

# Lake County, Florida

## Impact Fee Update for Transportation, Parks, Libraries and Fire Rescue



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## EXECUTIVE SUMMARY

The purpose of this project is to assist Lake County in updating its impact fees for transportation, parks and recreation, libraries and fire rescue facilities. The update of the County's other impact fee, for educational facilities, is not included in this project.

The County's transportation impact fees were last updated in 2002 (an update prepared in 2007 was not adopted), based on a 2001 study by Tindale-Oliver & Associates. The Lake County Board of County Commissioners suspended the transportation impact fees for one year effective March 2, 2010. The parks, libraries and fire rescue fees were last updated in 2003, based on a 2003 study by Henderson Young & Company.

### Changes in Approach

The County's basic impact fee methodology has remained essentially the same over time for the fees updated in this study. The methodology used in the County's impact fees is commonly referred to as a standards-based approach, which bases the fee on the existing system-wide level of service. This approach is the most commonly-used methodology in Florida and elsewhere. This update provides an opportunity to review the cost assumptions used in previous impact fee studies and incorporate several changes in to the calculation of the impact fees while retaining the overall approach. The major changes in fee-specific methodologies and data inputs from the previous impact fee updates are summarized as follows:

**Simplified and Consistent Land Use Categories.** A major change recommended in this update is the simplification of the list of land uses included in the County's transportation impact fee schedule. The County's current transportation impact fee schedule has 84 very detailed categories, and this update recommends consolidating them down to 13 more general categories. The current and proposed categories are listed in Table 1. There are several advantages to having a smaller number of broader, more generalized categories:

- (1) It will make it easier to classify land uses, since one would not have to determine, for example, if a proposed restaurant is a quality restaurant or a high-turnover restaurant – all restaurants would be classified in the broad retail/commercial category. This category is based on the characteristics of shopping centers, which by their nature contain a mix of land uses.
- (2) It will avoid the controversies that can arise over very high road impact fees for the high-trip-generation land uses, such as convenience stores, that generate little additional revenue for the County because they are such a small part of total retail square footage.
- (3) It avoids the problem that arises when relatively high trip generation uses locate in shopping centers, where they should qualify for the much lower general retail rate, compared to the much higher rates they would be charged if they were a stand-alone use.

## Executive Summary

- (4) There will be fewer issues with change of use, since the more general recommended categories already encompass a broader range of uses.

The proposed residential land use categories for parks, library and fire rescue impact fees include three single-family house size tiers, which is consistent with the approach used for the County's transportation impact fees. The fire rescue impact fee nonresidential categories only need to be modified slightly in order to be consistent with the proposed transportation fee categories.

**Table 1. Proposed and Existing Land Use Categories**

Proposed Categories	Existing Categories
Single-Family Detached	Single-Family Detached
Less than 1,500 sf	Less than 1,500 sf
1,501 to 2,499 sf	1,501 to 2,499 sf
2,500 sf or greater	2,500 sf or greater
Multi-Family	Multi-Family (1-2 Stories)
	Multi-Family (3+ Stories)
Mobile Home Park*	Mobile Home**
	Mobile Home Park
Active Adult Community	Active Adult Community
Lodging	Hotel
	Motel
	Campground/RV Park
Public/Institutional	Assisted Care Living Facility
	General Recreation/County Park
	Elementary School
	Middle School
	High School
	Junior/Community College
	University/College
	Church
	Day Care Center
	Cemetery
	Library
	Hospital
	Nursing Home
	Airport Hanger
	Government Complex-Municipal
	Government Complex-County
	Fire Station
Office	Office
	10,000 sf or less
	10,001 - 30,000 sf
	30,001 - 100,000 sf
	100,001 - 400,000 sf
	Over 400,000 sf
	Single-Tenant Office
	Research Center
	Medical Office/Clinic
	Office Park
	Business Park

**Table 1 Continued.**

Proposed Categories	Existing Categories
Retail/Commercial	Retail 50,000 sf or less 50,001 - 200,000 sf 200,001 - 600,000 sf Over 600,000 sf Movie Theater w/Matinee Building Materials and Lumber Discount Superstore Discount Superstore (under 120k sf) Home Improvement Superstore Specialty Retail Hardware/Paint Store Wholesale Nursery New/Used Auto Sales Supermarket Convenience Store w/ Gas Pump Pharmacy/Drug Store Furniture Store Bank/Savings Drive-In Bank Quality Restaurant High Turnover Restaurant Fast Food Restaurant w/Drive-Thru Bar/Lounge/Drinking Place Quick Lube Auto Repair or Body Shop Gas/Service Station Self Serve Car Wash Convenience Store w/ Gas and Food Stand-Alone Meeting Facility Veterinarian Clinic Golf Course Amusement and Recreational Svcs Marina Horse Training Racquet Club/Health Spa Bowling Alley Health Club/Dance Studio
Industrial/Manufacturing	General Light Industrial General Heavy Industrial Industrial Park Manufacturing Utilities Building
Warehouse	Warehouse High-Cube Warehouse
Mini-Warehouse	Mini-Warehouse

\* Mobile home/manufactured home on a single-family lot would be charged the single-family, detached rate based on its square footage for all impact fees addressed in this study.

\*\* Mobile home/manufactured home on a single-family lot charged the single-family detached rate based on its square footage only for transportation impact fees; for parks, library and fire rescue fees, the fees are the same as for mobile home park.

## Executive Summary

**Existing Land Use Data.** Existing land use data are critical to the determination of the existing level of service. In this update, residential units and nonresidential square footage are taken directly from the Lake County Appraiser's records. The last update did not measure the level of service using existing land use data; instead, it relied on population to measure the LOS for parks, library and fire impact fees. The previous approach for transportation used transportation models to determine travel demand factors.

**Travel Demand Calibration.** An inventory of the County's major roadway system is included in this update. The inventory is used to examine trip length assumptions and determine if trip lengths by land use from the previous study match existing vehicle-miles of travel (VMT) on the major roadway system. The travel demand factors for individual land use categories in this update are calibrated to ensure that they are consistent with actual observed travel on the County's major roadway system.

**Annualized Fire Rescue Impact Fee Costs.** The methodology used by Henderson Young in the 2003 fire rescue study divided the cost of buildings and equipment by the useful life of the improvement (40 years for stations, 3 to 10 years for vehicles) in order to determine an annual cost. This study bases the updated impact fees on the initial capital cost, rather than on annualized costs.

**Revenue Credits.** This study examines future and historical growth-related capital funding plans for each impact fee facility and provides a credit for the portion of the costs that will be funded through dedicated local and state tax revenue or grants. This study also includes an analysis of several of the road funding recommendations of the Transportation Alternative Funding Task Force (TAF'TF) and their potential affect on the maximum transportation impact fees that could be charged by the County.

**Debt Credits.** New development should not have to pay for its facilities through impact fees, while also paying for the same type of facilities that are serving existing development. Thus, new development's contributions to retire debt on existing facilities that are serving existing development amount to a form of double payment, and the fees should be reduced to avoid this. As a result, this study provides a credit for outstanding debt on existing facilities that serve existing development. This update includes a debt credit for the parks and library impact fees. The library debt credit applies only to the fee charged in Leesburg, since that municipality has outstanding debt related to the new library facility. The result is that Leesburg should cease charging a library impact fee.

**Administrative Fee Review.** Currently, the County charges an administrative fee of 3% of the impact fee due up to a maximum of \$100 for each permit. Since total fees for most land uses are higher than \$3,000, the fee is for all practical purposes a flat \$100 per permit. Based on a review of administrative costs over the past three years, the County could increase the administrative fee to a flat \$142 per permit reviewed.

**Inflation Indexing.** This study includes an overview of major indices that could be used to automatically adjust the impact fee categories in years in which the County does not undertake a comprehensive review of the impact fees.

## Potential Impact Fee Summary

The following table compares the current and potential impact fees calculated in this report for typical residential and nonresidential land use types. Transportation fees could be doubled for most land use categories from the current, suspended fee levels, although much or all of the increase could be offset by implementation of the funding recommendations of the Transportation Alternative Funding Task Force. Park and library fees could also be increased significantly. Fire rescue impact fees should be reduced for most land use categories, particularly for retail and office uses.

**Table 2. Current and Potential Fee Summary**

Land Use Type	Unit	Road	Parks	Library	Fire	Total
<b>Potential Fees (100%)</b>						
Single-Family	Dwelling	\$4,606	\$551	\$441	\$375	\$5,973
Multi-Family	Dwelling	\$2,126	\$424	\$331	\$218	\$3,099
Mobile Home Park	Space	\$1,331	\$441	\$423	\$660	\$2,855
Lodging	Room	\$2,238	\$0	\$0	\$195	\$2,433
Retail/Commercial	1,000 sf	\$5,349	\$0	\$0	\$390	\$5,739
Office	1,000 sf	\$4,475	\$0	\$0	\$135	\$4,610
Industrial/Manufacturing	1,000 sf	\$2,553	\$0	\$0	\$139	\$2,692
Warehouse	1,000 sf	\$2,379	\$0	\$0	\$161	\$2,540
Public/Institutional	1,000 sf	\$1,404	\$0	\$0	\$304	\$1,708
<b>Adopted Fee Schedule</b>						
Single-Family	Dwelling	\$2,189	\$222	\$191	\$390	\$2,992
Multi-Family	Dwelling	\$1,408	\$171	\$146	\$244	\$1,969
Mobile Home Park	Space	\$859	\$177	\$152	\$152	\$1,340
Lodging	Room	\$1,110	\$0	\$0	\$651	\$1,761
Retail/Commercial	1,000 sf	\$2,177	\$0	\$0	\$1,301	\$3,478
Office	1,000 sf	\$2,110	\$0	\$0	\$1,301	\$3,411
Industrial/Manufacturing	1,000 sf	\$1,182	\$0	\$0	\$104	\$1,286
Warehouse	1,000 sf	\$1,535	\$0	\$0	\$76	\$1,611
Public/Institutional	1,000 sf	\$1,322	\$0	\$0	\$361	\$1,683
<b>Change in Fees</b>						
Single-Family	Dwelling	\$2,417	\$329	\$250	-\$15	\$2,981
Multi-Family	Dwelling	\$718	\$253	\$185	-\$26	\$1,130
Mobile Home Park	Space	\$472	\$264	\$271	\$508	\$1,515
Lodging	Room	\$1,128	\$0	\$0	-\$456	\$672
Retail/Commercial	1,000 sf	\$3,172	\$0	\$0	-\$911	\$2,261
Office	1,000 sf	\$2,365	\$0	\$0	-\$1,166	\$1,199
Industrial/Manufacturing	1,000 sf	\$1,371	\$0	\$0	\$35	\$1,406
Warehouse	1,000 sf	\$844	\$0	\$0	\$85	\$929
Public/Institutional	1,000 sf	\$82	\$0	\$0	-\$57	\$25

*Source:* Potential road fees from Table 23; potential park fees from Table 44; potential library fees from Table 57; potential fire rescue fees from Table 70; existing fees from Lake County impact fee schedule (road fees suspended from March 2, 2010 to March 1, 2011), single-family based on 1,500-2,499 sq. ft., multi-family based on 1 to 2 story building, lodging fee based on average of hotel and motel fees, retail based on 50,000-200,000 sq. ft., office based on 100,001-400,000 sq. ft., public/institutional based on church.

## INTRODUCTION

Impact fees are a way for local governments to require new developments to pay a proportionate share of the infrastructure costs they impose on the community. In contrast to traditional “negotiated” developer exactions, impact fees are charges that are assessed on new development using a standard formula based on objective characteristics, such as the number and type of dwelling units constructed. The fees are one-time, up-front charges, with the payment usually made at the time of building permit issuance. Essentially, impact fees require that each new development project pay its pro-rata share of the cost of new capital facilities required to serve that development.

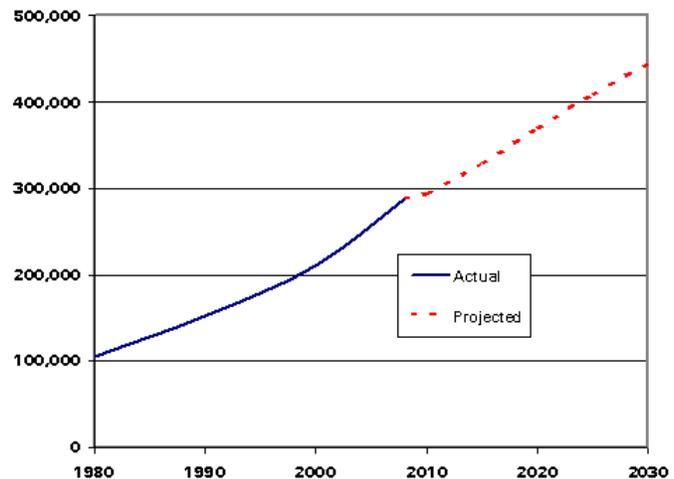
The purpose of this project is to assist Lake County in updating its impact fees for transportation, parks and recreation, libraries and fire rescue facilities. The update of the County’s educational facilities impact fee is not included in this project.

## Background

The County’s transportation impact fees were last updated in 2002 (an update prepared in 2007 was not adopted), based on a 2001 study by Tindale-Oliver & Associates. However, the Lake County Board of County Commissioners suspended the transportation impact fee effective March 2, 2010. The parks, libraries and fire rescue fees were last updated in 2003, based on a 2003 study by Henderson Young & Company.

Impact fees are most appropriate for jurisdictions experiencing rapid growth. Lake County has been experiencing significant growth over the past two decades. The population of the county has almost doubled in size since 1990. The County’s population growth since 1980 is illustrated in Figure 1. While growth has recently slowed in Lake County as in the rest of Florida during the current housing and economic downturn, long-term projections prepared by the University of Florida’s Bureau of Business and Economic Research indicate that the county’s growth will soon return to close to its historic levels. The Bureau projects that the county will add about 6,700 new residents annually from 2008 to 2020. From 2008 to 2030, the Bureau projects that the county population will increase from an estimated 288,379 to 443,982, as illustrated in Figure 1.<sup>1</sup>

**Figure 1. Lake County Population, 1980-2030**



The recent housing and economic downturn has resulted in significantly reduced impact fee revenues for the County. Since FY 2004-2005, total impact fee revenues have decreased from \$46.7

<sup>1</sup> University of Florida, Bureau of Economic and Business Research, “Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties, 2008-2030,” *Florida Population Studies*, Volume 42, Bulletin 154, June 2009.

million to \$10.4 million, as shown in Table 3. Revenues will be even lower in FY 2009-2010, since transportation impact fees have been suspended and were only being collected for the first five months of the fiscal year.

**Table 3. Impact Fee Revenue, FY 2005-2009**

Type of Fee	FY 2004/5	FY 2005/6	FY 2006/7	FY 2007/8	FY 2008/9
Transportation	\$18,342,969	\$13,395,627	\$11,995,822	\$8,043,836	\$3,555,125
Schools	\$25,253,737	\$20,567,672	\$15,974,889	\$9,909,679	\$6,316,024
Parks	\$745,179	\$449,540	\$206,317	\$96,040	\$45,283
Libraries	\$1,077,652	\$911,092	\$516,233	\$233,349	\$102,642
Fire Rescue	\$1,250,142	\$927,145	\$1,126,281	\$967,693	\$388,127
<b>Total</b>	<b>\$46,669,678</b>	<b>\$36,251,075</b>	<b>\$29,819,542</b>	<b>\$19,250,597</b>	<b>\$10,407,201</b>

Note: Fiscal year ends September 30.

Source: Lake County Department of Fiscal and Administrative Services, December 16, 2009.

## 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 regulate land development in order to protect the health, safety and welfare of the community. The courts have developed guidelines for constitutionally-valid impact fees, based on "rational nexus" standards. The standards essentially require that the fees must be proportional to the need for additional infrastructure created by the new development, and must be spent in such a way as to provide that same type of infrastructure to benefit new development. A Florida district court of appeals described the dual rational nexus test in the 1983 *Hollywood, Inc.* case as follows, and this language was quoted and followed by the Florida Supreme Court in its 1991 *St. Johns County* decision:

*In order to satisfy these requirements, the local government must demonstrate a reasonable connection, or rational nexus, between the need for additional capital facilities and the growth in population generated by the subdivision. In addition, the government must show a reasonable connection, or rational nexus, between the expenditures of the funds collected and the benefits accruing to the subdivision. In order to satisfy this latter requirement, the ordinance must specifically earmark the funds collected for use in acquiring capital facilities to benefit the new residents.<sup>2</sup>*

## Florida Statutes

The 2006 Florida Legislature passed Senate Bill 1194, which establishes certain requirements for impact fees in Florida. The bill, which became effective on June 14, 2006, created a new Section 163.31801, Florida Statutes. After two amendments that became effective in 2009, it now reads as follows:

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

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

<sup>2</sup> *Hollywood, Inc. v. Broward County*, 431 So. 2d 606, 611-12 (Fla. 4th DCA), review denied, 440 So. 2d 352 (Fla. 1983), quoted and followed in *St. Johns County v. Northeast Florida Builders Ass'n*, 583 So. 2d 635, 637 (Fla. 1991).

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*(2) The Legislature finds that impact fees are an important source of revenue for a local government to use in funding the infrastructure necessitated by new growth. The Legislature further finds that impact fees are an outgrowth of the home rule power of a local government to provide certain services within its jurisdiction. Due to the growth of impact fee collections and local governments' reliance on impact fees, it is the intent of the Legislature to ensure that, when a county or municipality adopts an impact fee by ordinance or a special district adopts an impact fee by resolution, the governing authority complies with this section.*

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

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

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

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

*(d) Require that notice be provided no less than 90 days before the effective date of an ordinance or resolution imposing a new or amended impact fee.*

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

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

Other provisions relating to impact fees are scattered about in the Florida Statutes. For example, public schools are exempted from the payment of impact fees in Section 1013.371(1)(a).

### General Impact Fee Principles

One of the most fundamental principles of impact fees, rooted in both case law and norms of equity, is that impact fees should not charge new development for a higher level of service than is provided to existing development. While impact fees can be based on a higher level of service than the one existing at the time of the adoption or update of the fees, two things are required if this is done. First, another source of funding other than impact fees must be identified and committed to fund the capacity deficiency created by the higher level of service. Second, the impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the

capacity deficiency for existing development. In order to avoid these complications, the general practice is to base the impact fees on the existing level of service.

A corollary principle is that new development should not have to pay more than its proportionate share when multiple sources of payment are considered. As noted above, if impact fees are based on a higher-than-existing level of service, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that are counted in the existing level of service will be retired, in part, by revenues generated from new development. Given that new development will pay impact fees to provide the existing level of service for itself, the fact that new development may also be paying for the facilities that provide that level of service for existing development could amount to paying for more than its proportionate share. Consequently, impact fees should be reduced to account for future payments that will retire outstanding debt on existing facilities.

The issue is less clear-cut when it comes to other types of revenue that may be used to make capacity-expanding capital improvements of the same type being funded by impact fees. Arguably, no credit is warranted in most cases, since, while new development may contribute toward such funding, so does existing development, and both existing and new development benefit from the higher level of service that the additional funding makes possible. Impact fee studies in Florida, however, have traditionally given credit for the portion of dedicated revenues, such as gasoline taxes, that are used for capacity-expanding improvements. This study will provide revenue credits for these types of dedicated revenues.

Credit has also sometimes been provided for outside grants for capacity improvements that can reasonably be anticipated in the future. In addition to the argument presented above (i.e., grants raise the level of service and benefit new development as well as existing development), two additional arguments can be made against applying credit for grants. First, new development in a community does not directly pay for State and Federal grants in the same way they pay local gasoline and property taxes. Second, future grant funding is far more uncertain than dedicated revenue streams. On the other hand, local governments have less discretion about whether to spend grant funding on capacity-expanding capital improvements. In this study, credit will be provided for anticipated future Federal and State grant funding based on recent grant funding history.

## Level of Service

The role of level of service (LOS) in impact fee analysis is central, but often misunderstood. The previous discussion makes clear the fundamental importance of the concept of level of service in impact fee analysis. However, it is possible to address these issues without specifying a LOS standard in terms of an explicit ratio, such as acres of parkland per 1,000 residents. In reality, the LOS is a set of capital facilities, including land, buildings and equipment, that provides service to a given amount of development. Explicit LOS standards may over-simplify this complex relationship by emphasizing one element of the capital facilities, such as acres of land for parks or square feet of library buildings (or, in some cases a characteristic that is not directly related to capital facilities, such as officers for law enforcement).

## Introduction

An alternative is to calculate the level of service in terms of the replacement cost of the capital facilities provided per unit of development served. In fact, this is what impact fee calculations generally do. The choice of an explicit LOS standard to represent this relationship is generally unnecessary, and can create undesirable policy outcomes. For example, a parks and recreation system represents a capital investment in land, buildings and other improvements that provides service to residents. Reducing this relationship to a simple ratio of acres of land to population does provide a concrete, measurable indicator. However, it may unintentionally put undue emphasis on the acquisition of park land, at the expense of the provision of recreational facilities and improvements. The expansion of a park system may involve periods of extensive land acquisition, followed by periods that focus on the development of land with park improvements. Adoption of a LOS standard expressed in acres implies that only additional land acquisition can enhance the level of service. In reality, the level of service provided by a park system can be enhanced by improvements to existing land as well as by acquisition of additional land.

In this impact fee update, the fees are based, for the most part, on the existing levels of service. However, the levels of service do not need to be expressed in the form of simplistic ratios. Nor do explicit LOS standards need to be incorporated into the *Comprehensive Plan* in order for the impact fees to be consistent with the *Plan*.

Of the facilities under consideration in this study, transportation and parks are subject to State concurrency requirements. The transportation impact fee LOS standard is not identical to, but neither is it inconsistent with, the County's adopted LOS for transportation concurrency purposes. The County's adopted level of service is set forth in the Capital Improvements Element of the *Lake County Comprehensive Plan*, which calls for the County to maintain a peak hour LOS C for all collectors not within a municipality and its one mile surrounding area or a designated urban or urban expansion area.<sup>3</sup> The County is currently updating the comprehensive plan, and the updated plan calls for County and State arterial and collectors to operate at no worse than LOS C in rural area and LOS D in urbanized and urbanizing areas.<sup>4</sup> While such a standard is appropriate for measuring the functioning of a specific roadway facility, it is not appropriate as the basis of an impact fee system that uses a consumption-based methodology. The transportation impact fees are based on a system-wide level of service, which is a system-wide ratio of capacity to demand. Like the proposed concurrency standard, system-wide capacity is based on a mix of LOS C and LOS D.

The adopted park level of service in the *Lake County Comprehensive Plan* is 1.5 acres per 1,000 residents.<sup>5</sup> The draft plan calls for increasing the level of service standard to 4 acres per 1,000 residents of the unincorporated area.<sup>6</sup> The park impact fees are not based on any explicit ratio of acres to population, but are instead based on the existing LOS, expressed in terms of the ratio of the replacement value of existing parks and park improvements to existing residential development.

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<sup>3</sup> Lake County, *Lake County 1991 Comprehensive Plan*, Policy 10-7.3.

<sup>4</sup> Lake County, *Draft 2030 Comprehensive Plan*, Policy II-1-1.7.

<sup>5</sup> Lake County, *Lake County 1991 Comprehensive Plan*, Policy 10-7.3.

<sup>6</sup> Lake County, *Draft 2030 Comprehensive Plan*, Policy II-1-1.5.

## TRANSPORTATION

The Lake County transportation impact fee is charged county-wide, including within the municipalities. The impact fee has traditionally been the County's primary funding source for expanding capacity. The current transportation impact fee was suspended for one year by the Lake County Board of County Commissioners effective March 2, 2010. Before it was suspended, the impact fee schedule was adopted in 2002 based on a 2001 study by Tindale-Oliver & Associates, Inc. (referred to here as the 2001 study).<sup>7</sup> However, the adopted fee schedule included an across-the-board reduction for all land uses of 36.6% of the full potential fee calculated in the 2001 study. Reportedly, this had the same effect as basing the fees on the County road cost per lane-mile, rather than a weighted average of County and State road costs. A 2007 update was prepared, again by Tindale-Oliver, but it was not adopted.<sup>8</sup> The purpose of this section of the report is to update Lake County's transportation impact fee schedule.

The updated impact fee schedule is based on the most recent road cost data available. In addition, the study examines potential impact fee credits related to road funding recommendations of the Transportation Alternative Funding Task Force. In considering these funding options, this study explores how each of the several relevant recommendations would affect the impact fee through the credit calculation.

### Service Areas

There are two kinds of geographic areas in impact fee systems: service areas and benefit districts. A service area, also sometimes called an assessment district, is an area that is served by a defined group of capital facilities and is subject to a uniform impact fee schedule. A benefit district is an area within which fees collected are earmarked to be spent.

The County's transportation impact fee service area is the entire county, including both the unincorporated area and the municipalities. The municipalities collect the impact fee through interlocal agreements with the County. All areas of the county are subject to the same impact fee schedule.

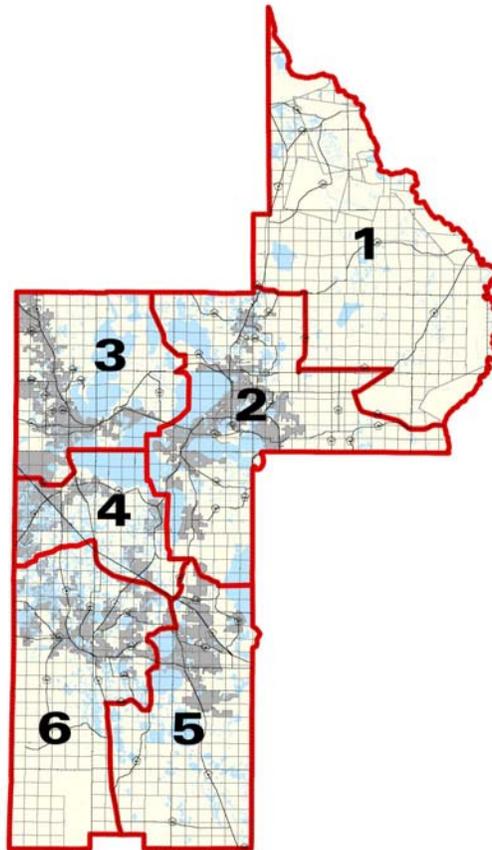
The County currently has six transportation impact fee benefit districts. Fees collected in each district are earmarked to be spent within that same district. The current transportation benefit districts are illustrated in Figure 2. One option to consider in this update would be reducing the number of transportation impact fee benefit districts from six to three, as was recommended in the 2007 study. Three districts would better align with current and anticipated future city limits and would provide the County with additional flexibility in spending limited impact fee revenues.

