Blvd	Winkler Rd	0.60	19,900	1.21	14,447
Cypress Lake Dr	Winkler Rd	Summerlin Rd	0.70	26,400	1.21	22,361
Cypress Lake Dr	Summerlin Rd	US 41	0.90	31,100	1.21	33,868
Daniels Pkwy	US 41	Big Pine Way	0.50	32,800	1.21	19,844
Daniels Pkwy	Big Pine Way	Metro Pkwy	0.60	32,800	1.21	23,813
Daniels Pkwy	Metro Pkwy	Six Mile Pkwy	0.80	32,800	1.21	31,750
Daniels Pkwy	Six Mile Pkwy	Palamino Dr	2.20	42,800	1.21	113,934
Daniels Pkwy	Palamino Dr	I-75	0.60	37,100	1.21	26,935
Daniels Pkwy	I-75	Treeline Ave	0.50	26,500	1.29	17,093
Daniels Pkwy	Treeline Ave	Chamberlin Pky	0.80	26,500	1.29	27,348
Daniels Pkwy	Chamberlin Pkwy	Gateway Blvd	1.70	11,400	1.10	21,318
Del Prado Blvd	Cape Coral Pkwy	SE 46th St	0.30	21,200	1.08	6,869
Del Prado Blvd	SE 46th St	Coronado Pkwy	0.60	25,200	1.08	16,330
Del Prado Blvd	Coronado Pkwy	Cornwallis Pkwy	1.30	37,000	1.08	51,948
Del Prado Blvd	Cornwallis Pkwy	Coral Point Dr	1.80	46,000	1.08	89,424
Del Prado Blvd	Coral Point Dr	Hancock B Pkwy	2.00	30,200	1.08	65,232
Del Prado Blvd	Hancock B. Pkwy	NE 6th St	0.70	19,300	1.08	14,591
Del Prado Blvd	NE 6th St	SR 78	0.40	19,300	1.08	8,338
Estero Blvd	Hickory Blvd	Ave Pescador	2.90	7,500	1.10	23,925
Estero Blvd	Avenida Pescador	Mid Island Dr	1.20	13,500	1.10	17,820
Estero Blvd	Mid Island Dr	San Carlos Blvd	1.80	16,700	1.10	33,066
Fowler St	US 41	N Airport Rd	1.00	21,600	1.12	24,192
Fowler St	N Airport Rd	Colonial Blvd	0.30	24,500	1.12	8,232
Fowler St	Colonial Blvd	Winkler Ave	0.50	25,000	1.12	14,000
Fowler St	Winkler Ave	Hanson St	1.30	24,100	1.12	35,090
Fowler St	Hanson St	SR 82	1.30	19,700	1.12	28,683
Gladiolus Dr	McGregor Blvd	Pine Ridge Rd	0.50	9,300	1.19	5,534
Gladiolus Dr	Pine Ridge Rd	Bass Rd	1.60	15,700	1.19	29,893
Gladiolus Dr	Bass Rd	Winkler Rd	0.80	13,000	1.19	12,376
Gladiolus Dr	Winkler Rd	Summerlin Rd	0.50	16,300	1.19	9,699
Gladiolus Dr	Summerlin Rd	US 41	1.50	32,400	1.19	57,834

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Gunnery Rd	SR 82	Lee Blvd	2.50	2,700	1.09	7,358
Gunnery Rd	Lee Blvd	Buckingham Rd	1.50	4,700	1.11	7,826
Hancock B Pkwy	Del Prado Blvd	NE 24th Ave	1.10	21,200	1.07	24,952
Hancock B Pkwy	NE 24th Ave	Orange Grove Bl	0.50	24,200	1.07	12,947
Hancock B Pkwy	Orange Grove Blvd	Moody Rd	1.20	24,500	1.07	31,458
Hancock B Pkwy	Moody Rd	US 41	0.90	25,600	1.07	24,653
Hickory Blvd	Bonita Beach Rd	Mclaughlin Blvd	1.10	12,900	1.10	15,609
Hickory Blvd	Mclaughlin Blvd	Melody Lane	0.70	10,300	1.10	7,931
Hickory Blvd	Melody Lane	Estero Blvd	6.70	7,700	1.10	56,749
Homestead Rd	SR 82	Leeland Heights	5.60	6,300	1.08	38,102