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<sup>7</sup> Tindale-Oliver & Associates, Inc., *Lake County Transportation Impact Fee Update Study*, December 2001.

<sup>8</sup> Tindale-Oliver & Associates, Inc., *Lake County Transportation Impact Fee Update Study*, July 2007.

**Figure 2. Transportation Impact Fee Benefit Districts**



County transportation impact fee revenues collected in each road impact fee district for the past five years are shown in Table 4. The decline in impact fee revenue in each district reflects the overall decline in housing construction and nonresidential construction. The fee revenue available for projects in District #1, #4 and #6 has been consistently lower than revenue in the other three districts over the past five years. Reducing the number of districts would make available larger pools of revenue for projects in each district and provide the County with more flexibility in addressing transportation needs, particularly in the context of declining revenues.

**Table 4. Transportation Impact Fee Revenue, FY 2005-2009**

District	FY 2004/5	FY 2005/6	FY 2006/7	FY 2007/8	FY 2008/9
District #1	\$691,562	\$141,335	\$209,222	\$172,021	\$66,337
District #2	\$4,144,919	\$4,085,405	\$3,175,031	\$2,240,888	\$759,268
District #3	\$4,160,574	\$3,353,754	\$3,013,398	\$2,720,849	\$383,569
District #4	\$971,327	\$831,538	\$214,652	\$127,509	\$155,056
District #5	\$6,305,599	\$3,660,729	\$3,897,042	\$2,357,761	\$1,820,419
District #6	\$2,068,988	\$1,322,867	\$1,486,478	\$424,809	\$370,477
<b>Total</b>	<b>\$18,342,969</b>	<b>\$13,395,627</b>	<b>\$11,995,822</b>	<b>\$8,043,836</b>	<b>\$3,555,125</b>

*Note:* Fiscal year ends September 30.

*Source:* Lake County Department of Fiscal and Administrative Services, December 16, 2009.

## Major Roadway System

A transportation impact fee program should include a clear definition of the major roadway system that is to be funded with impact fees. Highland County’s major roadway system consists of all arterials and collectors within the county boundaries, including County, State and municipal roads. Many road impact fees in Florida exclude interstates, but this is not an issue here, since there are no interstates within the county boundaries. However, the Florida Turnpike (SR 91) is a toll facility and is excluded from the impact fee system.

An inventory of the existing major roadway system was compiled from the County’s functional classification map; the inventory is presented in Table 79 in Appendix B. The major purpose of the inventory is to ensure that the travel demand factors for individual land uses used in the fee schedule are calibrated to the actual system-wide travel observed on the major roadway system. A secondary purpose is to ensure that the level of service (LOS) implicit in the standard consumption-based road impact fee methodology does not exceed the actual LOS on the major roadway system. The implicit LOS in the standard consumption-based methodology is a system-wide ratio of 1.0 between vehicle-miles of capacity (VMC) and vehicle-miles of travel (VMT) on the major roadway system.

### Calibration of Travel Demand Factors

The travel demand factors used in the impact fee schedule can be calibrated to actual VMT on the major roadway system. The calibration involves comparing expected VMT (the product of the VMT per unit by land use category used to develop the fee schedule and the quantity of existing land uses in the county) to the actual VMT observed on the major roadway system. The actual VMT is derived by multiplying the length of each road segment by the current volume and summing for the entire system (see Table 79, Appendix B).

The expected VMT is calculated by multiplying the existing quantities of each land use by the VMT per unit based on the previous travel demand factors by major land use category, as shown in Table 5.

**Table 5. Expected Vehicle-Miles of Travel**

Land Use Type	Unit	Existing Units	Trip Rate	New Trips	Trip Length	Daily VMT
Single-Family	Dwelling	90,962	8.50	100%	8.40	3,247,343
Multi-Family	Dwelling	19,654	6.33	100%	5.35	332,796
Mobile Home Park	Space	19,773	4.67	100%	4.60	212,382
Retail/Commercial	1,000 Sq. Ft.	18,648	42.94	62%	3.35	831,574
Office	1,000 Sq. Ft.	11,567	11.01	92%	6.92	405,389
Industrial	1,000 Sq. Ft.	6,355	3.82	92%	11.14	124,400
Warehousing	1,000 Sq. Ft.	4,900	3.56	92%	11.14	89,390
Public/Institutional	1,000 Sq. Ft.	8,457	7.58	89%	3.46	98,701
<b>Total Expected VMT</b>						<b>5,341,975</b>

Source: Existing residential units based on county-wide units from Table 74, Appendix A; county-wide nonresidential land use from Table 78, Appendix A; trip rate, % new trips and trip length derived primarily from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Study*, July 2007 (see notes to Table 21); daily VMT is one-half the product of existing units, trip rate, % new trips and trip length.

The expected system-wide VMT based on existing county-wide land uses and the travel demand factors in the fee schedule is somewhat higher than the estimated locally-generated VMT (total

system-wide VMT actually observed on the County’s major roadways, less estimated through traffic derived from the traffic model for roads that enter and exit the County), as shown in Table 6. As a result, the recommended trip lengths have been adjusted downward by the ratio of actual to expected VMT to ensure that new development is not being over-charged for its impact on the major roadway system.

**Table 6. Actual versus Expected Vehicle-Miles of Travel**

Actual Daily VMT on Major Road System	5,504,083
– Estimated Through Traffic	-528,423
<b>Locally-Generated VMT on Major Road System</b>	<b>4,975,660</b>
÷ Expected Locally-Generated VMT	5,341,975
<b>Ratio of Actual Daily VMT to Expected VMT</b>	<b>0.931</b>

*Source:* Actual VMT from Table 79, Appendix B; estimated through traffic from Table 83, Appendix E; expected VMT from Table 5.

### System-Wide Level of Service

The secondary purpose for compiling the existing major roadway inventory is to determine the current level of service for impact fee purposes. Oftentimes this is taken to be a segment-specific level of service, such as “all roadway segments shall operate at LOS C or better.” This is in fact the type of level-of-service standard that Lake County has adopted for concurrency purposes.

The level of service for concurrency purposes, however, is not necessarily appropriate as the level of service for impact fees. Most road impact fee systems in Florida, including Lake County’s, use the standard consumption-based methodology. This methodology essentially charges new development, for every vehicle-mile of travel (VMT) generated, the cost to add a vehicle-mile of capacity (VMC). In other words, the cost per VMT equals the cost per VMC, which implies a one-to-one ratio of VMC to VMT ( $\text{cost/VMT} = \text{cost/VMC} \times \text{VMC/VMT}$ , where  $\text{VMC/VMT} = 1$ ). This is conservative, because most roadway systems have more than one VMC for every VMT on a system-wide basis. A fee based on this standard is not sufficient to fund the improvements that would be required to maintain a segment-specific LOS. Consequently, a segment-specific level of service standard is not appropriate for impact fees calculated using a consumption-based methodology.

With the consumption-based methodology there are no deficiencies as long as the system-wide ratio on which the fees are based is no higher than the actual existing VMC/VMT ratio. The consumption-based methodology also offers flexibility in that it is not tied to a specific list of planned improvements determined by a transportation plan to be needed to maintain segment-specific LOS in the face of anticipated growth. Thus, revenues from a consumption-based fee can be used on any capacity-expanding improvement.

As mentioned in the introduction, the capacity of the major roadway system is based on the average annual daily capacities of each major road segment. The capacities used in this study are primarily based on a Level of Service D with some sections at LOS C or LOS E. The LOS for each section is based on the adopted County and municipal concurrency standards. There are no existing deficiencies on the existing major roadway system as a whole, as evidenced by a VMC/VMT ratio significantly greater than one calculated in Table 7.

**Table 7. Existing Major Roadway System Level of Service**

Existing Daily Vehicle-Miles of Capacity (VMC)	12,556,489
Existing Daily Vehicle-Miles of Travel (VMT)	5,504,083
<b>Existing VMC/VMT Ratio</b>	<b>2.28</b>

Source: VMC and VMT from Table 79, Appendix B.

## Cost per Service Unit

The transportation impact fee is designed to cover the cost of adding capacity to the major roadway system. Expanding the capacity of the County’s major roadway system is primarily accomplished by widening existing roadway cross-sections to accommodate additional through lanes and by building new roads. All of the normal components of a roadway expansion project are eligible for impact fee funding, including engineering and design, right-of-way acquisition, construction of new lanes, reconstruction of existing lanes and relocation of utilities where necessary as part of a widening project, and installation of sidewalks, street lighting and landscaping as part of an improvement project.

## County Road Cost per Lane-Mile

The cost estimates for County road projects are based on information provided by the County for the ongoing widening of CR 466 from two to four lanes, from the Sumter County line to US 27. The project was bid in 2009 and is under construction, with some right-of-way remaining to be acquired. While the project is a widening project, like most such projects it involves the complete reconstruction of the two existing lanes, and is therefore also reasonably reflective of the cost to construct a new four-lane-road. This project is somewhat unique because it is a joint project between a private developer (The Villages) and Lake County, with the County using its eminent domain powers to acquire right-of-way (the first time this has been done) and the developer bidding the actual construction. Because it is a developer-bid project, the construction may cost less than a comparable County-initiated improvement. Nevertheless, it is the most recent project and is reflective of current construction costs. The engineering/construction cost per mile of 4-lane road derived from the CR 466 project is summarized in Table 8.

**Table 8. County Road Construction Cost per Mile**

Engineering Cost	\$1,296,201
Construction Cost	\$7,484,727
Total Engineering/Construction Cost	\$8,780,928
÷ Length (miles)	2.06
<b>Eng./Construction Cost per Mile, 4-Lane Road</b>	<b>\$4,262,587</b>

Source: Lake County Department of Public Works, December 22, 2009.

This project also provides the most recent actual costs of ROW acquisition. While this is the first time the County has used eminent domain for this purpose, it is likely to be needed for other widening projects in the future. However, to take into account that there will be projects that do not require the use of eminent domain, which tends to be a more costly method of ROW acquisition, the cost per acre from this project was cut in half. Average ROW cost per new lane-

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mile is determined by applying the ROW cost per acre from the CR 466 project to the ROW needed for four County 2- to 4-lane road widening projects included in the *Long Range Transportation Plan* List of Priority Projects. For this project, Kimley-Horn and Associates analyzed existing and needed ROW for each project to determine the number of acres that would need to be acquired. While new roads are likely to need significantly more ROW per mile, the cost per acre is also likely to be significantly lower. Consequently, a reasonable estimate of future ROW costs is about \$1.4 million per mile of four-lane roadway, as shown in Table 9.

**Table 9. County Right-of-Way Cost per Mile**

Project Description	ROW		ROW Cost/ Mile
	Cost Est.	Miles	
Hooks St (SR 25 to Hancock Rd)	\$853,647	0.57	\$1,497,626
CR 466A (Sumter Co Line to US 27)	\$6,829,178	3.02	\$2,261,317
Hartwood Marsh (SR 25 to Orange Co)	\$6,379,890	4.54	\$1,405,262
CR 470 (Sumter Co line to CR 33/48)	\$3,055,158	3.85	\$793,548
<b>Total ROW Cost per Mile, 4-Lane Road</b>	<b>\$17,117,873</b>	<b>11.98</b>	<b>\$1,428,871</b>

*Source:* Projects from Lake-Sumter MPO *List of Priority Projects*; ROW cost estimated based on acres needed from analysis by Kimley-Horn and Associates, March 5, 2010 and one-half ROW cost per acre from CR 466 project; ROW cost/mile is ROW cost divided by miles.

Summing the construction and ROW costs per mile results in a total cost of about \$5.7 million per mile of four-lane roadway. This cost per mile is reasonably representative of the cost of both new four-lane roads and 2-lane to 4-lane widening projects. The cost per new lane-mile depends on the type of improvement. For a new four-lane road, the cost per new lane-mile is one-fourth of the cost per mile, while for a 2-lane to 4-lane widening project, the cost per new lane-mile is one-half of the cost per mile. A reasonable indication of the mix of future County road projects are the projects included in the Lake-Sumter MPO *Long Range Transportation Plan*; using this mix of projects, the average cost is about \$2.4 million per lane-mile, as shown in Table 10.

**Table 10. Average County Road Cost per Lane-Mile**

Construction Cost per Mile (4-Lane Road)	\$4,262,587
Right-of-Way Cost per Mile (4-Lane Road)	\$1,428,871
<b>Total Cost per Mile (4-Lane Road)</b>	<b>\$5,691,458</b>
Total Cost per New Lane-Mile, New Road	\$1,422,865
Total Cost per New Lane-Mile, 2-4 Lane Widening	\$2,845,729
Percent of New Lane-Miles from Widening Projects	66.8%
<b>Weighted Average Cost per New Lane-Mile</b>	<b>\$2,373,338</b>

*Source:* Construction cost per mile from Table 8; ROW cost per lane-mile from Table 9; percent of new County road lane-miles from widening projects from Lake-Sumter MPO, *2025 Long Range Transportation Plan*, Cost Affordable Plan, 2009 (see Table 80).

## State Road Cost per Lane-Mile

The average cost of improving State roads in Lake County is based on State road improvements included in the Lake-Sumter MPO's Cost Affordable Plan in the *2025 Long Range Transportation Plan*. US highway projects and two State road projects with extensive bridge improvements were excluded

from the analysis. Of the six projects utilized, two (SR 50, east of Grand to west of Hancock, and SR 44, SR 500 to SR 44E) were included in the MPO’s List of Priority Projects and had detailed cost estimates available. However, one of these had an extraordinarily high cost per lane-mile, and was ultimately excluded as an outlier. For the other four projects, Kimley-Horn and Associates derived construction cost estimates using the Florida Department of Transportation’s 2010 cost model. Right-of-way cost estimates for these four projects were based on ROW as a percentage of construction/design costs for five projects on the List of Priority Projects. All six projects are widening projects, which is typical of the types of capacity-enhancing projects needed on State roads in Lake County.

**Table 11. Average State Road Cost per Lane-Mile**

Project	Miles	Type	ROW Cost	Construction/ Design Cost	Total Cost	Cost/ Lane-Mile
SR 50 (E of Grand-W of Hancock)	1.08	4-6 Ln	\$633,759	\$6,926,329	\$7,560,088	\$3,500,041
SR 44 (SR 500 to SR 44/E)	2.09	2-4 Ln	\$3,312,000	\$43,039,757	\$46,351,757	\$11,088,937
SR 44 (CR 44 to CR 44B)	1.16	2-4 Ln	\$1,283,480	\$4,456,527	\$5,740,007	\$2,474,141
SR 50 (US 27 to Hancock Rd)	2.13	4-6 Ln	\$2,925,046	\$10,156,409	\$13,081,455	\$3,070,764
SR 19 (O to Old CR 441)	2.29	4-6 Ln	\$4,717,583	\$16,380,495	\$21,098,078	\$4,606,567
SR 50 (CR 561 to SR 25/US 27)	2.07	4-6 Ln	\$4,264,365	\$14,806,823	\$19,071,188	\$4,606,567
<b>Total</b>	<b>10.82</b>		<b>\$17,136,233</b>	<b>\$95,766,340</b>	<b>\$112,902,573</b>	<b>\$5,217,309</b>
<b>Total, Excluding Outlier</b>	<b>8.73</b>		<b>\$13,824,233</b>	<b>\$52,726,583</b>	<b>\$66,550,816</b>	<b>\$3,811,616</b>

*Source:* Projects from Lake-Sumter MPO, *2025 Long Range Transportation Plan (LRTP)*, Adopted Cost Affordable Plan, August 2009, excluding US highways and three projects with bridges; costs for first two projects from Florida Department of Transportation (FDOT); for other four projects, construction/design costs from Kimley-Horn based on FDOT 2010 generic cost model and 12% design cost assumption; right-of-way costs based on 28.5% of construction/design cost, derived from analysis of five US highway and State road projects in the MPO’s List of Priority Projects by Kimley-Horn, March 5, 2010; cost per new lane-mile is total cost divided by product of miles and new lanes (all projects add 2 new lanes).

### Summary of Lane-Mile Costs

The average cost per new lane-mile for County road projects is considerably lower than for State road projects. However, most new lane-miles that will be added by projects included in the Long Range Transportation Plan will be on County roads. Weighting the County road and State road costs by their share of planned new lane-miles yields a weighted average cost per lane-mile of \$2.6 million, as shown in Table 12. Note that the updated costs per lane-mile are considerably lower than those developed as part of the County’s un-adopted 2007 transportation impact fee update.

**Table 12. Average Cost per Lane-Mile**

	County Roads	State Roads	Weighted Average
Average Cost Per Lane-Mile	\$2,373,338	\$3,855,603	n/a
Percent of LRTP New Lane-Miles	86.0%	14.0%	100.0%
<b>Weighted Average Cost per Lane-Mile</b>	<b>\$2,041,071</b>	<b>\$539,784</b>	<b>\$2,580,855</b>
Cost per Lane-Mile, 2007 Study	\$3,859,529	\$5,283,082	\$4,144,240
Percent Change	-39%	-27%	-38%

*Source:* County cost per lane-mile from Table 10; State road cost per lane-mile from Table 11; share of new lane-miles from Lake-Sumter MPO, *2025 Long Range Transportation Plan (LRTP)*, Adopted Cost Affordable Plan, May 23 2007 (see Table 80 in Appendix C); 2007 costs per lane-mile from Tindale-Oliver and Associates, Inc., *Lake County Impact Fee Update Study*, July 2007, Table 4.

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### Roadway Capacity

The capacity of Lake County's roads used in this update is based on the LOS C and LOS D capacities used by the County in its concurrency standards. To calculate the average daily capacity per new lane, the total new daily VMC is divided by the number of new lane-miles that will be constructed. The calculations for a representative list of projects included in the MPO's long range cost affordable plan are shown in Table 13.

**Table 13. Average Daily Capacity per Lane**

Project	Miles	Type	Average Daily Cap.			New VMC	New Ln-Mi.	Cap./ Lane
			Before	After	New			
SR 50 (E of Grand-W of Hancock)	1.08	4D-6D	36,600	53,500	16,900	18,252	2.16	8,450
SR 44 (SR 500 to SR 44/E)	2.09	2U-4D	20,700	35,700	15,000	31,350	4.18	7,500
SR 44 (CR 44 to CR 44B)	1.16	2U-4D	16,500	36,700	20,200	23,432	2.32	10,100
SR 50 (US 27 to Hancock Rd)	2.13	4D-6D	36,700	55,300	18,600	39,618	4.26	9,300
SR 19 (O to Old CR 441)	2.29	4D-6D	33,200	50,300	17,100	39,159	4.58	8,550
SR 50 (CR 561 to SR 25/US 27)	2.07	4D-6D	36,700	55,300	18,600	38,502	4.14	9,300
<b>Total, State Projects</b>						190,313	21.64	<b>8,795</b>
Hooks St (SR 25 to Hancock Rd)	0.57	2U-4D	9,100	21,400	12,300	6,986	1.14	6,128
CR 466A (Sumter Co Line to US 27)	3.02	2U-4D	14,600	31,100	16,500	49,830	6.04	8,250
Hartwood Marsh (SR 25-Orange Co)	4.54	2U-4D	13,600	29,300	15,700	71,278	9.08	7,850
CR 470 (Sumter Co to CR 33/48)	3.85	2U-4D	21,100	56,500	35,400	136,290	7.7	17,700
<b>Total, County Projects</b>						264,384	23.96	<b>11,034</b>

Source: Projects from Lake-Sumter MPO, 2025 Long Range Transportation Plan (LRTP), Adopted Cost Affordable Plan, August 2009; capacities from Kimley-Horn, March 31, 2010 based on County concurrency standards.

### Cost per Service Unit Summary

The average cost per vehicle-mile of capacity added by planned improvements can be determined by dividing the average cost of a new lane-mile by the average daily capacity added per lane. As shown in Table 14, the relative shares of County road and State road improvements in the Long Range Transportation Plan yield a weighted average cost of \$246 per vehicle-mile of capacity. This is considerably lower than the figure from the 2007 update.

**Table 14. Road Cost per Vehicle-Mile**

	County Roads	State Roads	Weighted Average
Percent of LRTP New Lane-Miles	86.0%	14.0%	100.0%
Average Cost per Lane-Mile	\$2,373,338	\$3,855,603	n/a
÷ Average Capacity per Lane	11,034	8,795	n/a
<b>Average Cost Per Vehicle-Mile</b>	<b>\$215</b>	<b>\$438</b>	<b>\$246</b>
2007 Study Cost per Vehicle-Mile			\$389
Percent Change from 2007 Study			<b>-37%</b>

Source: County and State road shares of new lane-miles in the LRTP from Table 80 in Appendix C; average cost per new lane-mile from Table 12; average capacity per new lane from Table 13; 2007 cost per vehicle-mile from Tindale-Oliver and Associates, Inc., *Lake County Impact Fee Update Study*, July 2007.

## Revenue Credits

This section of the report updates the credit calculations to account for revenue generated by new development that will be used to pay for capacity-related capital improvements through motor fuel taxes and sales taxes. To update this credit, the consultant reviewed Lake County historical expenditures and future appropriations for roadway projects that expand the capacity of the roadway system. The County primarily funds capacity-expanding road improvements with the impact fee. The County does not have any outstanding road-related debt issues.

The County levies local gas taxes, including the six-cent Local Option Gas Tax, the 5<sup>th</sup> and 6<sup>th</sup> Cent Constitutional Gas Tax, 7<sup>th</sup> Cent County Gas Tax and the 9<sup>th</sup> Cent Gas Tax. Annual revenue from the local gas tax is currently \$10.1 million, which funds the County's transportation trust fund. No major road construction is funded from the County's gas taxes. Consequently, a credit is not necessary in this update for local gas taxes.

A credit in this update for State and Federal funding recognizes Florida Department of Transportation expenditures on State roads in Lake County. FDOT funding sources include Federal and State gas tax and State general revenue in the form of legislative Transportation Regional Incentive Program (TRIP) appropriations.

In addition to the gas tax, the County has a Municipal Services Taxing Unit (MSTU) for roads. While this funding source may be used for construction of new roads, the County has traditionally used it for resurfacing and micro-resurfacing of roads; consequently, no MSTU credit is necessary in this update.

The County collects a one-cent sales tax that is earmarked for infrastructure. The County allocates one-half of the infrastructure sales tax revenue for transportation purposes. This update includes a credit for the capacity-expanding projects funded with infrastructure sales tax revenue.

## Gas Tax Credit

The amount of Federal and State motor fuel tax revenue applied toward funding capacity-expanding capital improvements is determined based on construction and right-of-way projects in the last five FDOT *Five-Year Work Programs* for Lake County, as shown in Table 15.

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**Table 15. Federal/State Fuel Tax Capacity Funding, 2005-2009**

Facility	Improvement	2005	2006	2007	2008	2009
CR 42 (W. of Gray Heron-Rd. 536)	Pave shoulders					\$1,349,288
CR 44 at CR 19a	Add Turn Lanes				\$50,000	
CR 44 at Shelly Dr.	Add Turn Lanes				\$75,000	\$144,443
CR 466 (Co. Line to US 27/441)	Add Lanes/Rehab				\$16,600,000	
CR 48 (US 27 to SR 19)	Pave shoulders		\$840,000		\$840,000	
Lakeshore Dr. (CR 561-Hook St.)	Pave shoulders		\$582,040			
Lucern Drive RR Crossing	RR Signal		\$123,646			
SR 25 at Corley Island Rd.	Add Turn Lanes		\$268			\$73,741
SR 25 (Lk. Louisa-Cluster Oak Dr.)	Add Lanes/Rehab	\$162,871	\$4,357,472	\$5,289,045	\$6,497	\$200,679
SR 25 (SR 530-Boggy Marsh Rd.)	Add Lanes/Rehab	\$3,334,613	\$23,841,155	\$537,319	\$1,189,065	\$23
SR 25 (SR 50-CR 561-a)	Add Lanes/Rehab	\$3,863,239	\$26,192,774	\$1,541,839	\$2,460,657	\$110,827
SR 25 (Boggy Marsh Rd.-Lk. Louisa)	Add Lanes/Rehab	\$78,303	\$195,540	\$5,666,624	\$1,321,057	\$103,351
SR 25 (US 27-Polk Co. Line)	Engineering					\$610,630
SR 40 (Marion Co.-Volusia Co. lines)	Engineering		\$646,100	\$10,827	\$9,296	\$7,461
SR 44 (SR 500-SR 44)	Add Lanes/Rehab			\$1,767,161	\$60,904	\$321,827
SR 46 (from CR 437 South)	Signalization		\$37,608	\$295,784	\$203,826	\$30,102
SR 46 (US 441-Seminole Co. line)	Engineering	\$811,143	\$2,087,807	\$231,906	\$491,435	\$1,183
SR 50 (Tiny Morse Rd.-Lake Blvd.)	Add Lanes/Rehab			\$885,919	\$8,859,656	\$15,311
SR 50 (Hancock Rd-W. Rem. Rd)	Add Lanes/Rehab	\$128,846	\$2,213,036	\$98,944	\$569,851	\$20,639,126
SR 500 (Lake Ella Rd-Ave. Central)	Add Lanes/Rehab	\$8,562	\$3,277,452	\$64,345	\$2,862,905	\$2,959,902
SR 500 (MLK-Lake Ella Rd)	Add Lanes/Rehab	\$865,003	\$2,793,622	\$195,408	\$2,376,650	\$2,038,838
SR 500 (Perkins St-N. of Griffin Rd)	Add Lanes/Rehab	\$15,644	\$4,636,973	\$7,438,386	\$401,070	\$6,913
SR 500 (Perkins St-SR 44)	Add Lanes/Rehab		\$259	\$1,975,154	\$19,293	\$195,979
SR 500 at Lincoln Ave	Intersection	\$671,565	\$74,584			
SR 500 (W of College-W of L. Shore)	Add Lanes/Rehab	\$889,191	\$902,745	\$28,654		
SR 500 (Lk Eustis Dr-CR 44B)	Add Lanes/Rehab	\$34,044,151	\$1,163,535	\$1,128,611	\$1,733,515	\$3,001
SR 500 (Mills St-W. of College Rd)	Add Lanes/Rehab	\$2,083,210	\$2,828,467	\$2,433,046	\$1,804,848	\$23
<b>Total Capacity Funding</b>		<b>\$46,956,341</b>	<b>\$76,795,083</b>	<b>\$29,588,972</b>	<b>\$41,935,525</b>	<b>\$28,812,648</b>

Source: Capacity-expanding improvement programmed costs from Florida Department of Transportation (FDOT), *Work Program – Adopted Work Program Six Year History*, FY 2004/2005 – 2008/2009 (<http://www2.dot.state.fl.us/programdevelopmentoffice/wp/default.asp>).

Total motor fuel tax revenue collected in Lake County for each year is estimated based on the gallons of motor fuel sold in Lake County and the Federal/State tax rate per gallon in effect at the time. On average, over the five-year period, it is estimated that 80% of Federal and State motor fuel taxes collected in Lake County have been spent on capacity-expanding improvements to the major roadway system, as shown in Table 16.

**Table 16. Percent of Federal/State Fuel Tax Funding to Capacity**

Fiscal Year	Gallons Sold in Lake Co.	Fed/State Tax/Gallon*	Fed/State Taxes Paid	Capacity Funding	Percent Capacity
FY 2004/2005	146,970,896	\$0.367	\$53,938,319	\$46,956,341	87.1%
FY 2005/2006	150,329,421	\$0.373	\$56,072,874	\$76,795,083	137.0%
FY 2006/2007	152,553,118	\$0.379	\$57,817,632	\$29,588,972	51.2%
FY 2007/2008	152,553,118	\$0.384	\$58,580,397	\$41,935,525	71.6%
FY 2008/2009	143,112,733	\$0.389	\$55,670,853	\$28,812,648	51.8%
<b>Five-Year Average</b>					<b>79.7%</b>

\* Fed/State Tax Gallon excludes \$0.02 of constitutional fuel tax.

Source: Total gallons of fuel sold in Lake County (includes gasohol and diesel) and tax rates from the Florida Department of Revenue; FDOT capacity-expanding improvement funding from Table 15.

The estimated amount of Federal and State motor fuel tax funding available for capacity-expanding capacity improvements is based on the historical percentage of Federal and State fuel tax funding for capacity and the current tax structure. As shown in Table 17, it can reasonably be anticipated that approximately 80% of Federal and State fuel taxes will be available in the future for capacity-expanding capital improvements. As mentioned above, Lake County programs local fuel taxes for maintenance and has not historically programmed them for capacity improvements. Thus, a credit for the local fuel taxes is not necessary.

**Table 17. Motor Fuel Tax Credit per Gallon**

Type of Motor Fuel Tax	Tax Rate/ Gallon
Federal Motor Tax Rate/Gallon	\$0.184
State Motor Tax (Less Constitutional Fuel Tax)	\$0.140
State Comprehensive Enhanced Transportation (SCETS) Tax	\$0.066
<b>Total Federal/State Motor Fuel Tax per Gallon</b>	<b>\$0.390</b>
x Percent of Motor Fuel Tax Funding for Capacity	79.7%
<b>Total Federal/State Fuel Tax for New Capacity per Gallon</b>	<b>\$0.311</b>

*Source:* Tax rates per gallon as of January 1, 2010 from the Florida Department of Revenue; percent of motor fuel tax funding for capacity from Table 16.

As shown in Table 18, new development can be expected to generate over the next 25 years the present value equivalent of \$99 in capacity-expanding road funding for every daily vehicle-mile of travel.

**Table 18. Motor Fuel Tax Credit per Service Unit**

Total Federal/State Fuel Tax for New Capacity per Gallon	\$0.311
÷ Average Miles per Gallon	17.2
<b>Capacity-Expanding Improvement Funding per Daily Vehicle-Mile</b>	<b>\$0.0181</b>
x Days per Year	365
<b>Annual Capacity-Expanding Improvement Funding per Daily Vehicle-Mile</b>	<b>\$6.61</b>
x Net Present Value Factor (4.4% discount rate over 25 years)	14.98
<b>State/Federal Motor Fuel Tax Credit per Daily Vehicle-Mile of Travel (VMT)</b>	<b>\$99</b>

*Source:* Motor fuel tax funding per gallon from Table 17; average miles per gallon is average for all motor vehicles for 2007 from US Department of Transportation, *Highway Statistics*; present value factor based on 25 years at 4.4% discount rate based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data/monthly>.

## Sales Tax Credit

The County's infrastructure surtax is a 1-cent sales tax levied by the County based on a referendum vote for the purpose of construction, reconstruction or improvement of public facilities. The County has programmed \$3.7 million in the current 5-year CIP from the infrastructure sales tax for capacity-expanding road projects and right-of-way acquisition. As shown in Table 19, the sales tax credit in this update is based on the annual planned surtax funding for roads and the existing VMT. Assuming that the infrastructure sales tax continues to be reauthorized and programmed for similar improvements, new development will generate the present value equivalent of \$2 in capacity funding per VMT over the next 25 years.

**Table 19. Infrastructure Sales Tax Credit**

CR 439 (Widen/Resurface from SR 44-CR44A)	\$250,000
CR 448 (Pave Shoulders)	\$400,000
Picciola Bridge (New Bridge)	\$3,020,000
<b>Total Renewal Sales Tax Funding, FY 2010-FY 2014</b>	<b>\$3,670,000</b>
÷ Years in Plan	5
<b>Annual Renewal Sales Tax Funding for Capacity</b>	<b>\$734,000</b>
÷ Existing County-Wide Locally-Generated VMT	4,975,660
<b>Annual Renewal Sales Tax Funding per VMT</b>	<b>\$0.15</b>
x Net Present Value Factor (4.4% discount rate over 25 years)	14.98
<b>Infrastructure Sales Tax Credit per VMT</b>	<b>\$2</b>

*Source:* Planned infrastructure spending from Lake County *Capital Improvement Plan* FY 2009/2010 to FY 2013/2014; existing county-wide locally-generated VMT from Table 6; present value factor based on 25 years at 4.4% discount rate based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data/monthly>.

**Revenue Credit Summary**

The total credits related to State and Federal motor fuel tax and the local infrastructure sales tax for capacity-expanding improvements on the County’s major roadway network are summarized in Table 20. Based on this calculation, new development could be expected to generate the current equivalent of \$101 in capacity-expanding road funding over the next 25 years for every daily vehicle-mile of travel.

**Table 20. Transportation Revenue Credit Summary**

State/Federal Motor Fuel Tax Credit per VMT	\$99
Infrastructure Sales Funding Credit per VMT	\$2
<b>Total Credit per VMT</b>	<b>\$101</b>

*Source:* State/Federal motor fuel tax credit from Table 18; infrastructure sales tax credit from Table 19.

## Travel Demand Schedule

This section reviews the travel demand characteristics utilized in the current and updated impact fee formula and compares the updated travel demand schedule to the existing schedule. 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. In addition, this section discusses the rationale for simplifying the current travel demand schedule and related impact fee schedule.

## Land Use Simplification

A major change proposed in this study is to simplify and standardize land use categories across all of the impact fees. Currently, the County has 83 land use categories. This update recommends consolidating them down to 13 categories. The detailed and more generalized approaches to land use categories emphasize different views of impact. The detailed approach focuses on maximizing the accuracy of measuring the immediate impacts of a development. The detailed approach is certainly appropriate when near-term, localized impacts are the prime consideration, for example when assessing the likely impacts of a development on a nearby congested intersection. When applied to impact fees, however, the detailed approach requires a commitment to continually monitor for changes of use in order to maintain the same degree of accuracy over time. In addition, an equity concern can arise with this approach, since only changes that intensify impacts are taken into account (impact fees are not refunded if a development is changed to a less intensive use). In contrast, the more generalized approach to land use categories focuses on long-term, system-wide impacts, and is arguably the more appropriate approach for an impact fee system.

Most commercial uses occur within shopping centers, and trip generation rates for shopping centers assume a mix of uses. The *Trip Generation* manual produced by the Institute of Transportation Engineers (ITE) notes that some of the centers included in its surveys include “non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs and recreational facilities.” It also notes that some of the centers surveyed include outparcels, which often contain convenience uses such as service stations, drive-in banks and fast-food restaurants. The shopping center rate is thus appropriate for a broad range of commercial uses. The proposed approach is to utilize the shopping center rate for all retail/commercial uses.

Currently, fees for shopping centers vary based on size, with four categories ranging from less than 50,000 square feet to more than 600,000 square feet. Similarly, fees for office uses are based on the size of the building, with five square footage categories. This is consistent with national data from ITE, showing that as shopping centers and office buildings increase in size, the number of trips generated per 1,000 square feet declines. Charging variable rates for shopping centers by size of the center was virtually universal in early transportation impact fee systems. One reason for this unanimity is that ITE did not even publish average daily trip generation rates for all sizes of shopping centers prior to the 6th edition of the *Trip Generation* manual in 1997 (before that, average rates were given for centers of less than 570,000 square feet and larger centers).

However, now that average rates are available, more communities are moving away from charging fees based on the size of the shopping center. It is known that large, regional shopping centers have a lower percentage of pass-by trips than smaller, more neighborhood-oriented centers, and this relationship is also likely to hold for small, neighborhood-oriented offices versus large corporate office buildings. It is also known that large, regional shopping centers have a much larger market

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area than smaller centers, and thus attract trips from longer distances, and this factor undoubtedly also comes into play for office developments. Consequently, the lower trip generation rates of larger shopping centers and office buildings is largely offset by higher percentages of primary trips and longer trip lengths (for example, the County's current fees for the three largest shopping center categories are virtually the same). Given this, it is reasonable to collapse the size categories and charge commercial and office uses based on an average rate per 1,000 square feet.

Most detailed impact fee schedules are actually a combination of the detailed and more generalized approaches, because they generally include a retail category that is applied to all uses located within a shopping center. This can create extreme disparities in fees for the same land use, depending on its location. For example, a movie theater would be charged the shopping center rate if located in a shopping center, but a fee that is as much as three times higher if located outside of a shopping center. While it is certainly likely that there is some internal capture within a shopping center, this particular use would not experience such a dramatic reduction in impact due to this change in location. The only other way to address this issue would be to charge every use within a shopping center a different fee, perhaps with some across-the-board reduction for internal capture within a shopping center. However, this approach poses administrative problems in terms of tracking what fee has been paid for each tenant space within the center, and may lead to controversies when business owners are required to pay large fees due to a change of use. Charging all commercial uses based on the shopping center rate, regardless of location within or outside a shopping center, avoids these kinds of problems.

Some may be concerned that the more generalized approach cannot be equitable, because it would result in a much bigger reduction in fees for certain land uses, such as convenience stores and fast-food restaurants. Such a concern would not likely have been raised, however, if Lake County's initial impact fee schedule had used the more generalized approach. This concern is at root an issue of transition from one reasonable method of assessing impact fees to another reasonable, but different, method. In fact, the current period, in which no transportation impact fees are being charged to any land use, may be the best time to undertake such a transition.

Another concern that could be raised is that fees based on average data for broad categories will inevitably over-charge some specific land uses. In fact, however, almost all of the detailed retail/commercial land uses in the current suspended fee schedule have higher fees than the shopping center rate, medical offices will be assessed at the lower general office rate, and the public institutional rate is based on the land use in this category with the lowest fee (nursing home).

There are several advantages to having a smaller number of broader, more generalized categories: (1) it will make it easier to classify land uses; (2) it will avoid the controversies that can arise over very high impact fees for certain high-trip-generation land uses that are a very small part of new development; (3) it will avoid the problems that arise when such uses locate in shopping centers, where they should qualify for the much lower general retail rate, compared to the much higher rates they would be charged if they were a stand-alone use; and (4) there will be fewer issues with change of use.

Using a smaller number of broader categories makes it simpler to classify proposed uses and avoid most change of use issues. Paradoxically the more categories there are, the more difficult it becomes

to classify proposed development projects. For example, it will no longer be necessary to distinguish between quality, high-turnover and fast food restaurants.

Moving to broader land use categories, while also calibrating travel demand factors to actual travel on the major roadway network, will also reduce or eliminate the need to perform numerous local traffic characteristics studies. It is true that the proposed reduced number of categories would make it more feasible to prepare local studies of most of the categories, but it is unlikely that such studies would result in lower fees, since this update has calibrated the recommended travel demand factors to ensure that they are consistent with actual travel on the County's major roadway system.

### **Trip Generation**

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 trip ends. To avoid double-counting travel, VMT is divided by two.

The trip generation rates utilized in the County's suspended impact fee schedule are based on several sources of information from the 2001 study, including the Institute of Transportation Engineers' (ITE), *Trip Generation* manual, 6<sup>th</sup> edition, and independent trip generation studies conducted in Lake County as well as other jurisdictions in Florida. The trip generation rates were updated in the 2007 study with data from the 7<sup>th</sup> edition of the ITE manual, additional local studies and updated Florida data. The 2007 study was the starting point for this update. However, it does not contain data on single-family trip rates by dwelling size, so the 2001 study data was retained for those categories. Many of the trip rates contained in the 2007 study were not used in this update, since the number of land use categories has been significantly reduced. For those retained land uses whose rates were based exclusively on the 7<sup>th</sup> edition of the ITE manual (hotel/motel, general commercial, office, industrial, warehouse, mini-warehouse), the rates have been updated to reflect those published in the 8<sup>th</sup> edition.

### **Percent New Trips**

The trip rates are also adjusted by a "new trip factor" to exclude pass-by and diverted-link trips. This adjustment reduces the possibility of over-counting trips by including only 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 new trip data utilized in the suspended schedule for the retained categories are based on a mix of local data and data from other Florida communities. Only the retail factors changed during the 2007 update. This update will retain the factors from the 2007 study.

### **Trip Length**

Trip length represents the average length of a trip on the major roadway system. The current impact fee schedule is based on major roadway and local trip length factors developed for Lake County in the 2001 study. The major roadway trip length includes travel on County, State and municipal arterials and collectors in Lake County. In addition to the major road trip length, the 2001 study

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utilized a total trip length, which includes an additional one-half mile to take into account travel on local (non-major) streets, to calculate the revenue credit. The trip lengths were based on local or Florida studies, and were updated in the 2007 study. For most land use categories, the trip lengths were lower in the 2007 study. The starting point for the updated trip lengths are the most recent data from the 2007 study. However, the trip lengths have been reduced by 7% (see Table 6) to ensure that the travel demand factors do not over-predict locally-generated travel on the major roadway system.

### Travel Demand Summary

The result of combining trip generation rates, new trip factors and average trip lengths is a travel demand schedule that establishes the VMT during the average weekday generated by various land use types per unit of development for Lake County. Since all trips involve two trip ends, the product of trip rates, trip length and new trip factors is divided by two when calculating the daily VMT. This divides the assignment of travel equally between the origin and destination of the trip and eliminates double-charging for any particular trip. The recommended travel demand schedule is shown in Table 21.

**Table 21. Travel Demand Schedule**

Land Use Type	ITE Code	Unit	Trip Rate	Trip Length		% New Trips	Daily VMT	
				Major Rd.	Total		Major Rd.	Total
Single-Family Detached								
Less than 1,500 sf	210	Dwelling	6.38	7.82	8.32	100%	24.95	26.54
1,500 to 2,499 sf	210	Dwelling	8.50	7.82	8.32	100%	33.24	35.36
2,500 sf or greater	210	Dwelling	10.03	7.82	8.32	100%	39.22	41.72
Multi-Family	220	Dwelling	6.33	4.98	5.48	100%	15.76	17.34
Mobile Home Park	240	Space	4.67	4.28	4.78	100%	9.99	11.16
Active Adult Community	250	Dwelling	3.81	6.42	6.92	100%	12.23	13.18
Lodging	310/320	Room	6.90	6.56	7.06	72%	16.30	17.54
Retail/Commercial	820	1,000 sf	42.94	3.12	3.62	62%	41.53	48.19
Office	710	1,000 sf	11.01	6.44	6.94	92%	32.62	35.15
Industrial/Manufacturing	140	1,000 sf	3.82	10.37	10.87	92%	18.22	19.10
Warehousing	150	1,000 sf	3.56	10.37	10.87	92%	16.98	17.80
Mini-Warehouse	151	1,000 sf	2.50	4.07	4.57	92%	4.68	5.26
Public/Institutional	620	1,000 sf	7.58	3.22	3.72	89%	10.86	12.55

*Source:* Trip rates, trip length and % new trips derived primarily from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, July 2007 (single-family by size based on 2001 study, retail/commercial based on 50,000-200,000 sq. ft.), except that trip rates for lodging, retail, office, warehouse and public/institutional (based on nursing home) have been updated to reflect current rates from the Institute of Transportation Engineers (ITE), *Trip Generation*, 8<sup>th</sup> ed., 2008, and major road trip length has been multiplied by the calibration factor from Table 6; the total trip length is major road trip length plus 0.5 miles; daily VMT is one-half the product of trip rate, trip length and percent new trips, with major road VMT based on the major road trip length and total VMT based on total trip length.

The updated travel demand schedule is compared to the travel demand schedule on which the current (suspended) fees are based (2001 study) and the recommended travel demand schedule from the un-adopted 2007 update (2007 study) in Table 22. A major reason for the decline in vehicle-miles of travel per unit is the reduction in trip length to calibrate to travel observed on the major roadway system. The comparison of the 2001 and 2007 travel demand factors for all of the 83 categories in the current fee schedule to the factors for the 13 recommended categories is presented in Table 81, Appendix D.

**Table 22. Comparative Major Road Vehicle-Miles of Travel**

Land Use Type	ITE Code	Unit	Major Road VMT per Unit			Change from 2001
			2001 Study	2007 Study	Updated	
Single-Family Detached						
Less than 1,500 sf	210	Dwelling	27.43	36.67	24.95	-9%
1,500 to 2,499 sf	210	Dwelling	36.55	36.67	33.24	-9%
2,500 sf or greater	210	Dwelling	43.13	36.67	39.22	-9%
Multi-Family	220	Dwelling	23.69	16.93	15.76	-33%
Mobile Home Park	240	Space	14.57	10.74	9.99	-31%
Active Adult Community	250	Dwelling	19.16	13.14	12.23	-36%
Lodging	310/320	Room	24.12	22.95	16.30	-32%
Retail/Commercial	820	1,000 sf	54.83	65.23	41.53	-24%
Office	710	1,000 sf	35.49	32.98	32.62	-8%
Industrial/Manufacturing	140	1,000 sf	19.58	19.58	18.22	-7%
Warehousing	150	1,000 sf	25.42	25.42	16.98	-33%
Mini-Warehouse	151	1,000 sf	5.03	5.03	4.68	-7%

Source: 2001 VMT from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, December 2001; 2007 VMT from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, July 2007; updated VMT from Table 21; for comparison purposes, 2001 and 2007 study VMT for general retail (50,000-200,000 sf) used for retail/commercial, and general office (100,001-400,000 sf) for office.

## Potential Impact Fee Schedule

The detailed impact fee calculations for each of the recommended land use categories are included in Table 23. The total impact cost calculation is the product of the daily VMT on the major roadway system and the unit cost of a new road capacity (cost per VMT) calculated earlier in this report. The credit for motor fuel taxes and sales taxes is based on total VMT (travel on local roads as well as major roads). The net cost per unit is the difference between the cost per unit and the credit per unit.

**Table 23. Potential Transportation Impact Fee Schedule**

Land Use Type	Unit	VMT/Unit		Cost/ VMT	Credit/ VMT	Cost/ Unit	Credit/ Unit	Net Cost/ Unit
		Major Rd.	Total					
Single-Family								
Less than 1,500 sf	Dwelling	24.95	26.54	\$246	\$101	\$6,138	\$2,681	\$3,457
1,500 to 2,499 sf	Dwelling	33.24	35.36	\$246	\$101	\$8,177	\$3,571	\$4,606
2,500 sf or greater	Dwelling	39.22	41.72	\$246	\$101	\$9,648	\$4,214	\$5,434
Multi-Family	Dwelling	15.76	17.34	\$246	\$101	\$3,877	\$1,751	\$2,126
Mobile Home Park	Space	9.99	11.16	\$246	\$101	\$2,458	\$1,127	\$1,331
Active Adult Community	Dwelling	12.23	13.18	\$246	\$101	\$3,009	\$1,331	\$1,678
Lodging	Room	16.30	17.54	\$246	\$101	\$4,010	\$1,772	\$2,238
Retail/Commercial	1,000 sf	41.53	48.19	\$246	\$101	\$10,216	\$4,867	\$5,349
Office	1,000 sf	32.62	35.15	\$246	\$101	\$8,025	\$3,550	\$4,475
Industrial/Manufacturing	1,000 sf	18.22	19.10	\$246	\$101	\$4,482	\$1,929	\$2,553
Warehousing	1,000 sf	16.98	17.80	\$246	\$101	\$4,177	\$1,798	\$2,379
Mini-Warehouse	1,000 sf	4.68	5.26	\$246	\$101	\$1,151	\$531	\$620
Public/Institutional	1,000 sf	10.86	12.55	\$246	\$101	\$2,672	\$1,268	\$1,404

Source: VMT per unit from Table 21; cost per VMT from Table 14; credit per VMT from Table 20; cost per unit is major road VMT times cost per VMT; credit per unit is total VMT times credit per VMT; net cost per unit is cost per unit less credit per unit.

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The updated transportation impact fees are compared with the most recent adopted and implemented fees in Table 24. As mentioned, the transportation impact fees were suspended by the Board of County Commissioners for one year, effective March 2, 2010. The fee schedule that was in effect was based on the 2001 impact fee study. Given that the fee schedule has not been updated for nine years and included a 36.6% across the board reduction, it is not surprising that the potential fees would result in significant increases for most land uses if fully implemented.

**Table 24. Transportation Impact Fees Comparison**

Land Use Type	Unit	Previous Fee	Potential Fee	Change
<b>Single-Family</b>				
Less than 1,500 sf	Dwelling	\$1,642	\$3,457	\$1,815
1,500 to 2,499 sf	Dwelling	\$2,189	\$4,606	\$2,417
2,500 sf or greater	Dwelling	\$2,583	\$5,434	\$2,851
Multi-Family	Dwelling	\$1,408	\$2,126	\$718
Mobile Home Park	Space	\$859	\$1,331	\$472
Active Adult Community	Dwelling	\$1,153	\$1,678	\$525
Lodging	Room	\$1,110	\$2,238	\$1,128
Retail/Commercial	1,000 sf	\$2,177	\$5,349	\$3,172
Office	1,000 sf	\$2,110	\$4,475	\$2,365
Industrial/Manufacturing	1,000 sf	\$1,182	\$2,553	\$1,371
Warehousing	1,000 sf	\$1,535	\$2,379	\$844
Mini Warehouse	1,000 sf	\$290	\$620	\$330
Public/Institutional	1,000 sf	\$1,322	\$1,404	\$82

Source: Updated fees from Table 23; adopted and suspended fees from Lake County Impact Fee Schedule; for comparison purposes, adopted and suspended fees for general retail (50,000-200,000 sf) used for retail/commercial, general office (100,001-400,000 sf) for office, and church for public/institutional.

## Transportation Funding Options

The transportation impact fee has traditionally been the County's primary funding source for expanding capacity on the major roadway system. The Lake County Board of County Commissioners created the Transportation Alternative Funding Task Force (TAFTF) in 2007 to review additional funding options for transportation infrastructure. This section considers several of the road funding recommendations of the TAFTF and their potential effects on the maximum impact fee that could be charged by the County. In considering the funding options, this section explores how each of the several relevant recommendations would affect the impact fee through the credit calculation. The options examined in this section include the following:

- Dedicate 8% of general fund to road capacity (TAFTF Option #2)
- Dedicate new nonresidential property tax to road capacity for five years (TAFTF Option #4B)
- Create a new county-wide MSTU for road capacity (TAFTF Option #5A)
- Adopt second local option fuel tax (5 cents) for road capacity (TAFTF Option #7)

It should be noted that the Task Force did not actually recommend that these funding sources, with the exception of Option 4B, be dedicated exclusively to roadway capacity enhancement. Nevertheless, the credit calculations below assume that they would be dedicated to capacity. If the funds were earmarked for maintenance, no credits would be warranted.

### General Fund Dedication

The County has not historically utilized the general fund for new capacity or road maintenance expenditures. Under this option, the County would gradually shift 8% of the general fund budget to road construction, with 2% allocated each year until the 8% earmark is reached in the fourth year of implementation. If the funding was earmarked for new expansion, this option would generate an estimated \$12.6 million annually for capacity-expanding improvements to the County’s transportation system when fully implemented. As shown in Table 25, the potential general fund tax credit under this option is \$38 per VMT.

**Table 25. Potential General Fund Dedication Credit**

General Fund Revenue Estimate, FY 2010	\$157,121,495
x Potential Earmark for New Road Capacity	8%
General Fund Earmark	\$12,569,720
÷ Existing County-Wide Locally-Generated VMT	4,975,660
Annual General Fund Revenue per VMT	\$2.53
x Net Present Value Factor (4.4% discount rate over 25 years)	14.98
<b>Potential General Fund Earmark Tax Credit per VMT</b>	<b>\$38</b>

*Source:* General fund revenue estimate for FY 2010 from Lake County Board of County Commissioners, *Adopted Budget Fiscal Year 2009-10*, October 2009; existing county-wide VMT from Table 6; present value factor based on 25 years at 4.4% discount rate based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/> data/monthly.

### Nonresidential Property Tax Dedication

The Task Force also presented an option to fund new capacity by dedicating ad valorem taxes from new commercial development to transportation projects for the first five years the improved property is on the tax roll. After the fifth year, the ad valorem revenues would be directed to the General Fund. This option would be above and beyond the 8% General Fund commitment discussed in the preceding option.