Homestead Rd	Leeland Heights	Lee Blvd	1.10	21,700	1.08	25,780
Joel Blvd	Bell Blvd	Country Club(n)	0.90	12,000	1.08	11,664
Joel Blvd	Country Club(n)	18th St	3.90	4,900	1.08	20,639
Joel Blvd	18th St	SR 80	3.10	4,900	1.08	16,405
Koreshan Blvd	US 41	Three Oaks Pky	1.80	1,700	1.32	4,039
Lee Blvd*	SR 82	Gunnery Rd	3.60	15,500	1.11	61,938
Lee Blvd*	Gunnery Rd	Homestead Rd	3.90	14,500	1.11	62,771
Lee Blvd	Homestead Rd	Leeland Heights	1.60	6,300	1.11	11,189
Leeland Heights	Homestead Rd	Lee Blvd	0.40	10,500	1.11	4,662
Leeland Heights	Lee Blvd	Joel Blvd	1.60	10,500	1.11	18,648
Littleton Rd	Corbett Rd	US 41	1.50	6,100	1.12	10,248
Littleton Rd	US 41	Bus 41	0.70	5,200	1.13	4,113
Luckett Rd	Ortiz Ave	I-75	0.80	9,700	1.11	8,614
McGregor Blvd	Sanibel T Plaza	Harbor Dr	0.20	17,900	1.31	4,690
McGregor Blvd	Harbor Dr	Summerlin Rd	2.20	20,200	1.31	58,216
McGregor Blvd	Summerlin Rd	Kelly Rd	1.70	10,300	1.23	21,537
McGregor Blvd	Kelly Rd	Thornton Rd	0.30	15,600	1.23	5,756
McGregor Blvd	Thornton Rd	San Carlos Blvd	0.70	15,600	1.07	11,684
N River Rd	SR 31	Franklin Lock Rd	4.50	2,300	1.10	11,385
N River Rd	Franklin Lock Rd	Broadway Rd	5.70	1,100	1.10	6,897
N River Rd	Broadway Rd	County Line	3.60	1,600	1.10	6,336
Old 41	County Line	Bonita Beach Rd	1.20	9,500	1.17	13,338
Old 41	Bonita Beach Rd	Terry St	1.00	16,200	1.17	18,954
Old 41	Terry St	Rosemary Rd	0.30	15,000	1.17	5,265
Old 41	Rosemary Rd	US 41	2.70	7,400	1.17	23,377
Orange River Blvd	SR 80	Staley Rd	1.30	7,100	1.10	10,153
Orange River Blvd	Staley Rd	Buckingham Rd	3.00	4,900	1.10	16,170
Ortiz Ave	Colonial Blvd	SR 82	1.70	10,400	1.13	19,978
Ortiz Ave	SR 82	Ballard St	1.10	11,800	1.13	14,667
Ortiz Ave	Ballard St	Tice St	1.30	11,900	1.13	17,481
Ortiz Ave	Tice St	SR 80	0.30	8,300	1.13	2,814
Pine Island Rd	Stringfellow Rd	Burnt Store Rd	5.40	10,300	1.24	68,969
Pondella Rd	SR 78	Westwood Rd	0.90	7,900	1.12	7,963
Pondella Rd	Westwood Rd	Orange Grove Bl	0.60	7,900	1.12	5,309

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Pondella Rd	Orange Grove Blvd	US 41	1.60	16,100	1.12	28,851
Pondella Rd	US 41	Bus 41	0.60	15,500	1.12	10,416
Sanibel Causeway	Sanibel Shoreline	Toll Plaza	2.90	17,900	1.27	65,926
Six Mile Cypress	Metro Pkwy	Daniels Pkwy	1.80	14,600	1.21	31,799
Six Mile Cypress	Daniels Pkwy	Winkler Ext.	3.70	9,800	1.13	40,974
Six Mile Cypress	Winkler Ext.	Challenger Blvd	0.80	9,800	1.13	8,859
Six Mile Cypress	Challenger Blvd	Colonial Blvd	0.50	8,300	1.13	4,690
Slater Rd	SR 78	Nalle Grade Rd	4.00	6,400	1.13	28,928
Stringfellow Rd	1st Ave	Pine Island Rd	7.90	9,500	1.33	99,817