An important methodological issue is whether the credit should be attributed solely to new nonresidential development, or to all development. It is true that it is only the tax generated by new nonresidential development that is proposed to be earmarked for capacity improvements. However, new nonresidential development will not be paying any additional tax, and the loss of revenue to the general fund will be shared by all development. In the analogous situation of tax increment financing (TIF) districts, where TIF revenues are used to pay for infrastructure improvements, the consultants have taken the position that no special credit is due to development within the district, since district taxpayers pay no additional tax. In contrast, in cases where special district taxes are earmarked for infrastructure improvements of the same type funded by the impact fee, a special credit has been deemed appropriate for new development within the district, since district taxpayers do pay an additional tax for infrastructure that is not shared by non-district taxpayers. Based on this reasoning, a general credit for all development is appropriate for this option.

Annual new commercial construction gross taxable value can be estimated based on Property Appraiser data for the last five fiscal years. Based on the current County ad valorem millage rate, the annual dedicated tax revenue, after full implementation, would be about \$1.6 million.

## Transportation

The potential credit is calculated by dividing the annual property tax revenue by county-wide VMT to determine the annual payment per VMT. Multiplying this annual payment by the present value factor yields the present value equivalent of a 25-year stream of future tax payments, which amounts to \$5 per daily VMT, as shown in Table 26.

**Table 26. Potential Dedicated Nonresidential Property Tax Credit**

Average Commercial New Construction Taxable Value	\$67,971,128
x Number of Years Subject to Dedication	5
Value Subject to Dedication After 5 Years of Implementation	\$339,855,640
x County Millage Rate (per \$1,000)	4.6511
Average Annual Ad Valorem Tax Revenue	\$1,580,703
÷ Existing County-Wide Locally-Generated VMT	4,975,660
Annual General Fund Revenue per VMT	\$0.32
x Present Value Factor (25 years at 4.4%)	14.98
<b>Potential Nonresidential 5-Year Earmark Credit per VMT</b>	<b>\$5</b>

*Source:* Average annual new commercial taxable value based on analysis of Lake County Property Appraiser data for FY 2005-2009 from Kimley-Horn and Associates, March 29, 2010; County millage rate from Lake County Board of County Commissioners, *Adopted Budget Fiscal Year 2009-10*, October 2009; existing county-wide VMT from Table 6; discount rate for present value factor from notes to Table 25.

## Road Capacity MSTU

A Municipal Service Taxation Unit (MSTU) is an ad-valorem-based funding mechanism available to local governments in Florida to cover capital costs. This option would implement a countywide MSTU in cooperation with the municipalities to fund new capacity improvements to the major roadway system. While the proposed option did not include a specific mill rate recommendation, this calculation assumes a mill rate of 0.2500 per \$1,000 of valuation. Based on the County's gross taxable value of \$20 billion, the MSTU would raise \$5 million for new capacity improvements annually. Based on the existing countywide VMT, the potential MSTU credit would be \$15 per VMT, as shown in Table 27.

**Table 27. Potential Road MSTU Credit**

Gross Taxable Value	\$20,000,000,000
x Potential Mill Rate (per \$1,000)	0.2500
Potential Annual Ad Valorem Tax Revenue	\$5,000,000
÷ Existing County-Wide Locally-Generated VMT	4,975,660
Annual General Fund Revenue per VMT	\$1.00
x Net Present Value Factor (4.4% discount rate over 25 years)	14.98
<b>Potential Road MSTU Credit per VMT</b>	<b>\$15</b>

*Source:* Gross taxable value based on FY 2010 value from Lake County Board of County Commissioners, *Adopted Budget Fiscal Year 2009-10*, October 2009; existing county-wide VMT from Table 6; discount rate for present value factor from notes to Table 25.

## Second Local Option Fuel Tax

The County has not yet implemented the second local option fuel tax. Under this option the County would adopt the second local option fuel tax of 5 cents per gallon, which would increase the County's gas tax from 10 cents per gallon (including the 2-cent constitutional fuel tax) to 15 cents

per gallon. Based on annual fuel sales of 150 million gallons sold in Lake County, this option would potentially provide \$7.5 million annually for new capacity improvements. As shown in Table 28, new development could be expected to generate, over the next 25 years, the present value equivalent of \$16 in capacity-expanding road funding for every daily vehicle-mile of travel.

**Table 28. Potential Second Local Option Fuel Tax Credit**

County Second Option Fuel Tax for new Capacity per Gallon	\$0.050
÷ Average Miles per Gallon	17.2
Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	\$0.0029
x Days per Year	365
Annual Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	\$1.06
x Net Present Value Factor (4.4% discount rate over 25 years)	14.98
<b>Potential County Fuel Tax Credit per Daily Vehicle-Mile of Travel (VMT)</b>	<b>\$16</b>

Source: Average miles per gallon is average for all motor vehicles for 2008 from US Department of Transportation, *Highway Statistics*; discount rate for present value factor from notes to Table 25.

### Summary of Options

The four funding options are summarized in Table 29. Earmarking 8% of general fund revenue for road improvements would generate the most revenue, and result in the largest credit, while the nonresidential property tax dedication would have the smallest effect.

**Table 29. Summary of Transportation Funding Options**

Option	Potential Annual Revenue	Credit/VMT
8% Earmark of General Fund for Capacity	\$12,569,720	\$38
Nonresidential Property Tax Dedication	\$1,580,703	\$5
New Road Capacity MSTU (0.2500 Mill Rate)	\$5,000,000	\$15
Second Local Option Sales Tax	\$7,500,000	\$16
<b>Cumulative Additional Credit/VMT</b>		<b>\$69</b>

Source: 8% earmark option revenue potential and credit/VMT from Table 25; nonresidential property tax dedication revenue and credit/VMT from Table 26; new road capacity MSTU option revenue and credit/VMT from Table 27; second local option sales tax option credit/VMT from Table 28 (revenue estimate assumes 150 million gallons based on data from Table 16).

The impact that each option would have on the potential impact fees is shown in Table 30. Implementing all four funding options and dedicating all of the revenue to capacity enhancement would reduce fees by 53% for single-family homes, and by a comparable percentage for other land uses, from the maximum levels calculated in this update.

**Table 30. Updated Maximum Fees by Funding Option**

Land Use Type	Unit	Updated Fee	8% Gen. Fund	Nonres. Dedic.	Road MSTU	Sales Tax	All 4 Options	Percent Change
<b>Single-Family</b>								
Less than 1,500 sf	Dwelling	\$3,457	\$2,449	\$3,325	\$3,059	\$3,033	\$1,626	-53%
1,500 to 2,499 sf	Dwelling	\$4,606	\$3,262	\$4,429	\$4,075	\$4,040	\$2,166	-53%
2,500 sf or greater	Dwelling	\$5,434	\$3,849	\$5,226	\$4,808	\$4,767	\$2,556	-53%
Multi-Family	Dwelling	\$2,126	\$1,467	\$2,039	\$1,866	\$1,848	\$929	-56%
Mobile Home Park	Space	\$1,331	\$907	\$1,275	\$1,163	\$1,152	\$561	-58%
Active Adult Comm.	Dwelling	\$1,678	\$1,177	\$1,612	\$1,480	\$1,467	\$768	-54%
Lodging	Room	\$2,238	\$1,572	\$2,151	\$1,975	\$1,958	\$1,028	-54%
Retail/Commercial	1,000 sf	\$5,349	\$3,518	\$5,108	\$4,626	\$4,578	\$2,024	-62%
Office	1,000 sf	\$4,475	\$3,139	\$4,299	\$3,948	\$3,912	\$2,050	-54%
Industrial/Manufacturing	1,000 sf	\$2,553	\$1,827	\$2,457	\$2,266	\$2,247	\$1,235	-52%
Warehousing	1,000 sf	\$2,379	\$1,703	\$2,290	\$2,112	\$2,094	\$1,151	-52%
Mini-Warehouse	1,000 sf	\$620	\$420	\$593	\$541	\$536	\$257	-59%
Public/Institutional	1,000 sf	\$1,404	\$928	\$1,342	\$1,216	\$1,204	\$539	-62%

Source: Updated fees from Table 23; fees under funding options add the credits/VMT from Table 29 to the fee calculations in Table 23.

## PARKS AND RECREATION

Lake County charges a parks and recreation impact fee on new residential development in the unincorporated area of the county. The fees were last updated in 2003, based on a 2003 study by Henderson Young & Company (referred to here as the 2003 study).<sup>9</sup> This report calculates the potential impact fees that could be charged to new development based on updated cost data and the current park facilities serving county residents.

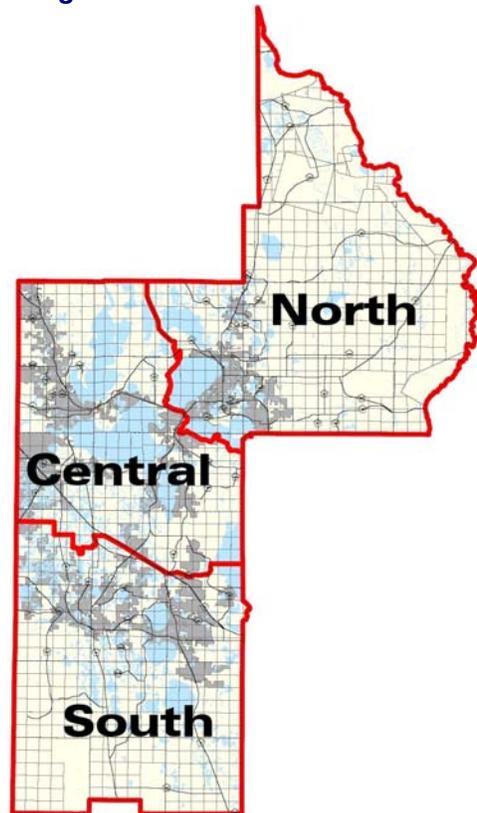
Lake County provides a wide variety of parks, recreational facilities, boat ramps and natural public lands for the enjoyment of county residents. The County's park facilities range from small neighborhood parks to large regional parks and reserves for environmentally sensitive land, with many parks offering residents access to the county's numerous lakes and waterways. Since 2005, the County has been acquiring public lands as a direct result of the approval of a public land referendum in 2004, which approved the issuance of \$36 million in bonds for the acquisition and improvement of land to protect drinking water, improve water quality, protect open space and provide recreation areas. The bonds are funded with a one-third millage of the County property tax.

### Service Areas

There are two kinds of geographic areas in impact fee systems: service areas and benefit districts. A service area, also sometimes called an assessment district, is an area that is served by a defined group of capital facilities and is subject to a uniform impact fee schedule. A benefit district is an area within which fees collected are earmarked to be spent.

The County's parks and recreation impact fees are assessed in the unincorporated areas of the county. There is one service area, and the same fee schedule applies in all unincorporated areas of the county. There are three parks and recreation impact fee benefit districts that divide the county into thirds: the North District, Central District and South District. The existing parks and recreation benefit districts are illustrated in Figure 3. The history of impact fee revenue collected in each benefit district is summarized in Table 31. While revenue is down significantly in all three districts, there is a reasonable balance between the relative amounts collected in each district. No change is recommended to the park impact fee benefit districts.

**Figure 3. Park Benefit Districts**



<sup>9</sup> Henderson Young & Company, *Impact Fees for Parks and Recreational Facilities in Lake County*, Florida, July 2003

**Table 31. Park Impact Fee Revenue, FY 2005-2009**

<b>District</b>	<b>FY 2004/5</b>	<b>FY 2005/6</b>	<b>FY 2006/7</b>	<b>FY 2007/8</b>	<b>FY 2008/9</b>
North	\$218,727	\$159,283	\$78,721	\$44,707	\$19,814
Central	\$201,309	\$187,620	\$66,712	\$25,024	\$11,177
South	\$325,143	\$102,637	\$60,884	\$26,309	\$14,292
<b>Total</b>	<b>\$745,179</b>	<b>\$449,540</b>	<b>\$206,317</b>	<b>\$96,040</b>	<b>\$45,283</b>

*Source:* Lake County Department of Fiscal and Administrative Services, December 16, 2009.

## **Level of Service**

A parks and recreation system represents a capital investment in land, buildings and other improvements that provides service to residents. Reducing this relationship to a simple ratio of acres of land to population does provide a concrete, measurable indicator. However, it may unintentionally put undue emphasis on the acquisition of park land, at the expense of the provision of recreational facilities and improvements. The expansion of a park system may involve periods of extensive land acquisition, followed by periods that focus on the development of land with park improvements. Adoption of a level of service standard expressed in acres implies that only additional land acquisition can enhance the level of service. In reality, the level of service provided by a park system can be enhanced by improvements to existing land as well as by acquisition of additional land. For the purpose of this impact fee update, the level of service is measured in terms of the ratio of the replacement value of existing facilities to a measure of existing residential development

The County’s adopted level of service standards are based on a ratio of acres to permanent year-round residents. However, estimates of existing housing units are more accurate than population estimates in calculating impact fees, because estimating population requires additional assumptions about what percentage of units are occupied. The park impact fees can more reliably be based on the number of dwelling units, without having to deal with the intervening variable of occupancy rates. Consequently, the denominator used in the impact fee level of service measure in this update will be equivalent dwelling units, rather than population.

Impact fees are generally based on the existing level of service, rather than adopted or desired level of service. This study continues the approach of basing the park impact fees on the existing level of service. It measures that level of service in terms of the ratio of the replacement value of existing facilities to equivalent dwelling units. The concept of equivalent dwelling units is described in the next section.

## **Service Unit**

Disparate types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for park facilities. This unit of measurement is called a “service unit.” The 2003 study utilized population to measure the existing level of service based on permanent resident population. Permanent population, as opposed to peak population, recognizes that some units are vacant at any point in time. However, in calculating the fees, the 2003 study utilized average household size of occupied dwelling units.

This report recommends the use of a service unit that avoids the need to make assumptions about occupancy rates, as well as potential inconsistencies between the use of permanent and peak population. This service unit is the “equivalent dwelling unit” or EDU, which represents the impact of a typical single-family detached dwelling. By definition, a typical single-family unit represents, on average, one EDU. Other types of units each represent a fraction of an EDU, based on their relative household sizes.

Demand for park facilities is proportional to the number of people in a dwelling unit. Consequently, data on average household size for various types of units is a critical component of a park impact fee. These data are presented and analyzed in Appendix A and are used to develop the EDU multipliers for Lake County’s parks and recreation impact fee update. As mentioned in the introduction, this update includes the implementation of park impact fee rates that vary by single-family house size, which is consistent with approach used for the County’s transportation impact fee. The relative EDUs associated with each housing type and unit size category are shown in Table 32.

**Table 32. Park Equivalent Dwelling Unit Multipliers**

Housing Type	Avg. HH Size	EDUs/ Unit
Single-Family, Detached (all)	2.55	1.00
Less than 1,500 sf	2.34	0.92
1,500 to 2,499 sf	2.54	1.00
2,500 sf or greater	2.83	1.11
Multi-Family	1.96	0.77
Mobile Home Park	2.03	0.80
Active Adult Community	1.87	0.73

Source: Average household sizes from Table 77, Appendix A.

In order to determine the existing level of service, it is necessary to estimate the total number of service units in the unincorporated area of the county. The estimate of existing units is presented in Appendix A. The total EDUs are calculated by multiplying the number of existing residential units by the EDUs per unit. As shown in Table 33, there are 63,465 park service units (EDUs) in the unincorporated parts of the county.

**Table 33. Existing Park Service Units**

Housing Type	EDUs/ Unit	Total Units	Total EDUs
Single-Family, Detached	1.00	48,343	48,343
Multi-Family	0.77	5,069	3,903
Mobile Home Park	0.80	14,024	11,219
<b>Total</b>		<b>67,436</b>	<b>63,465</b>

Source: EDUs per unit from Table 32; existing units from Table 74, Appendix A.

## Cost per Service Unit

As previously mentioned, this study bases the park impact fee on the existing level of service, and measures that level of service in terms of the ratio of the replacement value of existing facilities to existing residential development. A full inventory of Lake County’s developed park land and recreational facilities utilized in calculating the impact fee for this update are shown in Table 84 of Appendix F.

In addition to developed park land, this update includes the County’s public lands program acquisitions, which had not been acquired at the time of the previous park impact fee update. Since the program was initiated by the voter approved public-lands referendum in 2004, the County has acquired more than 2,000 acres. The sites and their associated acreages are summarized in Table 34.

**Table 34. Public Land Inventory**

<b>Property</b>	<b>Acres</b>
Andrews Property	65.00
Robinson Property	20.00
Kuharske Property	809.00
Dead River Estates	8.50
J. & L. Ellis Property	64.00
Ellis Acres	95.60
Peavy/Cardinal Homes Property	82.00
Martone Property	46.00
Akron Meadows	323.00
Lake May	136.00
Neighborhood Lakes	210.00
Mt. Plymouth	190.00
<b>Total County-Owned Public Lands</b>	<b>2,049.10</b>

*Source:* Lake County Public Lands Program, December 9, 2009.

It should be noted that including public lands in the updated impact fee calculation has little effect on the amount of the fee, but would allow the County to spend park impact fee revenue to make recreational improvements to public lands. The inclusion of public lands has little effect on the fee because the value of the public land (\$30.1 million) is almost entirely offset by the credit for the \$29.8 million in outstanding debt.

Land acquisition is a significant cost related to park development in Lake County. The County has made more than ten major land purchases over the past five years as part of the Lake County Public Lands Program. These property acquisitions provide good guidance on land costs in that the sites are a mix of uplands, wetlands and lake access, and they are varied in location and size. Further, these types of properties represent the County’s focus on acquiring park sites greater than 10 acres for future parks and recreation use. The County’s land costs associated with the recent purchases are shown in Table 35. Based on the analysis of recent public land purchases, the parkland value used in this update is \$14,677 per acre.

**Table 35. Park Land Cost per Acre**

Property	Acres	Cost	Cost/Acre
Andrews Property	65.00	\$214,000	\$3,292
Robinson Property	20.00	\$123,280	\$6,164
Kuharske Property	809.00	\$6,676,725	\$8,253
Dead River Estates	8.50	\$582,500	\$68,529
J. & L. Ellis Property	64.00	\$950,000	\$14,844
Ellis Acres	95.60	\$2,661,000	\$27,835
Peavy/Cardinal Homes Property	82.00	\$536,250	\$6,540
Martone Property	46.00	\$449,000	\$9,761
Akron Meadows	323.00	\$3,892,500	\$12,051
Lake May	136.00	\$6,200,000	\$45,588
Neighborhood Lakes	210.00	\$5,000,000	\$23,810
<b>Total Public Land Purchases</b>	<b>1,859.10</b>	<b>\$27,285,255</b>	<b>\$14,677</b>

*Source:* Park land value based on Lake County Public Lands Program acquisitions and appraisals, December 9, 2009.

As show in Table 36, the replacement cost of the land associated with the County's parks and recreation areas and public land program is \$44.1 million.

**Table 36. Park Land Replacement Value**

Total Park and Recreation Acres	954.04
Total Public Land Program Acres	2,049.10
<b>Total Acres</b>	<b>3,003.14</b>
x Cost per Acre	\$14,677
<b>Total Land Value</b>	<b>\$44,077,086</b>

*Source:* Parks and recreation acres from Table 84, Appendix F; public land program acres from Table 34; cost per acre from Table 35.

For this analysis, the replacement cost of the County's recreational facilities and park amenities are based on standardized unit costs for major amenities. The cost data are based on recent construction experience in Lake County and cost estimates from the County's Parks and Trails Division. The replacement cost of the stand-alone trails includes construction, engineering/design, landscaping, but excludes the right-of-way acquisition costs. The right-of-way costs are reflected in the park land replacement value, since the acres associated with each trail are reflected in the facility inventory. The replacement cost for major standard park amenities is \$35.9 million based on the inventory of amenities and the standardized replacement costs, as shown in Table 37.

**Table 37. Park Amenity Replacement Cost**

Amenity Type	Unit	Cost	Units	Total Value
Baseball Field	Field	\$350,000	9.00	\$3,150,000
Basketball Court	Court	\$175,000	10.00	\$1,750,000
Boardwalk	Lin. Ft.	\$73	2,065.00	\$150,745
Blueway	Mile	\$400	145.90	\$58,360
Canoe Launch	Launch	\$19,500	5.00	\$97,500
Playground	Playground	\$75,000	28.00	\$2,100,000
Fishing Pier	Pier	\$97,000	3.00	\$291,000
Boat Ramp	Ramp	\$350,000	15.00	\$5,250,000
Horseshoe Pit	Pit	\$1,500	4.00	\$6,000
Irrigation	Acre	\$4,000	173.54	\$694,160
Kiosk	Kiosk	\$4,000	18.00	\$72,000
Landscaping	Acre	\$8,000	179.75	\$1,438,000
Multi-Use Field	Field	\$400,000	8.00	\$3,200,000
Parking Space	Space	\$1,660	1,429.00	\$2,372,140
Pavilion	Building	\$50,000	30.00	\$1,500,000
Restroom	Building	\$175,000	14.00	\$2,450,000
Tennis Court	Court	\$150,000	7.00	\$1,050,000
Stand-Alone Trail (Paved)	Mile	\$750,000	11.75	\$8,812,500
Trail (Paved)	Mile	\$400,000	2.90	\$1,160,000
Trail (Unpaved)	Mile	\$4,500	18.20	\$81,900
Volleyball Court	Court	\$35,000	5.00	\$175,000
<b>Total Amenity Value</b>				<b>\$35,859,305</b>

*Source:* Amenity replacement costs based on cost data compiled from recent construction, grant application and bid data from the Lake County Parks and Trails Division; stand-alone paved trail cost and bathroom cost from Lake County Parks and Trails Division, April 22, 2010; existing park amenities from Table 84, Appendix F.

Dividing the total replacement cost of existing park land and capital improvements by the number of existing service units yields the cost per EDU to maintain the existing level of service. As shown in Table 38, the value of the existing park land and improvements is \$79.9 million. The cost per EDU to maintain the current level of service, based on both land and improvement costs is \$1,260 per EDU.

**Table 38. Park Cost per Service Unit**

Park Land Value	\$44,077,086
Park Amenity Value	\$35,859,305
<b>Total Park Facility Value</b>	<b>\$79,936,391</b>
÷ Park Service Units	63,465
<b>Toal Park Value per Service Unit (EDU)</b>	<b>\$1,260</b>

*Source:* Park land value from Table 35; park amenities value from Table 37; park EDUs from Table 33.

## Net Cost per Service Unit

The County has traditionally funded park land acquisition and improvements through a mix of funds including impact fees, the County's park Municipal Service Taxing Unit (MSTU) property tax, sales tax and general fund revenue. The MSTU property tax for parks is used for both operating expenditures and capital improvements and is only levied in the unincorporated area of the county. The County also uses some general fund for capital improvement projects, but the County does not earmark any property tax funds for capital improvements, and, instead, programs such funds for capital projects on an "as available" basis. No credit is provided for such discretionary funding, not only because it is difficult to predict, but also because it is paid by both existing and new development and raises the level of service for all.

The 2003 study did not calculate any specific revenue credits because grants are unpredictable and no County funds are earmarked for future capacity improvements. Instead, the 2003 study provided a 10-percent credit on the assumption that the County may wish to fund 10 percent of growth costs with non-impact fee revenue.

The County has two outstanding park-related bond issues. There was a special obligation bond issued for park facilities in 2000 and the public lands general obligation bond issue in 2007. A simple method that ensures that new development is not required to pay for existing facilities, through the surtax or other funds used for debt retirement, as well as new facilities through impact fees, is to calculate the credit by dividing the outstanding debt by existing service units. Reducing the impact fee by this amount places new development on an equal footing with existing development in terms of the use of debt funding for improvements. Based on the outstanding park debt, the debt credit is approximately \$526 per service unit, as shown in Table 39.

**Table 39. Park Debt Credit**

Public Lands GO Bonds, Series 2007	\$29,820,000
Special Obligation Bonds-Parks, Series 2000	\$3,545,000
<b>Total Outstanding Park-Related Bond Issues</b>	<b>\$33,365,000</b>
÷ Park Service Units (EDUs)	63,465
<b>Debt Credit per Service Unit (EDU)</b>	<b>\$526</b>

*Source:* Bond issues and outstanding principal from Lake County Budget Division, December 16, 2009; EDUs from Table 33.

Aside from impact fee funds, the programmed revenues in the current 2010-2014 Capital Improvement Program (CIP) include MSTU funding, general fund and the sales tax. The Park MSTU is collected from properties located in the unincorporated area of the county. The general fund revenues are generated by county-wide property tax and the County's one-half penny share of the State's six-cent sales tax. The sales tax funding is generated from the county-wide one-cent infrastructure sales tax levy. The only one of these three funding sources that is dedicated for infrastructure improvements is the infrastructure sales tax. As shown in Table 40, the County has programmed \$3.1 million for capacity-increasing, sales tax-funded park projects in the current CIP.

**Table 40. Park Facility Tax-Funded CIP Funding**

<b>Capital Improvement</b>	<b>Funding Source</b>	<b>Funding 2010-14</b>
Astor Lions Club Park Improvements	Sales Tax/MSTU	\$150,000
East Lake Community Park	Sales Tax/MSTU	\$773,609
Lake Idamere Park Playground and Pavilion	Sales Tax/MSTU	\$400,292
N. Lake Community Park Phase II	Sales Tax/MSTU	\$600,000
PEAR Park Improvements	Sales Tax/MSTU	\$663,087
Paisley Park Amenities Construction	Sales Tax/MSTU	\$25,000
Palatlahaha River Park/Boat Ramp Improvements	Sales Tax/MSTU	\$76,831
Woodlea Sports Complex	Sales Tax	\$250,000
PEAR Park Entry Road	Sales Tax	\$200,000
<b>Total Funded Capital Improvements, 2009/10-2013/14</b>		<b>\$3,138,819</b>

*Source:* CIP funding from *Lake County Capital Improvement Program FY 2010-2014*, January 2010.

In order to calculate the credit associated with programmed sales tax-funded capacity improvements, the average annual improvement funding is divided by the number of county-wide EDUs and multiplied by the equivalent current value of the future stream of funding over the next 25 years. Based on these calculations, the tax credit for park facilities is \$148 per service unit, as shown in Table 41.

**Table 41. Park Sales Tax Credit**

Sales Tax Funded Park Improvements, 2009/10-2013/14	\$3,138,819
÷ Years in Capital Improvement Plan	5
Annual Sales Tax Capital Improvement Funding	\$627,764
÷ Existing Park EDUs	63,465
Sales Tax Capital Funding per Functional Population	\$9.89
x Present Value Factor (25 years @ 4.4% discount rate)	14.98
<b>Park Sales Tax Credit per Service Unit (EDU)</b>	<b>\$148</b>

*Source:* Total funded capital improvement from Table 41; existing EDUs from Table 33; present value factor based on 25 years at 4.4% discount rate based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data/monthly>.

Finally, a credit is provided in this study for capacity-expanding grant funding for parks and recreational facilities provided by State and Federal agencies over the past five fiscal years. While the County has not received any Federal grants, grants for park improvements have been provided by the State Land and Water Conservation Fund and the Recreation Development Assistance Program. Based on this recent grant history, it could reasonably be anticipated that the County will continue to receive similar funding in the future. As shown in Table 42, the grant credit is \$35 per service unit based on the present value of annual grant funding per service unit and recent grant history.

**Table 42. Park State Grant Credit**

Year	Grant	Source	Funding
2007	Lake Idamere Park	Land & Water Conservation Fund	\$200,000
2008	Twin Lakes Park	FL Rec. Development Assist. Prog.	\$150,000
2009	Palatlahaha Env. Reserve	Land & Water Conservation Fund	\$200,000
2009	Northeast Comm. Park	FL Rec. Development Assist. Prog.	\$200,000
Total Grants, 2006-2010			\$750,000
÷ Years			5
Average Annual Grant Funding, 2006-2010			\$150,000
÷ Park Service Units (EDUs)			63,465
Annual Grant Funding per EDU			\$2.36
x Present Value Factor (25 years @ 4.4% discount rate)			14.98
<b>Grant/External Funding Credit per Service Unit (EDU)</b>			<b>\$35</b>

Source: Grant funding history from Lake County Parks and Trails Division, December 16, 2009; existing EDUs from Table 33; present value factor based on 25 years at 4.4% discount rate for present value factor from notes to Table 41.

Reducing the cost per service unit by the debt, sales tax and grant credit per service unit leaves a park net cost of \$551 per service unit (EDU), as shown in Table 43.

**Table 43. Park Net Cost per Service Unit**

Total Park Value per EDU	\$1,260
– Debt Credit per EDU	-\$526
– Infrastructure Sales Tax Credit per EDU	-\$148
– Grant Funding Credit per EDU	-\$35
<b>Net Cost per Service Unit (EDU)</b>	<b>\$551</b>

Source: Park value per EDU from Table 38; debt credit per unit from Table 39; sales tax credit from Table 41; grant funding credit from Table 42.

## Potential Fee Schedule

The maximum fees that can be adopted by the County based on this study are derived by multiplying the EDUs associated with each dwelling unit type by the net cost per EDU for parks, as shown in Table 44.

**Table 44. Potential Park Impact Fee Schedule**

Housing Type	EDUs/ Unit	Cost/ Unit	Net Cost/ Unit
Single-Family, Detached			
Less than 1,500 sf	0.92	\$551	\$507
1,500 to 2,499 sf	1.00	\$551	\$551
2,500 sf or greater	1.11	\$551	\$612
Multi-Family	0.77	\$551	\$424
Mobile Home Park	0.80	\$551	\$441
Active Adult Community	0.73	\$551	\$402

Source: EDUs per unit from Table 32; net cost per EDU from Table 43.

**Comparative Fees**

The potential area park fees calculated in this report are compared with the current fees in Table 45. Based on the cost of existing park facilities and updated credit, the updated fees would more than double for most housing types.

**Table 45. Park Impact Fee Comparison**

<b>Housing Type</b>	<b>Current Fee</b>	<b>Potential Fee</b>	<b>Change</b>
Single-Family, Detached			
Less than 1,500 sf	\$222	\$507	\$285
1,500 to 2,499 sf	\$222	\$551	\$329
2,500 sf or greater	\$222	\$612	\$390
Multi-Family	\$171	\$424	\$253
Mobile Home Park	\$177	\$441	\$264
Active Adult Community	\$222	\$402	\$180

*Source:* Potential fees from Table 44; current fees from Lake County Code.

## LIBRARIES

Lake County charges a library impact fee on new residential development in the unincorporated area of the county and in participating municipalities. The fees were last updated in 2003, based on a 2003 study by Henderson Young & Company (referred to here as the 2003 study).<sup>10</sup> This report calculates the potential impact fees that could be charged to new development based on updated cost data and the current library facilities.

The Lake County Library System is a cooperative library system that provides free library services to all county residents. In addition to the County's participation, all municipalities except Eustis participate in the library co-op and impact fee. The participating municipalities own their own facilities and budget money separately for the library operations. The County's library facilities include six County branch libraries and nine member libraries. One of the County branch libraries, Cooper Library, is jointly run by the County and Lake-Sumter Community College.



### Service Areas

The library impact fees are assessed in the areas of the county participating in the impact fee, including the unincorporated area and all municipalities except Eustis. The individual libraries in the Lake County Library System are connected by inter-library loans and other resource-sharing programs. A single service area is appropriate for the library system, since each library in the system has access to the entire library collection of member libraries.

### Level of Service

The library impact fees are based on the existing level of service provided to residents in the impact fee service area by the Lake County Library System. As with the park impact fees, the library level of service is based on the number of equivalent dwelling units. The level of service used in developing the impact fees in this study is based on the ratio of the replacement value of existing facilities to the measure of existing residential development based on single-family equivalent dwelling units.

### Service Unit

As with the park impact fee, the library service unit used in this study is the “equivalent dwelling unit” or EDU, which represents the impact of a typical single-family detached dwelling. A typical single-family unit represents one EDU. Other types of residential units each represent a fraction of an EDU, based on their relative household sizes.

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<sup>10</sup> Henderson Young & Company, *Impact Fees for Library Facilities in Lake County*, Florida, July 2003

## Libraries

Since library facilities are generally used by individuals rather than businesses or other nonresidential land uses, the library impact fees are only charged to residential land uses and the service units are based on residential units. As a result, the demand for library facilities is proportional to the number of people in a dwelling unit. The relative EDUs associated with each housing category are the same as those used for parks and recreation (see Table 32). The estimate of existing dwelling units in the library impact fee service area is derived from existing housing data in Appendix A. The total EDUs are developed by multiplying the number of existing residential units in all areas of the county, excluding Eustis, by the EDUs per unit. As shown in Table 46, there are 114,599 library service units (EDUs).

**Table 46. Existing Library Service Units**

Housing Type	EDUs/ Unit	Total Units	Total EDUs
Single-Family, Detached	1.00	85,250	85,250
Multi-Family	0.77	17,796	13,703
Mobile Home Park	0.80	19,558	15,646
<b>Total</b>		<b>122,604</b>	<b>114,599</b>

Source: EDUs per unit from Table 32; existing units include all county-wide units, excluding Eustis, from Table 74, Appendix A.

## Cost per Service Unit

As with the current library impact fee, this update is based on the existing county-wide level of service. The level of service in this update is measured in terms of the ratio of replacement value of existing facilities to existing residential development. The Lake County Library System's existing member library facilities, equipment and collection materials are utilized to determine the cost per service unit. The uniform replacement costs for the facilities, land, collection materials and computers are based on recent Lake County library costs. The County Library System has added three new facilities since 2007, including the Leesburg Library, Cooper Library and Cagan Crossings Library. As shown in Table 47, the average cost for recent library construction is \$246 per square foot; these costs include design/engineering, construction, furniture, fixtures and equipment and construction-related expenses such as permits and site work.

**Table 47. Lake County Library Construction Costs**

Facility	Cost	Sq. Ft.	Cost/ Sq. Ft.
Leesburg Library	\$8,330,892	43,980	\$189
Cooper Memorial Library	\$13,939,192	50,000	\$279
Cagan Crossings Comm. Library	\$8,296,699	30,456	\$272
<b>Average Cost</b>	<b>\$30,566,783</b>	<b>124,436</b>	<b>\$246</b>

Source: Lake County Library Services, December 16, 2009.

The existing facilities are summarized in Table 48. For the impact fee calculation, all shared sites are assumed to have one acre associated with the library facility. For the Cooper Memorial library, which is shared with Lake-Sumter Community College, one-half of the site acreage and building square feet are allocated to the County library system. The land costs used in the analysis of the level of service are based on the most recent land purchase for the Cagan Crossings Library, which was approximately \$43,000 per acre.

Table 48. Existing Library Facilities

Facility	Acres	Sq. Ft.	Land Value	Building Value
LCLS Headquarters	1.39	5,607	\$60,173	\$1,379,322
Astor County Library*	1.00	4,167	\$43,290	\$1,025,082
Cagan Crossings Community Library	2.31	30,456	\$100,000	\$7,492,176
Cooper Memorial Library**	0.50	25,000	\$21,645	\$6,150,000
East Lake County Library*	1.00	4,974	\$43,290	\$1,223,604
Fruitland Park Library	0.31	6,303	\$13,420	\$1,550,538
Helen Lehman Memorial Library	0.65	3,200	\$28,139	\$787,200
Lady Lake Public Library*	1.00	8,385	\$43,290	\$2,062,710
Leesburg Public Library	0.56	43,980	\$24,242	\$10,819,080
Marianne Beck Memorial Library	0.36	2,580	\$15,584	\$634,680
Marion Baysinger Memorial Library	1.20	4,500	\$51,948	\$1,107,000
Minneola Schoolhouse Library	0.14	1,076	\$6,061	\$264,696
Paisley County Library*	1.00	4,200	\$43,290	\$1,033,200
City of Tavares Public Library*	1.00	9,100	\$43,290	\$2,238,600
Umatilla Public Library*	1.00	8,620	\$43,290	\$2,120,520
W.T. Bland Public Library	3.61	15,091	\$156,277	\$3,712,386
<b>Total Replacement Cost</b>			<b>\$737,229</b>	<b>\$43,600,794</b>

\* Library shares site with other facilities and site associated with library assumed to be up to 2.5 acres.

\*\* Cooper Library site and facility shared with Lake-Sumter Community College; one-half of the facility and site are allocated to the County.

Source: Square feet and site information from Lake County Library System, December 16, 2009; facility cost per square feet from Table 47; land value per acre of \$43,290 based on cost to acquire Cagan Crossings site from Lake County Library System, December 16, 2009.

The collection and computer replacement costs are based on standardized costs provided by the Lake County Library System and are based on their most recent average initial purchase costs. As shown in Table 49, the replacement costs are \$14.0 million for collection materials and \$0.3 million for public access computers.

Table 49. Library Collection and Public Computer Costs

Facility	Collection Materials		Public Computers	
	Items	Value	Units	Value
Astor County Library	21,052	\$461,039	12	\$9,781
Cagan Crossings Community Library	43,710	\$957,249	33	\$26,898
Cooper Memorial Library	73,438	\$1,608,292	130	\$105,960
East Lake County Library	35,970	\$787,743	9	\$7,336
Fruitland Park Library	37,086	\$812,183	14	\$11,411
Helen Lehman Memorial Library	13,247	\$290,109	6	\$4,890
Lady Lake Public Library	50,631	\$1,108,819	26	\$21,192
Leesburg Public Library	131,386	\$2,877,353	68	\$55,425
Marianne Beck Memorial Library	9,848	\$215,671	10	\$8,151
Marion Baysinger Memorial Library	27,081	\$593,074	12	\$9,781
Minneola Schoolhouse Library	4,171	\$91,345	3	\$2,445
Paisley County Library	26,642	\$583,460	11	\$8,966
City of Tavares Public Library	49,573	\$1,085,649	9	\$7,336
Umatilla Public Library	35,550	\$778,545	27	\$22,007
W.T. Bland Public Library	78,072	\$1,709,777	19	\$15,487
<b>Total Replacement Cost</b>		<b>\$13,960,308</b>		<b>\$317,066</b>

Source: Inventory from Lake County Library Services, December 16, 2009, value based on replacement cost of \$21.90 for collection materials and \$815 for computers.

## Libraries

In addition to the collections and public access computers, many of the library facilities include specialized equipment available for patron use, such as projectors, printers and micro-film readers. The total value of specialized equipment is \$113,907, as shown in Table 50.

**Table 50. Library Equipment Replacement Cost**

Library	Equipment	Value
Astor County Library	Proxima projector	\$3,475
Cagan Crossings Community Library	Proxima projector	\$4,899
Cooper Memorial Library	InFocus projector	\$2,184
	Microfilm reader-printer	\$16,000
East Lake County Library	Proxima projector	\$4,899
Helen Lehman Memorial Library	Copier	\$2,000
	Television	\$2,000
Lady Lake Public Library	2 copiers	\$6,000
	Video magnifier	\$2,500
Leesburg Public Library	Smartboard	\$2,000
	2 digital projectors	\$3,000
	2 microfilm reader/printers	\$6,000
	2 copiers	\$6,000
Marianne Beck Memorial Library	Copier	\$2,500
	Television	\$2,000
Marion Baysinger Memorial Library	Proxima projector	\$3,475
Paisley County Library	Proxima projector	\$3,475
City of Tavares Public Library	Television	\$2,000
	Copier	\$2,500
Umatilla Public Library	Piano	\$8,600
	Video projector	\$1,300
	Electric projection screen	\$1,600
W.T. Bland Public Library	Self-checkout/security system	\$24,000
	Digital projector	\$1,500
<b>Total Replacement Cost</b>		<b>\$113,907</b>

Source: Equipment and replacement cost from Lake County Library Services, December 16, 2009.

The capital cost per service unit is calculated by dividing the total replacement cost of existing capital facilities by the library service units. As shown in Table 51, the capital replacement cost of existing library facilities, collections and major capital equipment is \$512 per service unit.

**Table 51. Library Cost per Service Unit**

Library Buildings	\$43,600,794
Library Land	\$737,229
Collection Materials	\$13,960,308
Public Computers	\$317,066
Library Equipment	\$113,907
<b>Total Library Cost</b>	<b>\$58,729,304</b>
÷ Existing Library EDUs	114,599
<b>Library Cost per EDU</b>	<b>\$512</b>

Source: Library land and facility cost from Table 48; collection and computer cost from Table 49; library equipment cost from Table 50; existing EDUs from Table 46.

## Net Cost per Service Unit

As discussed in the introduction, impact fees must be adjusted to take into consideration that new development will be generating future revenues that will be used to retire outstanding debt for existing library facilities. Another factor that should be considered, as in the park impact fee, is other outside funding sources that could cover a portion of growth-related costs.

There is no outstanding debt for County-owned library facilities. Currently, the Leesburg library is the only facility with outstanding debt. While debt has been issued for the Town of Lady Lake library improvements, those improvements have not been completed and are not included in the level of service used in calculating the impact fee; thus, a credit for the Lady Lake library is not necessary in this update. Since the Leesburg facility debt is being repaid through municipal property tax collections and is not being repaid by taxpayers in other areas of the county, the credit for the facility's debt applies to Leesburg. As shown in Table 52, there are an estimated 8,578 EDUs in Leesburg.

**Table 52. Leesburg Existing Service Units**

Housing Type	EDUs/ Unit	Total Units	Total EDUs
Single-Family, Detached	1.00	5,256	5,256
Multi-Family	0.77	4,077	3,139
Mobile Home Park	0.80	229	183
<b>Total</b>		<b>9,562</b>	<b>8,578</b>

Source: EDUs per unit from Table 32; existing units include all county-wide units aside from Eustis from Table 74, Appendix A.

To avoid double-charging, new development in Leesburg should not be required to pay for new library facilities required to serve it through impact fees, while also having to pay for the debt on the existing Leesburg library facility. As shown in Table 53, the credit related to the outstanding debt for the Leesburg library facility is \$500 per EDU.

**Table 53. Leesburg Library Debt Credit**

Leesburg Library Bond Funding	\$6,000,000
÷ Leesburg Series 2004 Bond Issue	\$17,110,000
Library Share of 2004 Bond Issue	35%
x Current Principal Balance	\$12,261,813
Library Share of Current Balance	\$4,291,634
÷ Leesburg Library Service Units	8,578
<b>Leesburg Library Facility Debt per EDU</b>	<b>\$500</b>

Source: Leesburg library bond information provided by Lake County Library Services, December 18, 2009; existing EDUs from Table 52.

As with the other facilities in this study, a credit is provided for capacity-expanding grant funding for library facilities over the past five years. The County has received State library construction grants for each of the three recently constructed libraries. In addition, some private and Federal grants have been received for expanding collections and construction. Based on this recent grant history, it could reasonably be anticipated that the County will continue to receive similar funding in the future.

## Libraries

to help offset construction of new libraries. As shown in Table 54, the grant credit is \$64 per EDU based on the present value of annual grant funding per service unit and recent grant history.

**Table 54. Library Grant Credit**

Year	Grant	Source	Amount
2006	Public Access Computers	Private	\$55,000
2006	Cagan Crossings Library Construction	Private	\$27,000
2007	Cagan Crossings Library Construction	Private	\$275,000
2007	Cagan Crossings Library Construction	State	\$500,000
2007	Cagan Crossings Library Construction	Fed	\$198,000
2007	LSTA Collection Funding	Fed	\$1,750
2008	Leesburg Library Construction	Private	\$345,769
2008	Leesburg Library Construction	State	\$500,000
2008	LSTA Collection Funding	Fed	\$25,700
2009	Cooper Memorial Library Construction	State	\$500,000
Total Grants, 2006-2010			\$2,428,219
÷ Years			5
Average Annual Grants			\$485,644
÷ Existing Library EDUs			114,599
Grant Funding per EDU			\$4.24
x Present Value Factor (25 years @ 4.4% discount rate)			14.98
<b>Grant Credit per EDU</b>			<b>\$64</b>

*Source:* Lake County Library Services, December 18, 2009; existing EDUs from Table 46; discount rate for present value factor based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data/monthly>.

The County also receives State library aid. While the County has received more than \$200,000 annually over the past five years, only about \$50,000 each year is used for capital equipment, such as computers, equipment and collections. As shown in Table 55, the State aid credit is \$7 per EDU based on the present value of an annual allocation of \$50,000 to capital equipment.

**Table 55. State Library Aid Credit**

State Aid Average Annual Capacity Expenditure	\$50,000
÷ Existing Library EDUs	114,599
State Aid Funding per EDU	\$0.44
x Present Value Factor (25 years @ 4.4% discount rate)	14.98
<b>State Aid Credit per EDU</b>	<b>\$7</b>

*Source:* Lake County Library Services, December 18, 2009; existing EDUs from Table 46; discount rate for present value factor from Table 54.

An additional credit to account for County tax revenue programmed for planned library improvements is not necessary, because any such funding is discretionary and would be used to raise the level of service for both existing and new residents. In any case, there are currently no programmed tax-funded library improvements in the County's five-year CIP. Reducing the cost per service unit by the debt, grant and State Aid credits results in the net cost per EDU, as shown in Table 56. Since the Leesburg debt credit and other county-wide credits exceeds the total cost per EDU, the City should not collect the library impact fee. New residential development in Leesburg

will essentially be paying its share of library capital costs through property taxes used to retire library debt.

**Table 56. Library Net Cost per Service Unit**

	County	Leesburg
Total Cost per EDU	\$512	\$512
– Debt Credit/EDU	\$0	-\$500
– Grant Credit/EDU	-\$64	-\$64
– State Aid Credit/EDU	-\$7	-\$7
<b>Net Cost per EDU</b>	<b>\$441</b>	<b>\$0</b>

*Source:* Total cost per EDU from Table 51; Leesburg debt credit from Table 53; grant credit from Table 54; State aid credit from Table 55.

## Potential Fee Schedule

The net cost per development unit is derived by multiplying the net cost per EDU by the number of EDUs per development unit. The potential impact fees that could be charged based on the existing level of service for library facilities are shown in Table 57. These updated fees apply to the unincorporated area and all participating cities except Leesburg.

**Table 57. Potential Library Impact Fee Schedule**

Housing Type	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Single-Family, Detached			
Less than 1,500 sf	0.92	\$441	\$406
1,500 to 2,499 sf	1.00	\$441	\$441
2,500 sf or greater	1.11	\$441	\$490
Multi-Family	0.75	\$441	\$331
Mobile Home Park	0.96	\$441	\$423
Active Adult Community	0.73	\$441	\$322

*Source:* EDUs per unit from Table 32; net cost per EDU based on the cost per EDU from Table 51.

## Comparative Fees

The County's current impact fees for library facilities are compared with the potential fees calculated in this report in Table 58. The fee could be more than doubled for most housing types. The variation in the rate of change reflects the change to tiered single-family fees and the updated demand factors.

**Table 58. Library Impact Fee Comparison**

Housing Type	Current Fee	Potential Fee	Change
Single-Family, Detached			
Less than 1,500 sf	\$191	\$406	\$215
1,500 to 2,499 sf	\$191	\$441	\$250
2,500 sf or greater	\$191	\$490	\$299
Multi-Family	\$146	\$331	\$185
Mobile Home Park	\$152	\$423	\$271
Active Adult Community	\$191	\$322	\$131

*Source:* Proposed fees from Table 57; current fees from Lake County Code.

## FIRE RESCUE

Lake County assesses a fire rescue impact fee on new development in the unincorporated area of the county and participating municipalities. The fire rescue impact fee is charged in the areas served by the Lake County Fire Department, which includes the unincorporated area of the county, Astatula, Howey-in-the-Hills and part of Lady Lake. The fees were last updated in 2003, based on a 2003 study by Henderson Young & Company (referred to here as the 2003 study).<sup>11</sup> This report calculates the potential impact fees that could be charged to new development based on updated cost data and the current facilities.

In addition to impact fees, the Fire Department is funded with non-ad valorem assessments levied on property in the fire rescue district. The fire rescue services include firefighting, basic life support, advanced life support medical response, special operations and public education. The locations of the County's existing fire stations are illustrated in Figure 4.

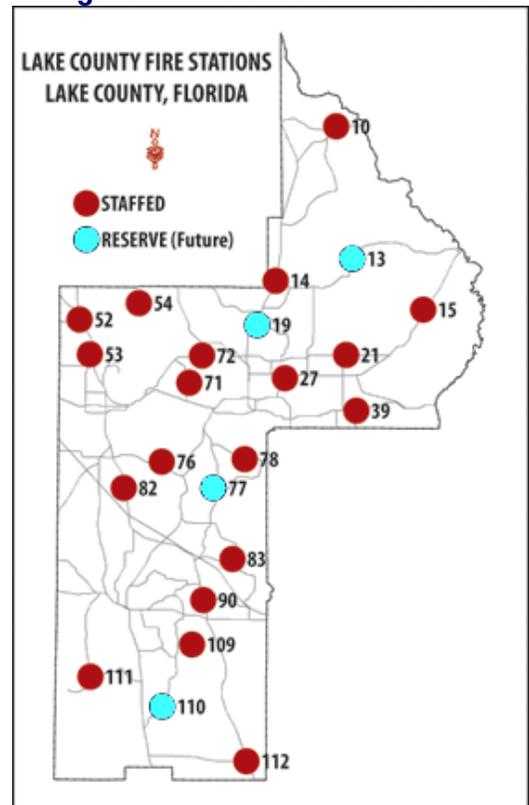
### Service Areas

The County currently has a single unified fire rescue impact fee assessment and benefit district, or "service area." The service area includes all of the areas served by the Lake County Fire Department. A single service area is appropriate for fire rescue, since the Department operates as a unified system with fire apparatus from each station assisting in responding to calls in other parts of the county.

### Level of Service

The fire rescue impact fees are based on the overall level of service provided to residents in the impact fee service area by the Lake County Fire Department. The methodology used by Henderson Young in the 2003 study divided the cost of buildings and equipment by the useful life of the improvement (40 years for stations, 3 to 10 years for vehicles) in order to determine an annual cost. The annual cost was then multiplied by the useful live of the new development to determine the amount of the fee. While innovative and not without intuitive appeal, such an approach raises a number of thorny issues, including the extent to which existing development has paid for the future replacements needed to serve its economic life, how to keep track of which replacements are eligible for impact fee funding, and how to ensure that the impact fee funds are available to fund the future

Figure 4. Fire Station Locations



<sup>11</sup> Henderson Young & Company, *Impact Fees for Fire Rescue Facilities in Lake County*, Florida, July 2003

## Fire Rescue

eligible replacements when the ordinance requires that they must be expended within six years of when they are paid. Given these issues, the complexities added by this approach and the limited benefits, this study bases the updated impact fees on the initial capital cost, rather than on annualized costs.

The level of service is based on the number of dwelling units and amount of nonresidential building square footage in the fire rescue service area. The level of service used in developing the impact fees in this study is based on the ratio of the replacement value of existing facilities and equipment to the number of single-family equivalent dwelling units. The demand factors for each land use type are based on the annual number of fire rescue calls per development unit for various land use categories relative to single-family demand per unit.

## Service Units

Different types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for service. This common unit of measurement is referred to as a “service unit.” This study utilizes the Equivalent Dwelling Unit, or EDU, as the basis for measuring the demand for fire rescue services for each land use relative to the impact of a typical single-family dwelling unit.

This study maintains the use of call data to calculate the relative demand for fire rescue service for the major land use categories. This study utilizes three years of call data. As shown in Table 59, the County has averaged 15,557 calls per year, with 11,520 of these calls allocated to specific land uses.

**Table 59. Fire Rescue Call Data**

<b>Land Use</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Single-Family, Detached	5,378	5,775	5,689	<b>5,614</b>
Multi-Family	576	583	498	<b>552</b>
Mobile Home Park	3,595	3,623	3,767	<b>3,662</b>
Retail/Commercial	536	792	885	<b>738</b>
Office	60	51	30	<b>47</b>
Industrial/Manufacturing	120	146	117	<b>128</b>
Warehouse	109	115	142	<b>122</b>
Public/Institutional	582	642	748	<b>657</b>
<b>Total Allocated Calls</b>	<b>10,956</b>	<b>11,727</b>	<b>11,876</b>	<b>11,520</b>
<b>Unallocated Calls</b>	<b>5,330</b>	<b>3,670</b>	<b>3,110</b>	<b>4,037</b>
<b>Total Calls</b>	<b>16,286</b>	<b>15,397</b>	<b>14,986</b>	<b>15,557</b>

*Source:* Call data from Lake County Fire Department, December 15, 2009.