Stringfellow Rd	Pine Island Rd	Pineland Rd	3.30	8,700	1.33	38,184
Stringfellow Rd	Pineland Rd	Main St	3.70	3,500	1.33	17,224
Summerlin Rd	McGregor Blvd	San Carlos Blvd	2.20	20,100	1.27	56,159
Summerlin Rd	San Carlos Blvd	Pine Ridge Rd	0.50	20,700	1.27	13,145
Summerlin Rd	Pine Ridge Rd	Bass Rd	1.70	28,400	1.27	61,316
Summerlin Rd	Bass Rd	Gladiolus Dr	1.80	32,500	1.27	74,295
Summerlin Rd	Gladiolus Dr	Cypress Lake Dr	1.80	25,700	1.27	58,750
Summerlin Rd	Cypress Lake Dr	College Pkwy	0.70	26,400	1.01	18,665
Summerlin Rd	College Pkwy	Boy Scout	1.90	32,200	1.01	61,792
Summerlin Rd	Boy Scout	Colonial Blvd	1.10	17,100	1.01	18,998
Sunshine Blvd	SR 82	Lee Blvd	3.60	1,300	1.08	5,054
Sunshine Blvd	Lee Blvd	W 12th St	3.20	3,000	1.08	10,368
Three Oaks Pkwy	Corkscrew Rd	San Carlos Blvd	3.10	4,500	1.32	18,414
Three Oaks Pkwy	San Carlos Blvd	Alico Rd	1.70	5,100	1.17	10,144
Vanderbilt Dr	County Line	Bonita Beach Rd	1.00	6,600	1.17	7,722
Veterans Mem Pky	Santa Barbara Blvd	Country Club Blv	1.10	22,600	1.06	26,352
Veterans Mem Pky	Country Club Blvd	Midpoint Br Toll	1.50	27,800	1.06	44,202
Veterans Mem Pky	Midpoint Brdg Toll P	McGregor Blvd	2.90	26,900	1.06	82,691
W Terry St	US 41	Old 41	1.80	9,200	1.25	20,700
Winkler Rd	Summerlin Rd	Gladiolus Dr	0.50	3,200	1.27	2,032
Winkler Rd	Gladiolus Dr	Brandywine Cir	0.80	9,900	1.27	10,058
Winkler Rd	Brandywine Cir	Cypress Lake Dr	0.90	12,200	1.27	13,945
Winkler Rd	Cypress Lake Dr	College Pkwy	0.70	12,400	1.08	9,374
Winkler Rd	College Pkwy	Sunset Vista	0.50	6,100	1.01	3,081
Winkler Rd	Sunset Vista	McGregor Blvd	0.80	6,100	1.01	4,929
Subtotal, Lee County Arterials			255.10			3,422,955
Alico Rd	I-75	Ben H Griffin Pky	0.50	5,200	1.17	3,042
Alico Rd	Ben Hill Griffin Pkwy	Corkscrew Rd	7.20	900	1.32	8,554
A & W Bulb Rd	Gladiolus Dr	McGregor Blvd	1.30	3,000	1.07	4,173
Bass Rd	Summerlin Rd	Gladiolus Dr	1.30	5,700	1.27	9,411
Brantley Rd	Summerlin Rd	US 41	0.70	3,600	1.01	2,545
Briarcliff Rd	US 41	Triple Crown Ct	2.90	5,000	1.08	15,660
Broadway (Alva)	SR 80	N River Rd	0.50	3,600	1.27	2,286
Captiva Dr	Blind Pass	South Seas	3.30	6,300	1.21	25,156

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Crystal Dr	US 41	Beacon Blvd	0.20	12,500	1.09	2,725
Crystal Dr	Beacon Blvd	Metro Pkwy	0.90	12,500	1.09	12,263
Davis Rd	McGregor Blvd	Iona Rd	1.00	1,800	1.31	2,358
Fiddlesticks Blvd	Guardhouse	Daniels Pkwy	1.60	4,500	1.21	8,712
Hart Rd	SR 78	Tucker Lane	2.60	7,400	1.13	21,741
Iona Rd	Davis Rd	McGregor Blvd	2.60	6,200	1.07	17,248
Island Park Rd	Park Rd	US 41	1.60	10,300	1.09	17,963
Kelly Rd	McGregor Blvd	San Carlos Blvd	1.20	3,700	1.23	5,461