Some of the calls are not directly related to existing land uses, but typically occur on streets or in parking lots and are related to movement between land uses. The unallocated incidents account for approximately 26% of the fire rescue responses. These fire rescue responses are allocated according to the percentage of daily vehicle-miles of travel (VMT) generated by each land use category, as shown in Table 60.

**Table 60. Unallocated Fire Rescue Calls by Land Use**

Land Use	Units	Existing Units	VMT/Unit	Total VMT	Percent of VMT	Share of Unallocable
Single-Family, Detached	Dwelling	47,648	35.36	1,684,833	63.6%	<b>2,567</b>
Multi-Family	Dwelling	6,648	11.16	74,192	2.8%	<b>113</b>
Mobile Home Park	Dwelling	12,951	13.18	170,694	6.4%	<b>260</b>
Retail/Commercial	1,000 sq. ft.	6,978	48.19	336,270	12.7%	<b>512</b>
Office	1,000 sq. ft.	5,697	35.15	200,250	7.6%	<b>305</b>
Industrial/Manufacturing	1,000 sq. ft.	3,633	19.10	69,390	2.6%	<b>106</b>
Warehouse	1,000 sq. ft.	2,585	17.80	46,013	1.7%	<b>70</b>
Public/Institutional	1,000 sq. ft.	5,451	12.55	68,410	2.6%	<b>104</b>
<b>Total</b>				<b>2,650,052</b>		<b>4,037</b>

Source: Existing residential units in the fire rescue MSTU from Table 68 and nonresidential units from Table 72, Appendix A; VMT/unit from Table 21; unallocated calls from Table 59.

The combination of existing land use and fire rescue call distribution data sets yields the fire rescue calls per unit for the major land use categories. The calls per unit are then converted to EDUs per unit, as shown in Table 61.

**Table 61. Fire Rescue Equivalent Dwelling Unit Multipliers**

Land Use	Units	Existing Units	Calls for Service			Calls/Unit	EDUs/Unit
			Alloc.	Other	Total		
Single-Family, Detached	Dwelling	47,648	5,614	2,567	8,181	0.172	<b>1.00</b>
Multi-Family	Dwelling	6,648	552	113	665	0.100	<b>0.58</b>
Mobile Home Park	Dwelling	12,951	3,662	260	3,922	0.303	<b>1.76</b>
Retail/Commercial	1,000 sq. ft.	6,978	738	512	1,250	0.179	<b>1.04</b>
Office	1,000 sq. ft.	5,697	47	305	352	0.062	<b>0.36</b>
Industrial/Manufacturing	1,000 sq. ft.	3,633	128	106	234	0.064	<b>0.37</b>
Warehouse	1,000 sq. ft.	2,585	122	70	192	0.074	<b>0.43</b>
Public/Institutional	1,000 sq. ft.	5,451	657	104	761	0.140	<b>0.81</b>

Source: Existing residential units in the fire rescue MSTU from Table 68 and nonresidential units from Table 72, Appendix A; allocated calls from Table 59; unallocated calls from Table 60.

The residential fee categories in this update are consistent with the categories used in each fee update for this study. The single-family category includes three separate unit size categories. The tiered EDU ratios are based on the ratio of unit household size to the overall un-tiered average household size. The EDU multipliers for tiered single-family and active adult community units are shown in Table 62.

**Table 62. Additional Residential Equivalent Dwelling Unit Multipliers**

Housing Type	Ratio to Avg. Single-Family	EDUs/Unit
Single-Family, Detached		
Less than 1,500 sf	91.8%	<b>0.92</b>
1,500 to 2,499 sf	99.6%	<b>1.00</b>
2,500 sf or greater	110.8%	<b>1.11</b>
Active Adult Community	73.2%	<b>0.73</b>

Source: Tiered household size data from Table 77, Appendix A.

## Fire Rescue

This update proposes consolidating the nonresidential land uses into seven broad categories that are consistent with those proposed for the transportation impact fee update. The EDU multipliers for the recommended residential and nonresidential land use categories are summarized in Table 63.

**Table 63. Fire Rescue Service Unit Multipliers**

Land Use	Unit	EDUs/Unit
Single-Family, Detached (All)	Dwelling	1.00
Less than 1,500 sf	Dwelling	0.92
1,500 to 2,499 sf	Dwelling	1.00
2,500 sf or greater	Dwelling	1.11
Multi-Family	Dwelling	0.58
Mobile Home Park	Dwelling	1.76
Active Adult Community	Dwelling	0.73
Lodging*	Room	0.52
Retail/Commercial	1,000 sq. ft.	1.04
Office	1,000 sq. ft.	0.36
Industrial/Manufacturing	1,000 sq. ft.	0.37
Warehouse	1,000 sq. ft.	0.43
Mini-Warehouse**	1,000 sq. ft.	0.43
Public/Institutional	1,000 sq. ft.	0.81

\*Lodging EDUs/unit based on retail/commercial rate per 1,000 sq. ft., assumes 500 sq. ft. room.

\*\*Mini warehouse rate based on warehouse rate.

Source: EDU per unit from Table 61; residential tiered EDUs/unit from Table 62.

The EDU total is based on the current residential and nonresidential units in the fire rescue service areas of the county, which includes the unincorporated area, Astatula, Howey-in-the-Hills and part of Lady Lake. As shown in Table 64, there are an estimated 90,477 EDUS in the fire rescue service area.

**Table 64. Fire Rescue Service Units, 2010**

Land Use	Unit of Measure	Existing Units	EDUs	
			per Unit	Total
Single-Family, Detached (All)	Dwelling	47,648	1.00	47,648
Multi-Family	Dwelling	6,648	0.58	3,856
Mobile Home Park	Dwelling	12,951	1.76	22,794
Retail/Commercial	1,000 sq. ft.	6,978	1.04	7,257
Office	1,000 sq. ft.	5,697	0.36	2,051
Industrial/Manufacturing	1,000 sq. ft.	3,633	0.37	1,344
Warehouse	1,000 sq. ft.	2,585	0.43	1,112
Public/Institutional	1,000 sq. ft.	5,451	0.81	4,415
<b>Total EDUs</b>				<b>90,477</b>

Source: Residential units in the fire rescue MSTU from Table 74 and nonresidential units from Table 78, Appendix A; EDUs per unit from Table 63.

## Cost per Service Unit

The fire rescue impact fee service area, which is the same as the County's fire rescue MSTU, (unincorporated areas of Lake County, Astatula, Howey-in-the-Hills and part of Lady Lake) is served by 20 county-owned fire stations. The facility and land for Station 14 are owned by the School Board and Station 90 is run out of a portable building located on County Public Works land. In addition to the fire stations, fire facilities include training, storage and maintenance sites. The maintenance facility is owned by Astatula; it is included in the level of service for this study, because Astatula participates in the fire rescue MSTU and is part of the impact fee service areas. The fire rescue impact fee excludes EMS, which is provided by private, non-profit Lake-Sumter EMS. Table 65 summarizes the County's existing fire rescue building and land inventory. The replacement costs of the stations are based on the Station 13 construction cost of \$195 per square foot. The land cost of \$23,000 per acre is based on the cost to acquire the Station 13 site in 2008.

**Table 65. Fire Rescue Building and Land Cost**

Station #	Location	Sq. Ft.	Acres	Replacement Value	
				Building	Land
10	SR 40, Astor	4,760	4.14	\$928,200	\$95,220
13	CR 42, Paisley	7,439	5.00	\$1,450,605	\$115,000
14	SR 19, Altoona	1,760	0.75	\$343,200	\$17,250
15	Palm Drive, Eustis	3,600	0.50	\$702,000	\$11,500
19	Carroll St., Umatilla (Reserve)	2,400	0.50	\$468,000	\$11,500
Storage	SR 19, Umatilla	4,800	1.00	\$936,000	\$23,000
21	CR 44 A, Eustis	3,600	1.00	\$702,000	\$23,000
27	SR 44, Eustis	6,400	1.00	\$1,248,000	\$23,000
39	Walton Heath Ave, Sorrento	3,080	1.75	\$600,600	\$40,250
52	306 W. Hermosa St., Lady Lake	7,679	2.00	\$1,497,405	\$46,000
53	Spring Lake Rd., Fruitland Park	4,160	0.75	\$811,200	\$17,250
54	Lake Griffin Rd., Lady Lake	3,721	0.80	\$725,595	\$18,400
Training	Sunnyside Dr., Leesburg	3,477	1.00	\$678,015	\$23,000
71	Park Ave., Leesburg	2,046	1.00	\$398,970	\$23,000
Storage	Station 71 Pole Barn	800	NA	\$76,000	NA
72	CR 44, Leesburg	3,477	2.00	\$678,015	\$46,000
76	CR 48, Yalaha	3,600	1.30	\$702,000	\$29,900
Maint.	Kirkwood Ave., Astatula	6,200	3.30	\$1,209,000	\$75,900
78	CR 448, Mount Dora	7,377	1.80	\$1,438,515	\$41,400
82	US Hwy 27, Leesburg	2,400	1.00	\$468,000	\$23,000
83	Ferndale Comm. Rd, Clermont	1,188	1.00	\$112,860	\$23,000
	Vehicle Storage	600	NA	\$57,000	NA
90	Disston Ave., Minneola	NA	NA	\$28,000	NA
109	Lakeshore Dr., Clermont	3,600	1.00	\$702,000	\$23,000
110	CR 561, Clermont (Reserve)	2,400	1.00	\$468,000	\$23,000
111	Bay Lake Rd., Groveland	2,280	1.00	\$444,600	\$23,000
112	CR 474, Clermont	6,210	2.85	\$1,210,950	\$65,550
<b>Total</b>				<b>\$19,084,730</b>	<b>\$861,120</b>

Source: Facility inventory from Lake County Fire Rescue Department, December 15, 2009; land replacement cost based on Station 13 land cost of \$23,000 per acre; building replacement cost based on \$195 cost per square foot from Station 13 construction in 2009 except pole barns/storage buildings, which are valued at \$95 per square foot.

In addition to land and buildings, the County's fire rescue level of service includes the necessary vehicles and associated equipment to perform fire rescue duties. The replacement cost of fire-

## Fire Rescue

fighting apparatus is based on the current cost of a fully-equipped vehicle. In addition to the primary fire-fighting apparatus, the inventory includes specialized vehicles and staff vehicles; the replacement value for these items is based on their original cost. As shown in Table 66, the replacement value of the County's fire equipment is approximately \$15.2 million.

**Table 66. Fire Rescue Vehicle Cost**

Apparatus Type	Units	Cost/Unit	Total Cost
Engine	26	\$250,000	\$6,500,000
Tanker	15	\$280,000	\$4,200,000
Brush Truck	16	\$90,000	\$1,440,000
Aerial/Tower Vehicle	1	\$900,000	\$900,000
Administrative	18	\$25,000	\$450,000
Squad Vehicles	3	\$400,000	\$1,200,000
Woods Vehicle	2	\$72,000	\$144,000
Air Bottle Refill Vehicle	1	\$40,000	\$40,000
Haz-Mat Trailer	2	\$35,000	\$70,000
Haz Mat Prime Mover	1	\$73,500	\$73,500
Mobile Satellite Trailer	1	\$42,000	\$42,000
Mobile Health Clinic	1	\$140,000	\$140,000
Utility Trailer	4	\$10,000	\$40,000
<b>Total</b>			<b>\$15,239,500</b>

*Source:* Total units derived from vehicle and equipment inventory from Lake County Fire Rescue Department, December 15, 2009; replacement cost for engine, tanker, brush truck, squad vehicle and aerial from Lake County Fire Rescue Department, December 16, 2009.

The total capital cost represented by existing fire rescue facilities and equipment is the sum of building, land, vehicle and capital equipment costs. This amounts to \$35.2 million, as shown in Table 67. Dividing by existing service units in the fire rescue service area yields a fire rescue cost of \$389 per service unit.

**Table 67. Fire Rescue Cost per Service Unit**

Fire Building Replacement Value	\$19,084,730
Land Value	\$861,120
Fire Vehicle/Equipment Value	\$15,239,500
<b>Total Fire/Rescue Value</b>	<b>\$35,185,350</b>
÷ Fire Service Area EDUs	90,477
<b>Cost per EDU</b>	<b>\$389</b>

*Source:* Building and land costs from Table 65; vehicle cost from Table 66; EDUs from Table 64.

## Net Cost per Service Unit

Impact fees should be reduced to account for future funding that will be generated by new development and used to remedy existing deficiencies or to retire outstanding debt on facilities serving existing development. Since the updated fees are based on the existing level of service, there are no deficiencies.

The Lake County Fire Rescue Department is funded by an ad valorem tax levied through an MSTU. Lake County has traditionally programmed funds for capital expenditures through the impact fee and MSTU. The County has also received grants from State and Federal entities for replacing and adding new equipment. The current five-year capital improvements plan does not include any tax funded capital improvements for fire rescue; thus, a credit for planned capital expenditures is not necessary in this update. There is no outstanding debt for fire facilities or equipment included in the existing level of service.

Over the past five years, the County has received several Federal grants for new equipment. Based on this recent grant history, it could reasonably be anticipated that the County will continue to receive similar funding in the future. As shown in Table 68, the grant credit is approximately \$14 per service unit based on the present value of annual grant funding per service unit and recent grant history.

**Table 68. Fire Rescue Grant Credit**

Year	Grant	Amount
2005	FEMA Basic fire fighting equipment grant	\$51,752
2005	DHS Assistance to Firefighters Grant	\$39,001
2009	DHS Assistance to Firefighters Grant	\$331,200
Total Federal Grants, 2006-2010		\$421,953
÷ Years		5
Average Annual Grants		\$84,391
÷ Existing Fire EDUs		90,477
Annual Grant Funding per EDU		\$0.93
x Present Value Factor (25 years @ 4.4% discount rate)		14.98
<b>Grant Credit per EDU</b>		<b>\$14</b>

*Source:* Grant funding history provided by Lake County, December 15, 2009; fire rescue EDUs from Table 64; discount rate for present value factor based on three-month average interest rate on state and local bonds (January through March 2010) from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data/monthly>.

Reducing the cost per service unit by the grant credit leaves a fire rescue net cost of \$375 per equivalent dwelling unit, as shown in Table 69.

**Table 69. Fire Rescue Net Cost per Service Unit**

Total Cost per EDU	\$389
– Grant Credit/EDU	-\$14
<b>Net Cost per EDU</b>	<b>\$375</b>

*Source:* Cost per service unit from Table 67; grant credit from Table 68.

## Potential Fee Schedule

The maximum fire rescue impact fees that can be adopted by the County based on this study are derived by multiplying the number of service units represented by each impact unit by the net cost per service unit, as shown in Table 70.

**Table 70. Potential Fire Rescue Impact Fee Schedule**

Land Use	Unit	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Single-Family, Detached				
Less than 1,500 sf	Dwelling	0.92	\$375	\$345
1,500 to 2,499 sf	Dwelling	1.00	\$375	\$375
2,500 sf or greater	Dwelling	1.11	\$375	\$416
Multi-Family	Dwelling	0.58	\$375	\$218
Mobile Home Park	Space	1.76	\$375	\$660
Active Adult Community	Dwelling	0.73	\$375	\$274
Lodging	Room	0.52	\$375	\$195
Retail/Commercial	1,000 sq. ft.	1.04	\$375	\$390
Office	1,000 sq. ft.	0.36	\$375	\$135
Industrial	1,000 sq. ft.	0.37	\$375	\$139
Warehouse	1,000 sq. ft.	0.43	\$375	\$161
Mini-Warehouse	1,000 sq. ft.	0.43	\$375	\$161
Public/Institutional	1,000 sq. ft.	0.81	\$375	\$304

Source: EDUs/unit from Table 63; net cost per EDU from Table 69.

## Comparative Fees

The potential fire rescue impact fee schedule is compared with the current fee schedule in Table 71 for major land use categories. In general, the fees for most land uses would decrease when compared to the existing fees. The wide variation in potential fee changes reflects the change from annualized to initial capital costs, as well as updated demand factors based on most recent call data.

**Table 71. Fire Rescue Impact Fee Comparison**

Land Use	Unit	Current Fee	Potential Fee	Change
Single-Family, Detached				
Less than 1,500 sf	Dwelling	\$390	\$345	-\$45
1,500 to 2,499 sf	Dwelling	\$390	\$375	-\$15
2,500 sf or greater	Dwelling	\$390	\$416	\$26
Multi-Family	Dwelling	\$244	\$218	-\$26
Mobile Home Park	Space	\$152	\$660	\$508
Active Adult Community	Dwelling	\$390	\$274	-\$116
Lodging	Room	\$651	\$195	-\$456
Retail/Commercial	1,000 sq. ft.	\$1,301	\$390	-\$911
Office	1,000 sq. ft.	\$1,301	\$135	-\$1,166
Industrial	1,000 sq. ft.	\$104	\$139	\$35
Warehouse	1,000 sq. ft.	\$76	\$161	\$85
Mini-Warehouse	1,000 sq. ft.	\$76	\$161	\$85
Public/Institutional	1,000 sq. ft.	\$361	\$304	-\$57

Source: Current fees from Lake County (lodging based on commercial rate and assumption of 500 square feet per room); potential fees from Table 70.

## ADMINISTRATIVE FEE REVIEW

Lake County currently charges an administrative fee for each permit reviewed. This section presents an analysis of the costs of impact fee administration and the maximum fees that could be charged to recover the costs of impact fee administration. Currently, the County charges an administrative fee of 3% of the impact fee due, up to a maximum of \$100 for each permit. Since the total impact fee for most permits is higher than \$3,000, the fee is generally a flat \$100 per permit.

There are two generally recognized methods of assessing impact fee administration costs: as a cost per impact fee permit reviewed, and as a percentage of the total impact fee receipts. Most jurisdictions recoup their administrative costs as a percentage of the total amount of the impact fee. Under this method, the burden to be borne would be proportionate to the amount of the impact fee to be paid. The presumption here is that the administrative costs are proportional to the amount of the impact fees to be paid. Some jurisdictions charge a flat fee per permit reviewed. The presumption here is that the administrative costs are roughly the same for all permit applications reviewed. In practice, Lake County currently imposes an administrative fee \$100 per permit reviewed, since the total fee owed for most applicants is likely to be higher than \$3,000. Both methods are examined in this review of the County's administrative fee.

The review of the County's administrative fee is based on administrative cost and fee revenue data from the fiscal years 2006-07 through 2008-09 and permit data during the same period. The administrative costs over the past three years include staff and update study costs. Staff costs considered were limited to costs of personnel in the impact fee section of the Development Processing Division of the Growth Management Department, and did not include a share of the time that accounting, legal or public works staff spent on impact fee-related matters. The cost of the 2007 impact fee update was allocated over the three-year period proportional to impact fee receipts. As shown in Table 72, the County has spent \$520,121 on impact fee administration over the last three years.

**Table 72. Administrative Costs, FY 2007-2009**

Year	Costs of Administration		
	Staff	Update	Total
2006-07	\$62,060	\$117,682	\$179,742
2007-08	\$134,357	\$75,512	\$209,869
2008-09	\$89,740	\$40,770	\$130,510
<b>Total</b>	<b>\$286,157</b>	<b>\$233,964</b>	<b>\$520,121</b>

*Source:* Lake County Department of Growth Management, December 15, 2009; update cost allocated proportional to impact fee receipts from Table 73.

As shown in Table 73, administrative costs as a percentage of receipts have increased over the last three years, from 0.6% to 1.3%. On a per permit basis, administrative costs have increased from \$38 in FY 2006-07 to \$142 in the last fiscal year. The increase is due to the fact that, although the County has reduced staff costs, it has had to retain a minimal level of staff in order to ensure institutional knowledge and continuity in the specialized area of impact fees. Given that impact fee administrative costs for the current year will be higher due to the costs of the current update, and

## Administrative Fee Review

that receipts (especially due to the one-year road impact fee suspension) and permits are likely to be lower, it is recommended that the fees be updated based on last year's data, rather than on a three-year average.

**Table 73. Receipts and Permits, FY 2007-2009**

Year	Admin. Costs	Impact Fee Receipts	Permits Reviewed	Administrative Cost:	
				Percentage	Per Permit
2006-07	\$179,742	\$29,819,542	4,766	0.6%	\$38
2007-08	\$209,869	\$19,250,597	1,639	1.1%	\$128
2008-09	\$130,510	\$10,407,201	917	<b>1.3%</b>	<b>\$142</b>
Total	\$520,121	\$59,477,339	7,322	0.9%	\$71

*Source:* Administrative costs from Table 72; impact fee receipts from Table 3; permits reviewed from Lake County Department of Growth Management, December 15, 2009, March 10, 2010 and April 16, 2010.

Based on the above analysis, the impact fee administrative fee could be raised from \$100 to \$142 per permit. Alternatively, the fee could be based on 1.3% of the amount of the impact fee.

## INFLATION INDEXING

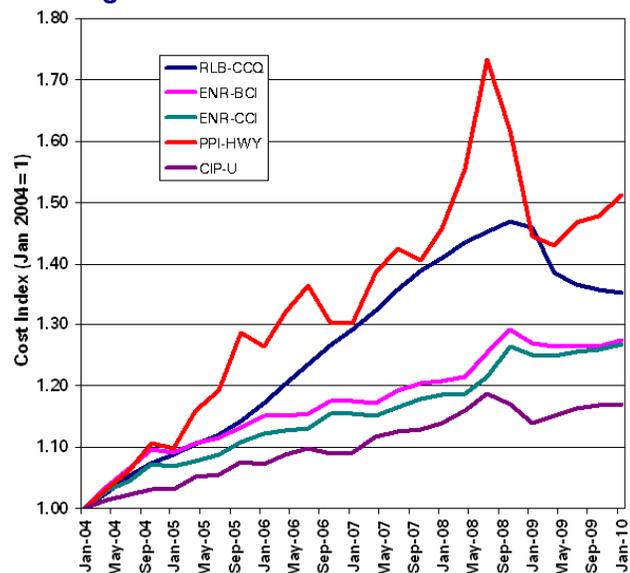
Indexing involves automatically adjusting impact fees annually based on changes in some kind of cost index. Jurisdictions in Florida and elsewhere have utilized indexing in order to minimize the “jump” in fee amounts each time the fees are updated and the corresponding shock to the cost of development. Lake County currently does not have a process for adjusting the impact fees to account for cost inflation or deflation during years in which the fee is not subject to a comprehensive update.

Most indexing systems are based on nationally-recognized cost indices. Indices often used for this purpose include the U.S. Bureau of Labor Statistics Consumer Price Index (CPI-U), or a construction specific index such as the Construction Cost Index (CCI) or Building Cost Index (BCI) published by the *Engineering News-Record* (ENR). The CPI-U measures the increase in the cost of a common basket of consumer goods and reflects the increase in the cost of living over time. The CCI and BCI measure changes in costs related to construction cost components, such as cement, steel, wood and labor costs; however, the CCI is more heavily weighted toward labor costs than the BCI.

A different national index of building construction costs that includes overhead and profit is provided by the *RLB Construction Cost Quarterly* from property and construction consultants Rider Levett Bucknall. This index is more volatile, since contractors will tend to increase their profit margins when business is booming and reduce them in slack times as they try to keep their workers busy. The RLB index indicates that construction costs have declined by 7.9% since the peak in October 2008, while the ENR building cost index is only down 1.4%, and the ENR construction cost index is actually up 0.4%.

There are several road-specific indexes that could be utilized in updating the transportation impact fee. The only national index for road costs is the Producer Price Index for Highway and Street Construction (PPI) prepared by the U.S. Bureau of Labor Statistics. This index includes the prices of materials and services from more than 180 industries used directly or indirectly in highway construction. The index does not include the cost of labor or administration and is only available at the national level. FDOT uses the national PPI to adjust historical cost estimates to current values. As illustrated in Figure 5, this index is considerably more volatile than the three more generalized construction indices discussed above. Since it peaked in July 2008, it has come down 12.7%.

**Figure 5. Construction Cost Indices**



## Inflation Indexing

The Florida Department of Transportation (FDOT) occasionally publishes historic price trends for major road construction cost components, but has not historically done this on a regular basis. FDOT does publish an annual analysis of inflation factors and other indices that may be used to adjust project costs in their *Transportation Costs* reports. FDOT recommends an inflation factor of 3.3% annually for highway construction costs in the 2009 report.

Construction costs, while the largest components of road improvement costs, are not the only factor. The second most significant factor overall is right-of-way (ROW) costs. Land costs are also one of the largest cost components for park fees. For roads, ROW costs can range from nothing on projects where no additional ROW is needed to more than construction costs. ROW costs are affected by land prices, but are not directly tied to them. ROW costs are more affected by commercial than residential land prices, because major road frontage is often used for commercial purposes. In addition, ROW costs also often include the cost of damages due to factors like the taking of parking areas in addition to land costs.

There is no nationally recognized index of changes in land values. Several communities in Florida have tied the land cost component of fees (e.g. ROW share of transportation fee) to the annual change in land values from property appraiser records. The 2007 study included an analysis of past changes in the countywide just property value for measuring changes to the ROW component of the transportation impact fee. A comparison with current land values would undoubtedly show the volatility of land prices, which have fallen throughout Florida in recent years.

In our view, the goal of indexing should be to make modest adjustments to account for inflation during the periods between comprehensive updates, rather than to try to capture all cost increases. Our recommendation would be to use a conservative, relatively stable index. Either of the ENR indexes, for construction or building costs, would be a reasonable choice. These indices capture the increase in infrastructure costs better than the Consumer Price Index, while avoiding the volatility of indices like the RLB Quarterly, the Producer Price Index for highway costs or a local land price index.