Kelly Rd	San Carlos Blvd	Pine Ridge Rd	1.20	1,600	1.23	2,362
Laurel Dr	Bus 41	Breeze Dr	1.90	8,100	1.13	17,391
Lee Rd	San Carlos Blvd	Alico Rd	1.50	6,400	1.17	11,232
Milwaukee Blvd	Homestead Rd	Columbus Blvd	3.60	200	1.08	778
Nalle Grade Rd	Slater Rd	Nalle Rd	3.00	1,100	1.13	3,729
Nalle Rd	SR 78	Nalle Grade Rd	2.70	2,700	1.13	8,238
Orange Grove Blvd	Club Entr.	4 Lane End	1.00	8,900	1.12	9,968
Orange Grove Blvd	4 Lane End	Hancock B Pky	0.90	8,900	1.12	8,971
Orange Grove Blvd	Hancock B Pkwy	Pondella Rd	1.00	8,100	1.12	9,072
Park Meadows Dr	Summerlin Rd	US 41	0.80	4,300	1.09	3,750
Pine Ridge Rd	San Carlos Blvd	Summerlin Rd	1.00	8,700	1.07	9,309
Pine Ridge Rd	Summerlin Rd	Gladiolus Dr	1.70	3,300	1.07	6,003
Pine Ridge Rd	Gladiolus Dr	McGregor Blvd	0.40	3,300	1.07	1,412
Plantation Rd	Daniels Pkwy	Idlewild St	2.50	6,100	1.21	18,453
Richmond Ave	Leeland Heights	E 9th St	2.10	1,000	1.08	2,268
Richmond Ave	E 9th St	E 12th St	0.80	600	1.08	518
Richmond Ave	E 12th St	Greenbriar Blvd	2.60	600	1.08	1,685
South Pointe Blvd	Cypress Lake Dr	College Pkwy	0.80	9,900	1.07	8,474
Staley Rd	Luckett Rd	Orange River Blv	1.60	2,400	1.10	4,224
East Terry St	Old 41	Morton Ave	1.80	6,700	1.25	15,075
Tice St	SR 80	Ortiz Ave	0.60	3,000	1.10	1,980
Tice St	Ortiz Ave	Staley Rd	2.30	2,200	1.10	5,566
Whiskey Creek Dr	College Pkwy	Sautern Dr	0.90	6,500	1.01	5,909
Whiskey Creek Dr	Sautern Dr	McGregor Blvd	0.90	2,900	1.01	2,636
W. 12th St	Sunshine Blvd	Richmond Ave	2.40	900	1.08	2,333
Subtotal, Lee County Collectors			69.40			320,634
Mc Gregor Blvd	Colonial	Hill	0.90	13,900	1.13	14,136
Mc Gregor Blvd	Hill	1st	1.90	12,700	1.13	27,267
Mc Gregor Blvd	1st	US 41	0.60	12,799	1.13	8,678
Palm Beach Blvd	Bus 41	Prospect	3.00	25,500	1.13	86,445
MLK Blvd (SR 82)	US 41	Cranford	0.90	12,000	1.12	12,096
Edison Ave	US 41	Highland	1.90	11,500	1.12	24,472
Hanson	US 41	Fowler	0.60	7,500	1.12	5,040
Hanson	Fowler	Evans	0.10	7,500	1.12	840
Hanson	Evans	Metro	0.50	12,000	1.12	6,720

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Central	Winkler	Hanson	1.30	6,000	1.12	8,736
Central	Hanson	Edison	0.50	6,000	1.12	3,360
Broadway	Edison	MLK	0.50	6,000	1.12	3,360
Evans	Colonial	Winkler	0.50	6,000	1.12	3,360
Evans	Winkler	Hanson	1.30	6,000	1.12	8,736
Evans	Hanson	Edison	0.70	6,000	1.12	4,704
Winkler	US 41	Fowler	0.60	10,800	1.06	6,869
Winkler	Fowler	Evans	0.10	10,800	1.06	1,145
Winkler	Evans	Metro	0.50	10,800	1.06	5,724
Winkler	Metro	Challenger	1.30	10,800	1.13	15,865
Winkler	Challenger	Colonial	0.80	12,900	1.13	11,662
Winkler Ext	Colonial	Challenger	0.30	6,000	1.13	2,034