## APPENDIX A: LAND USE DATA

For the impact fee analysis, it is important to know both the existing amount of residential development and the number of residents associated with each dwelling unit. The first step is to compile an estimate of existing dwelling units by type in Lake County. For this study, the consultant analyzed the Lake County Property Appraiser's Office property database, which identifies housing by type and taxing district. The estimate of existing residential units for each municipality and the fire rescue tax district is shown in Table 74.

**Table 74. Dwelling Units by Type, 2010**

Jurisdiction	Single-Family	Mobile Home	Multi-Family
Astatula	289	433	13
Clermont	9,696	104	2,354
Eustis	5,712	215	1,858
Fruitland Park	1,272	52	322
Groveland	3,071	18	207
Howey in the Hills	470	0	117
Lady Lake	3,126	2,970	1,582
Leesburg	5,256	229	4,077
Mascotte	1,464	160	97
Minneola	3,205	7	232
Montverde	575	33	36
Mount Dora	3,857	3	2,089
Tavares	3,717	1,477	1,358
Umatilla	909	48	243
Unincorporated	48,343	14,024	5,069
<b>Total County</b>	<b>90,962</b>	<b>19,773</b>	<b>19,654</b>
Fire District*	47,648	12,951	6,648

\* only covers part of the county

Source: Duncan Associates analysis of Lake County Property Appraiser's Office property database, December 11, 2009.

The average household size associated with each general housing category is shown in Table 75. The average household size is based on the occupied units and household population. These county-wide average multipliers will be used for all of the impact fee facility updates.

**Table 75. Average Household Size, 2000**

Housing Type	Total Units	Vacant Units	Occupied Units	Household Population	Avg. HH Size
Single Family, Detached	59,006	5,188	53,818	137,323	2.55
Multi-Family	12,595	1,768	10,827	21,225	1.96
Mobile Home Park	31,229	7,461	23,768	48,197	2.03

Source: Household population and total units (occupied and vacant) in unincorporated area of Lake County from 2000 U.S. Census, SF-3 (1-in-6 sample data, excludes households living in boat, RV or van).

## Appendix A: Land Use Data

To develop single-family fees that vary by the size of the dwelling unit, national data were reviewed to determine the relative differences in persons per unit for various square footage categories. Data from the 2007 *American Housing Survey* are presented in Table 76 for the County's three different transportation impact fee house size categories. The same size categories will be applied to each of other impact fee categories updated in this study.

**Table 76. National Persons per Single-Family Unit by Size, 2003**

	Single-Family Detached Houses			Total
	<1500 sf	1500-2499	2,500 sf+	
Household Population	43,266,750	67,365,076	42,683,305	153,315,131
Occupied Units	17,350,710	24,903,442	14,177,941	56,432,092
Avg. Household Size	2.49	2.71	3.01	2.72
<b>Percent of Total</b>	<b>91.8%</b>	<b>99.6%</b>	<b>110.8%</b>	

Source: U.S. Department of Housing and Urban Development, 2007 *American Housing Survey*, weighted data (by "pure" weight).

The 2007 *American Housing Survey* was also analyzed for retirement community and age-restricted single-family households. This analysis showed that for units with householders greater than 55, the household size was 73.2% of the average household size for all single-family units.

To calculate the tiered fee categories for single-family units, national resident-per-unit ratios for each housing unit category were applied to the county-wide resident-per-unit ratio for single-family homes, as shown in Table 77.

**Table 77. Persons per Unit, with Single-Family Tiering**

Housing Type	Untiered Avg. HH Size	Ratio to All Units	Tiered Avg. HH Size
Single-Family, Detached	2.55		
Less than 1,500 sf		91.8%	2.34
1,500 to 2,499 sf		99.6%	2.54
2,500 sf or greater		110.8%	2.83
Multi-Family	1.96		1.96
Mobile Home Park	2.03		2.03
Active Adult Community		73.2%	1.87

Source: Untiered persons/unit from Table 75; single-family ratios by unit size from Table 76; active adult community ratio based on 2007 *American Housing Survey* average persons per unit for single-family units with householders greater than 55 of 1.99.

Existing nonresidential floor area and corresponding land use codes and taxing jurisdiction information for existing parcels of land in Lake County were developed from the property database provided by the Property Appraiser's Office. Table 78 summarizes existing nonresidential development in Lake County by land use type and jurisdiction.

Table 78. Nonresidential Land Use, 2010

Jurisdiction	Retail (1,000 sf)	Office (1,000 sf)	Gov./Inst. (1,000 sf)	Industrial (1,000 sf)	Warehouse (1,000 sf)
Astatula	21	10	5	102	0
Clermont	2,163	970	518	43	258
Eustis	1,214	834	523	180	206
Fruitland Park	525	238	209	69	74
Groveland	579	284	58	841	335
Howey-in-the-Hills	28	18	31	1	0
Lady Lake	2,001	393	205	216	113
Leesburg	3,455	1,889	505	823	936
Mascotte	137	46	185	62	30
Minneola	258	56	68	44	147
Montverde	20	7	12	1	1
Mount Dora	1,363	553	450	48	92
Tavares	906	752	143	439	172
Umatilla	356	149	277	40	18
Unincorporated	5,622	5,368	5,268	3,446	2,518
<b>Total County</b>	<b>18,648</b>	<b>11,567</b>	<b>8,457</b>	<b>6,355</b>	<b>4,900</b>
Fire District	6,978	5,697	5,451	3,633	2,585

Source: Duncan Associates, Inc. analysis of Lake County Property Appraiser's Office property database, December 11, 2009.

## APPENDIX B: MAJOR STREET INVENTORY

**Table 79. Existing Major Roadway Inventory**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
Abrams Rd.	SR 44 to Waycross Ave.	2	1.37	14,600	4,173	5,717	20,002
Anderson Hill Rd.	Lake Shore Dr. to US 27	2	0.67	10,000	1,559	1,045	6,700
Ardice Ave.	Kurt St. to SR 19	2	0.38	14,600	5,909	2,245	5,548
Arlington Ave.	W Lady Lake Blvd. to South Termini	2	0.63	10,000	1,203	758	6,300
Austin Merritt Rd.	Sumter County Line to CR 33	2	4.06	7,900	1,064	4,320	32,074
Bates Ave.	N Center St. to CR 44 / Deland Rd.	2	1.74	14,600	1,385	2,410	25,404
Bates Ave.	CR 44 / Deland Rd. to Estes Rd.	2	0.88	14,600	1,205	1,060	12,848
Bay Rd.	Bay Rd. / CR 19A to Old US 441/ CR 500A	2	0.82	10,000	2,913	2,389	8,200
Bay Rd.	Old US 441/ CR 500A to CR 452	2	0.55	10,000	1,721	947	5,500
Blackstill Lake Rd.	Fosgate Rd. to CR 50	2	1.64	14,600	2,659	4,361	23,944
Bridges Rd.	CR 33 to US 27	2	2.64	7,900	894	2,360	20,856
Britt Rd.	SR 44 to Horse Ranch Rd.	2	1.16	14,600	1,769	2,052	16,936
Britt Rd.	Horse Ranch Rd. to Wolf Branch Rd.	2	1.47	14,600	1,769	2,600	21,462
CR 19A	CR 452 to CR 44	2	0.48	14,600	2,453	1,177	7,008
CR 19A	CR 44 to SR 19	2	0.68	14,600	2,453	1,668	9,928
CR 19A	Bay Rd. / CR 19A to CR 44C/ CR 500A	2	0.93	16,400	8,373	7,787	15,252
CR 19A (Bay Rd.)	US 441 to Bay Rd.	2	0.53	16,400	13,766	7,296	8,692
CR 19A (Dora Ave.)	Lake Dora Dr. to CR 500A/ Old 441	2	0.14	14,600	956	134	2,044
CR 19A (Dora Ave.)	C.R. 500A/ Old 441 to David Walker Rd.	2	1.35	14,600	5,479	7,397	19,710
CR 19A (Dora Ave.)	David Walker Rd. to US 441	2	1.00	14,600	4,688	4,688	14,600
CR 25 (Teague Trail)	Griffin Ave. to US 27 / US 441	2	1.27	14,600	7,037	8,937	18,542
CR 25 / Alt 27	Marion County Line to Griffin Ave.	2	1.53	14,600	7,018	10,738	22,338
CR 25A (Fruit Park)	US 27 (North) to CR 446A	2	0.43	14,600	5,936	2,552	6,278
CR 25A (Fruit Park)	CR 446A to US 27 (South)	2	1.50	14,600	4,874	7,311	21,900
CR 25A (Leesburg)	US 27 (North) to US 27 (South)	2	1.65	14,600	412	680	24,090
CR 33	US 27 to CR 48 (North)	2	1.49	14,600	8,017	11,945	21,754
CR 33	CR 48 (North) to CR 48 / Leesburg Hwy.	2	0.52	21,300	8,131	4,228	11,076
CR 33	CR 48 / Leesburg Hwy. to Bridges Rd.	2	4.27	15,300	3,405	14,539	65,331
CR 33	Bridges Rd. to Pebble Rock Rd.	2	5.61	21,100	4,672	26,210	118,371
CR 33	Pebble Rock Rd. to SR 50	2	1.65	21,300	4,672	7,709	35,145
CR 42	Marion County Line to SR 19	2	0.64	11,000	3,248	2,079	7,040
CR 42	SR 19 to CR 450	2	1.41	15,300	2,739	3,862	21,573
CR 42	CR 450 to CR 439	2	2.05	7,900	3,489	7,152	16,195
CR 42	CR 439 to Central Ave.	2	3.58	7,900	3,294	11,793	28,282
CR 42	Central Ave. to Palmetto St.	2	4.93	7,900	3,294	16,239	38,947
CR 42	Palmetto St. to Lake Mack Dr.	2	3.60	7,900	3,294	11,858	28,440
CR 42	Lake Mack Dr. to SR 44	2	3.06	7,900	5,451	16,680	24,174
CR 435	SR 46 to Dubsdread Dr.	2	0.86	16,400	6,918	5,949	14,104
CR 435	Dubsdread Dr. to Orange County Line	2	0.81	16,400	5,380	4,358	13,284
CR 437	CR 44A to SR 44	2	1.74	11,000	4,347	7,564	19,140
CR 437	SR 44 to Wolf Branch Rd.	2	2.52	11,000	5,660	14,263	27,720
CR 437	Wolf Branch Rd. to SR 46	2	0.49	13,600	9,012	4,416	6,664
CR 437	SR 46 to Orange County Line	2	1.50	13,600	6,871	10,307	20,400
CR 439	CR 42 to CR 44A	2	6.25	11,000	2,231	13,944	68,750
CR 439	CR 44A to SR 44	2	1.53	11,000	3,304	5,055	16,830
CR 44	US 441 to Silver Lake Rd.	2	1.46	14,600	9,617	14,041	21,316
CR 44	Silver Lake Rd. to CR 473	2	2.79	13,600	9,360	26,114	37,944

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 44	CR 473 to Apiary Rd.	2	3.17	20,700	15,482	49,078	65,619
CR 44	Apiary Rd. to CR 452	2	2.75	20,700	11,893	32,706	56,925
CR 44	CR 452 to SR 19	2	0.68	14,600	12,322	8,379	9,928
CR 44	SR 19 to Hicks Ditch Rd.	2	1.01	14,600	10,487	10,592	14,746
CR 44	Hicks Ditch Rd. to CR 44A	2	1.21	21,000	9,045	10,944	25,410
CR 44 (Deland Rd.)	CR 44A to SR 44	2	1.12	14,600	7,678	8,599	16,352
CR 44 Leg A	CR 44 to US 441	2	0.42	10,000	1,313	551	4,200
CR 445	SR 19 to NF 552	2	6.13	11,000	872	5,345	67,430
CR 445	NF 552 to CR 445A	2	4.74	11,000	872	4,133	52,140
CR 445A	SR 19 to CR 445	2	3.55	11,000	995	3,532	39,050
CR 445A	CR 445 to SR 40	2	0.55	11,000	2,067	1,137	6,050
CR 448	SR 19 to CR 561	2	1.08	14,600	3,031	3,273	15,768
CR 448	CR 561 to Lake Industrial Blvd.	2	0.65	21,300	7,170	4,661	13,845
CR 448	Lake Industrial Blvd. to Orange Co. Line	2	4.69	21,100	5,289	24,805	98,959
CR 448A	CR 448 to CR 48	2	1.42	11,000	4,138	5,876	15,620
CR 448A	CR 48 to South Termini	2	1.38	11,000	231	319	15,180
CR 449 (Silver Lake)	CR 44 to Morningside Dr.	2	1.80	14,600	2,239	4,030	26,280
CR 449 (Silver Lake)	Morningside Dr. to US 441	2	1.25	14,600	2,239	2,799	18,250
CR 44A	Skyline Dr. to CR 450A/ CR44A	2	2.04	13,600	1,369	2,793	27,744
CR 44A	Deland Rd. to Estes Rd.	2	0.88	21,100	5,042	4,437	18,568
CR 44A	Estes Rd. to CR 439	2	2.29	13,600	4,683	10,724	31,144
CR 44A	CR 439 to CR 437	2	3.18	15,300	4,630	14,723	48,654
CR 44A	CR 437 to SR 44	2	4.03	15,300	1,336	5,384	61,659
CR 44A (Estes Rd.)	CR 450A to Deland Rd.	3	2.83	13,600	1,369	3,874	38,488
CR 44A (Griffin Rd.)	Thomas Rd. to US 27	2	1.01	14,600	9,219	9,311	14,746
CR 44A (Lakeside)	SR 19 to Skyline Dr.	2	1.34	14,600	975	1,307	19,564
CR 44C (Eudora Rd.)	US 441 to CR 500A	2	0.91	14,600	9,068	8,252	13,286
CR 44C (Griffin Rd.)	CR 468 to Thomas Rd.	2	0.75	14,600	5,415	4,061	10,950
CR 450	Marion County Line to Babb Rd.	2	4.55	10,000	1,284	5,842	45,500
CR 450	Babb Rd. to SR 19	2	0.96	14,600	2,260	2,170	14,016
CR 450	SR 19 to E Umatilla Blvd./ W 7th St.	2	2.06	14,600	4,187	8,625	30,076
CR 450	E Umatilla Blvd./ W 7th St. to CR 42	2	1.36	13,600	4,187	5,694	18,496
CR 450A	SR 19 to CR 44A North	2	2.72	13,600	1,169	3,180	36,992
CR 452	Marion County Line to Felkins Rd.	2	3.93	21,200	5,829	22,908	83,316
CR 452	Felkins Rd. to Sandy Lane	2	1.72	21,400	5,829	10,026	36,808
CR 452	Sandy Lane to Lake Landing Blvd.	2	2.55	21,200	9,374	23,904	54,060
CR 452	Lake Landing Blvd. to CR 44	2	1.06	21,400	9,374	9,936	22,684
CR 452 (E Main St.)	St Clair Abrams Ave. to Dora Ave.	2	0.40	14,600	2,062	825	5,840
CR 452 (Eustis)	CR 44 / CR 452 to SR 19	2	0.99	14,600	11,627	11,511	14,454
CR 452 (L. Dora Dr.)	Dora Ave. to Lake Ave.	2	1.58	14,600	1,539	2,432	23,068
CR 452 (Lakeshore)	Lake Ave. to Bay Rd.	2	0.53	14,600	1,478	783	7,738
CR 452 (Lakeshore)	Bay Rd. to Old US 441 / CR 500A	2	2.19	14,600	1,478	3,237	31,974
CR 452 (Lakeshore)	Old US 441 / CR 500A to 11th Ave.	2	0.15	14,600	2,738	411	2,190
CR 452	US 441 to CR 500A	2	0.84	14,600	3,589	3,015	12,264
CR 452	CR 500A to CR 452 / East Main St.	2	0.13	14,600	3,589	467	1,898
CR 455	SR 19 to CR 561	2	2.73	11,000	2,573	7,024	30,030
CR 455	CR 561 to CR 561A	2	4.49	11,000	1,675	7,521	49,390
CR 455	CR 561 A to Ridgewood Ave.	2	3.46	13,900	2,603	9,006	48,094
CR 455	Ridgewood Ave. to CR 455/ CR 50	2	2.61	13,600	5,095	13,298	35,496

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 455	CR 455 / CR 50 to SR 50	2	0.95	14,600	6,206	5,896	13,870
CR 46 (Sanford Rd.)	Highland St. to US 441	2	0.68	16,400	5,803	3,946	11,152
CR 460	Thomas Rd. to US 27	2	0.44	14,600	4,566	2,009	6,424
CR 466	Sumter Co. Line Rd. to Rolling Acres Rd.	4	1.02	34,700	17,196	17,540	35,394
CR 466	Rolling Acres Rd. to US 27	4	0.88	35,700	11,310	9,953	31,416
CR 466	US 27/ US 441 to Grays Airport Rd.	2	2.45	14,600	2,516	6,164	35,770
CR 466	Grays Airport Rd. to Marion County Rd.	2	1.67	13,600	2,516	4,202	22,712
CR 466A	Sumter Co. Line to CR 468 / Rose Ave.	2	2.43	13,600	7,248	17,613	33,048
CR 466A	CR 468 / Rose Ave. to US 27	2	0.64	14,600	4,404	2,819	9,344
CR 466A (Picciola)	US 27 to CR 466B	2	1.94	14,600	7,234	14,034	28,324
CR 466A (Picciola)	CR 466B to County Rd. Termini	2	1.35	14,600	7,234	9,766	19,710
CR 466B (L. Unity)	Eagles Nest Rd. to CR 466A	2	1.75	14,600	3,817	6,680	25,550
CR 468	CR 466A to Pine Ridge Dairy Rd.	2	0.55	14,600	2,780	1,529	8,030
CR 468	Pine Ridge Dairy Rd. to Griffin Rd.	2	1.80	14,600	5,531	9,956	26,280
CR 468	Griffin Rd. to SR 44	2	1.13	14,600	6,559	7,412	16,498
CR 46A	SR 44 to SR 46	2	5.59	14,400	7,247	40,511	80,496
CR 470	Sumter County Line to Bay Ave.	2	3.33	21,100	5,248	17,476	70,263
CR 470	Bay Ave. to CR 33	2	0.54	14,600	5,248	2,834	7,884
CR 473	CR 44 to Fountain Lake Blvd.	2	2.99	10,000	5,274	15,769	29,900
CR 473	Fountain Lake Blvd. to US 441	4	1.03	31,100	12,778	13,161	32,033
CR 474	SR 33 to Green Swamp Rd.	2	5.21	7,900	4,168	21,715	41,159
CR 474	Green Swamp Rd. to US 27	2	3.35	7,900	3,419	11,454	26,465
CR 478	SR 19 to Jalarmy Rd.	2	5.99	13,600	1,102	6,601	81,464
CR 48	Sumter County Line to CR 33	2	5.58	21,100	2,435	13,587	117,738
CR 48	CR 33 to US 27	2	1.14	14,600	7,402	8,438	16,644
CR 48	US 27 to Lime Ave.	2	4.89	14,600	8,389	41,022	71,394
CR 48	Lime Ave. to SR 19	2	2.04	21,100	6,822	13,917	43,044
CR 48	CR 561 to Ranch Rd.	2	1.14	14,600	5,119	5,836	16,644
CR 48	Ranch Rd. to CR 448A	2	3.17	21,100	5,119	16,227	66,887
CR 50	US 27 to Hancock Rd.	2	1.21	14,600	9,059	10,961	17,666
CR 50	Hancock Rd. to CR 455	2	2.83	25,100	5,107	14,453	71,033
CR 50	CR 455 to Orange County Line	2	1.92	14,600	4,892	9,393	28,032
CR 50 (Sunset Ave.)	CR 33 to SR 50	2	0.71	10,000	1,440	1,022	7,100
CR 500A (Highland.)	5th Ave. to SR 46	2	0.26	16,400	4,675	1,216	4,264
CR 500A/ 5Th Ave.	Old 441 to N Highland St.	2	0.63	16,400	3,189	2,009	10,332
CR 500A/Old 441	US 441 to SR 19	4	0.23	31,100	7,977	1,835	7,153
CR 500A/ Old 441	SR 19 to Dora Ave.	2	1.08	14,600	10,260	11,081	15,768
CR 500A/ Old 441	Dora Ave. to Bay Rd.	2	1.94	14,600	11,267	21,858	28,324
CR 500A/ Old 441	Bay Rd. to CR 44C / Eudora Ave.	2	0.79	14,600	10,485	8,283	11,534
CR 500A/ Old 441	CR 44C / Eudora Dr. to Lakeshore Dr.	2	1.06	16,400	13,203	13,995	17,384
CR 500A/ Old 441	Lakeshore Dr. to 5th Ave.	2	0.79	16,400	9,719	7,678	12,956
CR 500A/ Old 441	CR 46 to Orange Coutny Line	2	0.75	16,400	4,675	3,506	12,300
CR 561	SR 19 to CR 448	2	1.62	14,600	11,323	18,343	23,652
CR 561	CR 448 to CR 48	2	3.93	14,600	7,016	27,573	57,378
CR 561	CR 48 to South Astatula City Limit	2	0.63	14,600	7,370	4,643	9,198
CR 561	S. Astatula City Limit to CR 455	2	2.49	13,600	7,370	18,351	33,864
CR 561	CR 455 to Howey Cross Rd.	2	1.74	11,000	4,878	8,488	19,140
CR 561	Howey Cross Rd. to Turnpike Rd.	2	1.77	13,600	5,644	9,990	24,072
CR 561	US 27 to East Ave.	2	1.78	14,600	1,587	2,825	25,988

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 561	East Ave. to W Minneola Ave.	2	1.05	14,600	1,587	1,666	15,330
CR 561	C.R. 561A to SR 50	2	0.23	14,600	3,379	777	3,358
CR 561	SR 50 to Log House Rd.	2	4.31	14,600	5,048	21,757	62,926
CR 561	Log House Rd. to Florida Boys Ranch Rd.	2	1.56	14,600	2,195	3,424	22,776
CR 561	Florida Boys Ranch Rd. to SR 33	2	5.87	13,600	1,293	7,590	79,832
CR 561 (Minneola)	8th St. to CR 561A	2	0.42	10,000	3,379	1,419	4,200
CR 561 / CR 561A	Turnpike Rd. / CR 561A to US 27	2	0.46	13,600	6,750	3,105	6,256
CR 561A	Turnpike Rd. / CR 561 to CR 455	2	3.22	13,600	1,176	3,787	43,792
CR 561A	CR 561 to CR 565A	2	1.69	14,600	3,040	5,138	24,674
CR 561A	CR 565A to Jalarmy Rd.	2	1.67	14,600	4,271	7,133	24,382
CR 561A	Jalamry Rd. to US 27	2	1.11	14,600	2,172	2,411	16,206
CR 565	US 27 to Kjellstrom Lane	2	7.01	13,600	872	6,113	95,336
CR 565	SR 50 to Sloans Ridge	2	1.96	14,600	814	1,595	28,616
CR 565	Sloans Ridge to Lake Erie Rd.	2	5.44	11,000	814	4,428	59,840
CR 565 (Villa City)	Kjellstrom Lane to SR 50	2	0.63	14,600	1,805	1,137	9,198
CR 565A	SR 50 to CR 561A	2	2.78	14,600	5,151	14,320	40,588
CR 565A	SR 50 to CR 565B	2	4.60	14,600	1,901	8,745	67,160
CR 565B	SR 33 to CR 561	2	3.66	10,000	1,713	6,270	36,600
Canal St.	US 441 to Main St.	2	0.30	10,000	4,245	1,274	3,000
Canal St.	Main St. to SR 44	2	0.31	10,000	3,388	1,050	3,100
Citrus Tower Blvd.	US 27 to Oakley Seaver Dr.	2	1.80	14,600	10,679	19,222	26,280
Citrus Tower Blvd.	Oakley Seaver Dr. to SR 50	4	0.47	31,100	13,604	6,394	14,617
Citrus Tower Blvd.	SR 50 to Johns Lake Rd.	4	1.43	21,100	10,309	14,742	30,173
David Walker Dr.	Old US 441 / CR 500A to CR 19A	2	0.95	14,600	6,692	6,357	13,870
David Walker Dr.	CR 19A to US 441	2	0.44	14,600	6,692	2,944	6,424
David Walker Dr.	US 441 to Mount Homer Rd.	2	0.53	14,600	5,610	2,973	7,738
David Walker Dr.	Mount Homer Rd. to Golflinks Ave.	2	0.74	14,600	5,121	3,790	10,804
Dead River Rd.	West Termini to SR 19	2	2.29	14,600	5,939	13,600	33,434
Donnelly St.	US 441 to 11th Ave.	2	1.25	15,300	10,185	12,731	19,125
Donnelly St.	11th Ave. to 5th Ave.	2	0.38	15,300	10,185	3,870	5,814
Duda Rd.	CR 448A to Orange County Line	2	0.64	11,000	4,951	3,169	7,040
E Lady Lake Blvd.	US 27/US441 to Berchfield Rd.	2	0.96	14,600	522	501	14,016
E Lakeview Ave.	SR 19 to Haselton St.	2	1.00	10,000	7,025	7,025	10,000
E Limit Ave.	Donnelly St. to US 441	2	0.99	15,300	2,221	2,199	15,147
E Main St.	SR 19 to CR 452/ St Clair Abrams St.	2	0.74	14,600	9,159	6,778	10,804
Eagles Nest Rd.	US 27 to CR 466B	2	1.43	14,600	2,577	3,685	20,878
East Ave.	CR 561 to SR 50	2	0.73	10,000	5,517	4,027	7,300
E. Crooked Lake Rd.	Lakeview Dr. to Broadview Ave.	2	0.85	10,000	3,962	3,368	8,500
E. Crooked Lake Rd.	Broadview Ave. to US 441	2	0.78	14,600	3,962	3,090	11,388
Emeralda Ave.	Emeralda Island Rd. to CR 44	2	0.77	10,000	3,464	2,667	7,700
Empire Church Rd.	CR 565 to Anderson Rd.	2	4.26	10,000	1,279	5,449	42,600
Estes Rd.	CR 44A to Lake Lincoln Ln.	2	0.76	10,000	2,539	1,930	7,600
Estes Rd.	Lake Lincoln Lane to SR 44	2	0.49	10,000	2,539	1,244	4,900
Eudora Rd.	Old Mt Dora Rd. to US 441	2	0.52	14,600	3,741	1,945	7,592
Fish Camp Rd.	CR 452 to CR 44	2	0.63	10,000	1,139	718	6,300
Golflinks Ave.	Kurt St. to SR 19 / Bay St.	2	0.39	14,600	1,309	511	5,694
Golflinks Ave.	SR 19 / Bay St. to Mary St.	2	0.38	14,600	982	373	5,548
Goose Prairie Rd.	Emeralda Ave. to CR 452	2	1.86	10,000	2,260	4,204	18,600
Grand Hwy.	Citrus Tower Blvd. to SR 50	2	1.23	9,100	4,628	5,692	11,193