Winkler Ext	Challenger	Six Mile	0.40	6,000	1.13	2,712
Subtotal, Fort Myers			19.20			263,961
Andalusa Blvd	SR 78	Tropicana	0.30	3,710	1.15	1,280
Andalusa Blvd	Tropicana	Diplomat	1.20	2,590	1.15	3,574
Beach Pkwy	Chiquita	Surfside	1.90	3,610	1.10	7,545
Cape Coral Pkwy	Del Prado	Leonard	0.50	27,400	1.08	14,796
Cape Coral Pkwy	Coronado	Leonard	0.30	28,700	1.08	9,299
Cape Coral Pkwy	Palm Tree	Coronado	0.50	34,800	1.10	19,140
Cape Coral Pkwy	Santa Barbara	Palm Tree	0.50	36,600	1.10	20,130
Cape Coral Pkwy	Pelican	Santa Barbara	0.50	29,100	1.10	16,005
Cape Coral Pkwy	Skyline	Pelican	0.50	24,800	1.10	13,640
Cape Coral Pkwy	Chiquita	Skyline	1.00	17,400	1.10	19,140
Cape Coral Pkwy	SW 25th	Chiquita	1.10	7,200	1.10	8,712
Chiquita Blvd	El Dorado	Cape Coral	1.00	6,645	1.10	7,310
Chiquita Blvd	Cape Coral	Beach	0.80	12,600	1.10	11,088
Chiquita Blvd	Beach	Savona	0.80	12,220	1.10	10,754
Chiquita Blvd	Savona	Gleason	0.60	14,100	1.10	9,306
Chiquita Blvd	Gleason	Miracle	1.00	11,715	1.06	12,418
Chiquita Blvd	Miracle	Trafalgar	1.00	9,540	1.06	10,112
Chiquita Blvd	Trafalgar	SR 78	1.00	9,655	1.06	10,234
Chiquita Blvd	SR 78	Tropicana	1.90	4,405	1.15	9,625
Coronado Pkwy	El Dorado	Cape Coral	0.70	10,920	1.10	8,408
Coronado Pkwy	Cape Coral	SE 47th	0.10	10,075	1.08	1,088
Coronado Pkwy	SE 47th	Vincennes	0.70	9,160	1.08	6,925
Coronado Pkwy	Vincennes	Del Prado	0.60	12,285	1.08	7,961
Country Club	Palm Tree	SE 9th	1.00	6,500	1.08	7,020
Country Club	SE 9th	Wildwood	0.80	7,770	1.08	6,713
Country Club	Wildwood	Archer	1.10	11,985	1.08	14,238
Country Club	Archer	Veterans	0.30	12,765	1.06	4,059
Country Club	Veterans	Nicholas	1.70	13,265	1.06	23,904
Country Club	Nicholas	SE 10th	0.30	16,090	1.08	5,213

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Country Club Blvd	SE 10th	Viscaya	0.30	12,250	1.08	3,969
Cultural Park	SR 78	Hancock	0.50	4,095	1.11	2,273
Cultural Park	Hancock	SE 5th	0.60	5,365	1.11	3,573
Diplomat Pkwy	Nelson	Del Prado	3.00	3,215	1.15	11,092
Gleason Pkwy	Pelican	Skyline	0.60	12,925	1.06	8,220
Gleason Pkwy	Santa Barbara	Pelican	0.50	19,650	1.06	10,415
Gleason Pkwy	Skyline	Chiquita	1.00	8,520	1.06	9,031
Hancock Br Pkwy	Del Prado	Cultural	1.10	12,755	1.11	15,574
Hancock Bridge	Cultural	Santa Barbara	1.00	6,625	1.11	7,354
Kismet Pkwy	Del Prado	NE 24th	1.00	2,920	1.15	3,358
Miracle Pkwy	Surfside	Chiquita	1.00	1,635	1.06	1,733
Mohawk Pkwy	Pelican	Skyline	0.50	2,600	1.10	1,430
Mohawk Pkwy	Skyline	Chiquita	1.00	2,350	1.10	2,585
Nicholas Pkwy	Santa Barbara	SR78	1.40	5,740	1.06	8,518
Nicholas Pkwy	Country Club	Santa Barbara	1.20	10,885	1.06	13,846
Palm Tree Blvd	Cape Coral	SE 47th	0.10	9,070	1.08	980
Palm Tree Blvd	Country Club	Wildwood	1.30	6,865	1.08	9,638
Palm Tree Blvd	SE 47th	Country Club	0.20	7,800	1.08	1,685
Pelican Blvd	Cape Coral	Mohawk	1.10	5,625	1.10	6,806
Pelican Blvd	Mohawk	Gleason	1.00	4,530	1.10	4,983
Pelican Blvd	Cape Coral	El Dorado	0.90	5,780	1.10	5,722
Santa Barbara Blvd	Cape Coral	Gleason	2.10	11,690	1.10	27,004
Santa Barbara Blvd	Gleason	Kamal	0.50	27,105	1.06	14,366
Santa Barbara Blvd	Trafalgar	Nicholas	0.70	19,370	1.06	14,373
Santa Barbara Blvd	Veterans	Trafalgar	1.10	26,295	1.06	30,660
Santa Barbara Blvd	Kamal	Veterans	0.50	26,575	1.06	14,085
Santa Barbara Blvd	Hancock	SR78	0.10	9,145	1.06	969
Santa Barbara Blvd	Nicholas	Hancock	1.30	18,095	1.06	24,935
Savona Pkwy	Aqualinda	Chiquita	0.70	1,725	1.10	1,328
SE 24 Ave	Viscaya	Hancock	1.10	6,440	1.07	7,580
SE 47 Ter	Del Prado	SE 17th	0.20	3,100	1.10	682
SE 47 Ter	Palm Tree	SE 9th	0.70	11,200	1.10	8,624
SE 47 Ter	SE 9th	Vincennes	0.20	9,100	1.10	2,002
SE 47 Ter	Vincennes	Del Prado	0.40	7,100	1.10	3,124
Skyline Blvd	Trafalgar	SR78	1.40	5,295	1.06	7,858
Skyline Blvd	Cape Coral	Mohawk	1.10	8,445	1.10	10,218
Skyline Blvd	El Dorado	Cape Coral	0.90	7,040	1.10	6,970
Skyline Blvd	Mohawk	Gleason	1.00	8,430	1.10	9,273
Skyline Blvd	Gleason	Miracle	1.00	5,885	1.06	6,238
Skyline Blvd	Miracle	Trafalgar	1.10	7,745	1.06	9,031
Trafalgar Pkwy	Santa Barbara	Skyline	1.10	11,870	1.06	13,840
Trafalgar Pkwy	Skyline	Chiquita	1.00	6,645	1.06	7,044
Trafalgar Pkwyd.	Chiquita	Surfside	1.00	3,045	1.06	3,228
Vincennes Blvd	Cape Coral	SE 47th	0.10	5,120	1.10	563

Roadway	From	To	Miles	1999 AADT	Peak Season Factor	Peak Season VMT
Vincennes Blvd	SE 47th	Coronado	0.50	6,225	1.10	3,424
Viscaya Pkwy	Del Prado	SE 24th	1.00	11,450	1.08	12,366
Viscaya Pkwy	SE 9th	Del Prado	0.60	14,650	1.08	9,493
Wildwood Pkwy	Palm Tree	Country Club	0.40	4,640	1.08	2,004
Subtotal, Cape Coral Arterials and Collectors			64.80			683,704
Total			563.60			9,297,448

Source: Lee County traffic count program; lengths of the roadways were obtained using the "Streets '98" mapping program when they were not available from the agency that maintains the facility; AADT is annual average daily trips; peak season factor from *1999 Lee County Annual Traffic Count Report* based on nearby permanent count station; City of Fort Myers information from inspection of facilities not included in the Lee County data and discussions with City staff; Cape Coral 1999 counts from web site (http://www.capecoral.net/citydept/pw/transport/traf-daily.htm).