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
Grays Airport Rd.	Marion County Rd. to CR 466	2	1.76	13,600	543	956	23,936
Grays Airport Rd.	CR 466 to Griffin View Dr.	2	1.25	14,600	3,379	4,224	18,250
Griffin Ave.	US 27 / US 411 to CR 25	2	0.85	14,600	8,471	7,200	12,410
Griffin Ave.	CR 25 to Uncle Donalds Lane	2	1.19	14,600	2,020	2,404	17,374
Griffin Ave.	Uncle Donalds Lane to Grays Airport Rd.	2	1.66	13,600	2,020	3,353	22,576
Griffin Rd.	US 27 to Lee St.	2	0.51	14,600	2,456	1,253	7,446
Griffin View Dr.	US 27 to Grays Airport Rd.	2	1.85	14,600	3,998	7,396	27,010
Griffin View Dr.	Grays Airport Rd. to Sulen Rd.	2	1.64	10,000	1,461	2,396	16,400
Grove St.	SR 19 (Badger Ave.) to Lakeview Ave.	2	0.36	14,600	1,379	496	5,256
Grove St.	Lakeview Ave. to Golflinks Ave.	2	0.37	14,600	3,410	1,262	5,402
Grove St.	Golfskins Ave. to Old Mt Dora Rd.	2	0.50	14,600	3,808	1,904	7,300
N. Hancock Rd.	CR 50 to N Ridge Blvd.	4	0.43	31,100	8,258	3,551	13,373
N. Hancock Rd.	N Ridge Blvd. to SR 50	4	1.50	31,100	13,722	20,583	46,650
S. Hancock Rd.	SR 50 to Hooks St.	4	1.49	31,100	12,311	18,343	46,339
S. Hancock Rd.	Hooks St. to Johns Lake Rd.	2	1.49	14,600	6,267	9,338	21,754
S. Hancock Rd.	Johns Lake Rd. to Hartwood Marsh Rd.	2	1.74	14,600	6,267	10,905	25,404
Hartwood Marsh Rd.	US 27 to Hancock Rd.	4	2.11	21,100	10,704	22,585	44,521
Hartwood Marsh Rd.	Hancock Rd. to Orange County Line	4	2.51	13,600	8,246	20,697	34,136
Haselton St.	SR 44 to Lakeview Ave.	2	0.75	14,600	1,864	1,398	10,950
Highland St.	Limit Ave. to 5th Ave.	2	1.01	14,600	2,359	2,383	14,746
Hook St.	Lakeshore Dr. to US 27	2	0.35	9,100	5,213	1,825	3,185
Hook St.	US 27 to Hancock Rd.	4	2.15	21,100	5,468	11,756	45,365
Huffstetler Dr.	David Walker Dr. to Kurt St.	2	0.59	14,600	1,026	605	8,614
Jalarmy Rd.	CR 478 to CR 561A	2	0.35	10,000	2,073	726	3,500
Johns Lake Rd.	US 27 to Hancock Rd.	2	1.57	9,100	2,698	4,236	14,287
Kurt St.	W Lakeview Ave. to David Walker Dr.	2	0.25	14,600	4,485	1,121	3,650
Kurt St.	David Walker Dr. to US 441	2	0.91	14,600	4,035	3,672	13,286
Lake Ave.	Old 441/ CR 500A to Lakeshore Dr.	2	0.56	10,000	1,842	1,032	5,600
Lake Dr.	SR 44 to Country Rd.	2	0.64	11,000	740	474	7,040
Lake Ella Rd.	Sumter County Line to US 27	2	2.95	10,000	1,775	5,236	29,500
Lake Erie Rd.	CR 565 to SR 33	2	5.01	11,000	598	2,996	55,110
Lake Eustis Dr.	US 441 to Clay Blvd.	2	1.59	14,600	6,004	9,546	23,214
Lake Louisa Rd.	Lakeshore Dr. to Vista Del Lago Blvd.	2	2.57	14,600	2,777	7,137	37,522
Lake Louisa Rd.	Vista Del Lago Blvd. to US 27	2	1.13	14,600	4,353	4,919	16,498
Lake Mack Dr.	CR 42 to Another Anna Rd.	2	1.10	11,000	1,690	1,859	12,100
Lake St.	US 441 to Main St.	2	0.20	10,000	2,878	576	2,000
Lake St.	Main St. to SR 44	2	0.31	10,000	3,451	1,070	3,100
Lakeshore Dr. (Cler)	CR 561 to Oswalt Rd.	2	1.55	14,600	1,958	3,035	22,630
Lakeshore Dr. (Cler)	Oswalt Rd. to Harder Rd.	2	1.62	14,600	8,111	13,140	23,652
Lakeshore Dr. (Cler)	Harder Rd. to Anderson Hill Rd.	2	1.42	14,600	12,176	17,290	20,732
Lakeshore Dr. (Eustis)	Clay Blvd. to South Bay St. / SR 19 Sb	2	1.65	14,600	5,408	8,923	24,090
Lane Park Cutoff	SR 19 to CR 561	2	0.62	10,000	1,484	920	6,200
Lee St.	Griffin Rd. to US 441	2	0.74	10,000	2,976	2,202	7,400
Lee St.	US 441 to Main St.	2	0.50	10,000	2,853	1,427	5,000
Log House Rd.	CR 561 to Lakeshore Dr.	2	0.87	14,600	2,439	2,122	12,702
Lone Oak Dr.	Main St. to SR 44	2	0.71	10,000	3,081	2,188	7,100
Main St. (Leesburg)	CR 468 to Thomas Ave.	2	0.76	14,600	10,247	7,788	11,096
Main St. (Leesburg)	Thomas Avenue to US 27	2	1.03	14,600	10,247	10,554	15,038
Main St. (Leesburg)	US 27 to Lee St.	2	0.45	14,600	11,375	5,119	6,570

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
Main St. (Leesburg)	Lee St. to Canal St.	2	0.39	14,600	11,375	4,436	5,694
Main St. (Leesburg)	Canal St. to Lake St.	2	0.41	14,600	5,357	2,196	5,986
Main St. (Leesburg)	Lake St. to Dixie Ave. / SR 44	2	0.62	14,600	5,333	3,306	9,052
Main St. (Sr 44)	Dixie Ave. / SR 44 to US 441	2	0.32	16,400	5,310	1,699	5,248
Marion County Rd.	CR 25 to Grays Airport Rd.	2	2.52	14,600	2,170	5,468	36,792
Marion County Rd.	Grays Airport Rd. to Lake Griffin Rd.	2	3.01	11,000	2,170	6,532	33,110
Mascotte Empire Rd.	SR 50 to Empire Church Rd.	2	3.23	4,400	642	2,074	14,212
Mclendon St.	Clay Ave. to US 27/US441	2	0.42	10,000	316	133	4,200
Micro Racetrack Rd.	Lake Ella Rd. to CR 466A	2	1.74	11,000	2,347	4,084	19,140
Morningside Dr.	US 441 to CR 500A	2	1.10	15,300	1,359	1,495	16,830
Mt Homer Rd.	CR 19A to US 441	2	0.74	14,600	260	192	10,804
Mt Homer Rd.	US 441 to David Walker Dr.	2	0.68	14,600	919	625	9,928
Mt Homer Rd.	David Walker Dr. to Kurt St.	2	0.51	14,600	4,416	2,252	7,446
N. Grassy Lake Rd.	US 27 to Turkey Farm Rd.	2	1.66	10,000	535	888	16,600
Old Eustis Rd.	Morningside Dr. to E Crooked Lake Dr.	2	0.34	15,300	2,034	692	5,202
Old Eustis Rd.	E Crooked Lake Dr. to Donnelly St.	2	0.99	15,300	2,141	2,120	15,147
Old Mount Dora Rd.	SR 19 to Eudora Rd.	2	0.65	14,600	5,768	3,749	9,490
Old Mount Dora Rd.	Eudora Rd. to US 441	2	0.89	14,600	5,768	5,134	12,994
Orange Ave.	SR 19 to Haselton St.	4	1.01	35,700	11,662	11,779	36,057
Orange Ave.	Haselton St. to CR 44B	2	0.98	16,400	11,892	11,654	16,072
Oswalt Rd.	Lakeshore Dr. to Edgewater Dr.	2	1.97	14,600	3,402	6,702	28,762
Palmetto Dr.	Sunset Ave. to CR 33	2	0.20	9,100	464	93	1,820
Prescott St.	Bates Ave. to SR 44	2	0.38	14,600	469	178	5,548
Radio Rd.	CR 44 to Morningside Dr.	2	2.29	14,600	3,490	7,992	33,434
Radio Rd.	Morningside Dr. to US 441	2	0.95	14,600	7,518	7,142	13,870
Rolling Acres Rd.	US 27 / US 441 to Oak St.	2	0.78	14,600	11,474	8,950	11,388
Rolling Acres Rd.	Oak St. to CR 466	2	0.50	14,600	11,254	5,627	7,300
Rolling Acres Rd.	CR 466 to Lake Ella Rd.	2	2.00	13,600	1,928	3,856	27,200
Round Lake Rd.	Wolf Branch Rd. to SR 46	2	1.00	13,600	2,318	2,318	13,600
Round Lake Rd.	SR 46 to Orange County Line	2	1.02	13,600	3,031	3,092	13,872
Royal Trails Rd.	Seagrape Ave. to SR 44	2	4.15	11,000	1,418	5,885	45,650
S Grays Airport Rd.	Griffin View Dr. to Eagles Nest Rd.	2	1.75	13,600	543	950	23,800
S Grays Airport Rd.	Eagles Nest Rd. to US 27 / US 441	2	1.43	14,600	1,118	1,599	20,878
Shay Blvd.	Tarrson Blvd. to Griffin Ave.	2	0.50	10,000	2,559	1,280	5,000
Shirley Shores Rd.	CR 448 to Deer Island Rd.	2	3.14	11,000	2,130	6,688	34,540
Sleepy Hollow Rd.	US 441 to Sunnyside Dr.	2	1.11	14,600	2,048	2,273	16,206
SR 19	Marion County Line to CR 445A	2	3.61	15,300	2,149	7,758	55,233
SR 19	CR 445A to CR 445	2	5.50	15,300	3,389	18,640	84,150
SR 19	CR 445 to CR 42	2	5.21	15,300	5,394	28,103	79,713
SR 19	CR 42 to Baker Rd.	2	0.90	11,700	4,317	3,885	10,530
SR 19	Baker Rd. to CR 450 (Umatilla Blvd.)	2	1.19	16,400	4,317	5,137	19,516
SR 19	CR 450 (Umatilla Blvd.) to CR 450	2	0.51	16,400	14,499	7,394	8,364
SR 19	CR 450 (Ocala St.) to CR 450A	4	1.38	35,700	17,850	24,633	49,266
SR 19	CR 450A to CR 19A	4	2.22	35,700	19,584	43,476	79,254
SR 19	CR 19A to CR 44	4	0.58	35,700	16,053	9,311	20,706
SR 19	CR 44 to CR 452	4	0.75	35,700	17,751	13,313	26,775
SR 19	Stevens Ave to Golf Links Ave.	4	0.50	35,700	30,600	15,300	17,850
SR 19	Golf Links Ave. to US 441	4	0.92	35,700	19,830	18,244	32,844
SR 19	CR 500A/ Lake Shore Blvd. to CR 452	4	0.37	32,700	16,053	5,940	12,099

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
SR 19	CR 452 (Main St.) to CR 561	4	1.38	32,700	30,193	41,666	45,126
SR 19	CR 561 to Lake Harris North End	2	0.90	21,300	13,762	12,386	19,170
SR 19	Lake Harris North End to CR 48	2	4.00	16,900	12,639	50,556	67,600
SR 19	CR 48 to Central Ave.	2	0.84	13,100	7,998	6,718	11,004
SR 19	Central Ave. to CR 455	2	3.09	15,300	3,189	9,854	47,277
SR 19	CR 455 to US 27 / SR 25	2	2.72	15,300	8,170	22,222	41,616
SR 19	US 27 / SR 25 to CR 478	2	4.73	15,300	7,287	34,468	72,369
SR 19	CR 478 to Lake Catherine Rd.	2	1.22	11,700	3,189	3,891	14,274
SR 19	Lake Catherine Rd. to SR 50/ SR 33	2	0.70	15,000	8,937	6,256	10,500
SR 19 (Duncan Dr.)	US 441 to CR 500A/ Lake Shore Blvd.	4	0.24	32,700	13,820	3,317	7,848
SR 19 (N)	Orange Ave. to CR 452	4	0.87	42,840	15,892	13,826	37,271
SR 19 (N)	Stevens Ave to Orange Ave.	4	0.68	42,840	16,053	10,916	29,131
SR 19 (S)	CR 452 to Orange Ave.	4	0.82	42,840	16,053	13,163	35,129
SR 19 (S)	Orange Ave. to Stevens Ave	4	0.62	42,840	13,785	8,547	26,561
SR 33	SR 50/ SR 33 to Anderson Rd.	2	0.52	16,400	7,590	3,947	8,528
SR 33	Anderson Rd. to CR 565B	2	3.16	15,300	6,128	19,364	48,348
SR 33	CR 565B to CR 561	2	6.76	15,300	4,831	32,658	103,428
SR 33	CR 561 to CR 474	2	2.33	15,300	5,023	11,704	35,649
SR 33	CR 474 to Polk County Line	2	1.04	15,300	4,949	5,147	15,912
SR 40	Marion County Line to CR 445A	2	4.71	15,300	5,867	27,634	72,063
SR 40	CR 445A to River Rd.	2	1.61	15,300	6,276	10,104	24,633
SR 40	River Rd. to Volusia County Line	2	1.43	15,300	7,124	10,187	21,879
SR 44	Sumter County Line to CR 468	4	2.38	34,700	19,042	45,320	82,586
SR 44	CR 468 to S Lone Oak Dr.	4	1.54	35,700	13,511	20,807	54,978
SR 44	S Lone Oak Dr. to US 27	4	0.76	35,700	18,431	14,008	27,132
SR 44	US 27 to S 9th St.	4	0.57	35,700	23,807	13,570	20,349
SR 44	S 9th St. to Canal St.	4	0.34	35,700	23,532	8,001	12,138
SR 44	Canal St. to S Lake St.	4	0.41	35,700	23,532	9,648	14,637
SR 44	S Lake St. to E Main St.	4	0.79	35,700	18,643	14,728	28,203
SR 44	E Main St. to US 441	5	0.11	32,700	19,090	2,100	3,597
SR 44 (Old CR 44B)	US 441 to End Of 4 Lane	4	0.45	35,700	18,453	8,304	16,065
SR 44 (Old CR 44B)	End Of 4 Lane to WayCross Ave.	2	0.45	20,700	18,453	8,304	9,315
SR 44 (Old CR 44B)	Waycross Ave. to Orange Ave.	2	1.66	20,700	12,993	21,568	34,362
SR 44	Abrams Rd. to Griffin Lane	2	2.01	16,400	3,189	6,410	32,964
SR 44	Griffin Lane to CR 439	2	1.14	13,100	3,189	3,635	14,934
SR 44	CR 439 to CR 437	2	3.03	15,300	9,728	29,476	46,359
SR 44	CR 437 to CR 46A	2	1.15	15,300	3,189	3,667	17,595
SR 44	CR 46A to CR 44A	2	3.43	15,300	3,189	10,938	52,479
SR 44	CR 44A to Overlook Dr.	2	5.34	15,300	3,189	17,029	81,702
SR 44	Overlook Dr. to CR 42	2	5.64	15,300	7,073	39,892	86,292
SR 44	CR 42 to Volusia County Line	2	0.26	18,700	11,214	2,916	4,862
SR 46	US 441 to Vista View	2	1.08	16,300	10,086	10,893	17,604
SR 46	Vista View to Round Lake Rd.	2	0.94	16,100	10,086	9,481	15,134
SR 46	Round Lake Rd. to CR 437 South	2	2.11	15,900	4,338	9,153	33,549
SR 46	CR 437 South to CR 437 North	2	0.51	21,200	14,300	7,293	10,812
SR 46	CR 437 North to CR 435	2	1.11	21,200	15,711	17,439	23,532
SR 46	CR 435 to CR 46A	2	4.68	13,100	4,338	20,302	61,308
SR 46	CR 46A to Serminole County Line	2	2.61	15,300	19,510	50,921	39,933
SR 50	Sumter Co. Line to CR 565 / Bay Lake Rd.	2	3.64	11,700	13,071	47,578	42,588

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
SR 50	CR 565 / Bay Lake Rd. to CR 33	2	0.77	21,300	4,338	3,340	16,401
SR 50	CR 33 to Groveland Farms Rd.	4	0.96	35,700	18,201	17,473	34,272
SR 50	Groveland Farms to SR 50 1-Way Pairs	4	0.63	35,700	10,333	6,510	22,491
SR 50 (E)	SR 50 One Way Pairs to SR 19	4	0.44	42,840	10,333	4,547	18,850
SR 50 (E)	SR 19 to SR 33 South	4	0.33	42,840	21,588	7,124	14,137
SR 50 (W)	SR 33 South to SR 19	4	0.34	41,500	13,622	4,631	14,110
SR 50 (W)	SR 19 to SR 50 One Way Pairs	4	0.44	42,840	10,333	4,547	18,850
SR 50	SR 33 South to CR 565A North	4	1.53	41,500	23,901	36,569	63,495
SR 50	CR 565A North to CR 561	4	3.15	41,500	23,867	75,181	130,725
SR 50	CR 561 to East Ave.	4	1.19	36,400	27,294	32,480	43,316
SR 50	East Ave. to US 27	4	0.92	36,400	34,187	31,452	33,488
SR 50	US 27 to Hancock Rd.	4	2.14	36,600	41,644	89,118	78,324
SR 50	Hancock Rd. to CR 455	6	1.49	64,500	53,499	79,714	96,105
SR 50	CR 455 to Orange County Line	6	1.53	64,500	47,363	72,465	98,685
Sunnyside Dr.	SR 44 to Sunset Dr.	2	0.72	14,600	3,497	2,518	10,512
Sunnyside Dr.	Sunset Dr. to Bridgewater Court	2	4.07	14,600	2,048	8,335	59,422
Sunnyside Dr.	Bridgewater Court to Sunnyside Dr.	2	1.16	14,600	1,596	1,851	16,936
Thomas Ave.	CR 460 to CR 44A / Griffin Rd.	2	0.79	14,600	7,383	5,833	11,534
Thomas Ave.	CR 44A / Griffin Rd. to Main St.	2	1.07	14,600	6,972	7,460	15,622
Tuscanooga Rd.	Sumter County Line to Egg Rd.	2	4.19	10,000	522	2,187	41,900
Tuscanooga Rd.	Egg Rd. to SR 50	2	0.54	9,100	2,376	1,283	4,914
Underpass Rd.	CR 33 to American Legion Rd.	2	0.31	4,800	806	250	1,488
Vista Del Lago Blvd.	Lake Louisa Rd. to US 27	2	0.83	10,000	1,270	1,054	8,300
W Lady Lake Blvd.	West Termini to US 27/US441	2	0.45	14,600	793	357	6,570
W Lakeview Ave.	Kurt St. to SR 19	2	0.43	10,000	7,734	3,326	4,300
Washington Ave.	Haselton St. to Abrams Rd.	2	0.88	14,600	2,527	2,224	12,848
WayCross Ave.	County Club Rd. to SR 44	2	0.99	14,600	4,959	4,909	14,454
Wells Ave.	SR 19 to E Main St.	2	0.52	14,600	1,877	976	7,592
Wilson Lake Parkway	US 27 to Libby Rd.	2	0.35	10,000	344	120	3,500
Wolf Branch Rd.	US 441 to Britt Rd.	2	1.16	14,600	8,320	9,651	16,936
Wolf Branch Rd.	Britt Rd. to CR 437	2	3.52	10,000	3,549	12,492	35,200
Woodlea Rd.	Lane Park Rd. to SR 19	2	1.71	14,600	2,530	4,326	24,966
US 192	US 27 to Orange County Line	6	1.01	49,300	42,804	43,232	49,793
US 27/SR 25	US 27/US441 Split to Main St.	4	1.04	32,700	28,225	29,354	34,008
US 27/SR 25	Main St. to SR 44	4	0.57	32,700	24,953	14,223	18,639
US 27/SR 25	SR 44 to CR 33	4	2.78	32,700	35,959	99,966	90,906
US 27/SR 25	CR 33 to CR 48	4	1.16	35,700	10,333	11,986	41,412
US 27/SR 25	CR 48 to Plantation Blvd.	4	2.54	35,700	22,730	57,734	90,678
US 27/SR 25	Plantation Blvd. to Florida Turnpike	4	2.67	32,800	20,964	55,974	87,576
US 27/SR 25	Florida Turnpike to SR 19	4	4.08	41,800	24,360	99,389	170,544
US 27/SR 25	SR 19 to CR 561	4	3.36	32,800	18,786	63,121	110,208
US 27/SR 25	CR 561 to CR 561A	4	2.14	34,700	28,418	60,815	74,258
US 27/SR 25	CR 561A to CR 561/ Main Ave.	6	0.38	52,100	30,554	11,611	19,798
US 27/SR 25	CR 561/ Main Ave. to CR 50	6	0.68	52,100	30,554	20,777	35,428
US 27/SR 25	CR 50 to Grand Hwy.	6	0.79	52,100	28,245	22,314	41,159
US 27/SR 25	Grand Hwy. to SR 50	6	1.22	52,100	22,870	27,901	63,562
US 27/SR 25	SR 50 to Johns Lake Rd.	6	1.54	52,100	30,759	47,369	80,234
US 27/SR 25	Johns Lake Rd. to Hartwood Marsh Rd.	6	2.06	52,100	27,597	56,850	107,326
US 27/SR 25	Hartwood Marsh Rd. to Lake Louisa Rd.	6	0.95	52,100	25,249	23,987	49,495

## Appendix B: Major Street Inventory

**Table 79 Continued.**

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
US 27/SR 25	Lake Louisa Rd. to Boggy Marsh Rd.	4	8.52	43,600	23,049	196,377	371,472
US 27/SR 25	Boggy Marsh Rd. to US 192	6	1.70	53,000	44,349	75,393	90,100
US 27/US441	Sumter County Line to Griffin Ave.	6	1.11	49,200	36,084	40,053	54,612
US 27/US441	Griffin Ave. to Alt US 441 / Alt US 27	4	1.12	32,700	25,182	28,204	36,624
US 27/US441	Alt US 441 / Alt US 27 to CR 466	4	0.79	35,700	<i>10,333</i>	8,163	28,203
US 27/US441	CR 466 to Lake Ella Rd.	4	2.27	35,700	33,678	76,449	81,039
US 27/US441	Lake Ella Rd. to CR 466A / Miller Blvd.	4	1.89	35,700	29,063	54,929	67,473
US 27/US441	CR 466A/Miller Blvd. to CR 460 (MLK Jr.)	4	1.35	35,700	33,877	45,734	48,195
US 27/US441	CR 460 (MLK Jr.) to CR 466A (Picciola)	6	0.51	53,500	46,387	23,657	27,285
US 27/US441	CR 466A (Picciola) to CR 44A/Griffin Rd.	6	0.67	53,500	46,387	31,079	35,845
US 27/US441	CR 44A/ Griffin Rd. to US 27/US441 Split	6	0.15	49,200	46,387	6,958	7,380
US 441/ SR 500	US 27/US441 Split to Lee St.	4	0.75	32,700	30,337	22,753	24,525
US 441/ SR 500	Lee St. to N Canal St.	4	0.42	32,700	35,033	14,714	13,734
US 441/ SR 500	N Canal St. to E Dixie Ave.	4	1.06	32,700	30,239	32,053	34,662
US 441/ SR 500	E Dixie Ave. to E Main St.	6	0.25	53,500	46,160	11,540	13,375
US 441/ SR 500	E Main St. to CR 44	6	1.41	53,500	46,654	65,782	75,435
US 441/ SR 500	CR 44 to Radio Rd.	6	3.07	53,500	46,173	141,751	164,245
US 441/ SR 500	Radio Rd. to CR 473	6	0.88	53,500	<i>24,427</i>	21,496	47,080
US 441/ SR 500	CR 473 to Old US 441/ CR 500A	6	2.33	53,500	42,590	99,235	124,655
US 441/ SR 500	Old US 441/CR 500A to SR 19/Duncan Dr.	6	0.20	53,500	24,329	4,866	10,700
US 441/ SR 500	SR 19/Duncan to CR 452/St Clair Abrams	6	0.62	53,500	38,825	24,072	33,170
US 441/ SR 500	CR 452 to CR 452/L. Eustis Dr.	6	0.39	53,500	<i>24,427</i>	9,527	20,865
US 441/ SR 500	CR 452/Lake Eustis Dr. to D. Walker Dr.	6	1.22	53,500	<i>24,427</i>	29,801	65,270
US 441/ SR 500	David Walker Dr. to SR 19/ Bay St.	6	1.02	53,500	<i>24,427</i>	24,916	54,570
US 441/ SR 500	SR 19/ Bay St. to Old Mt Dora Rd.	6	1.36	53,500	32,981	44,854	72,760
US 441/ SR 500	Old Mt Dora Rd. to Donnelly St.	6	1.22	53,500	34,333	41,886	65,270
US 441/ SR 500	Donnelly St. to Wolf Branch Rd.	6	1.19	35,700	35,299	42,006	42,483
US 441/ SR 500	Wolf Branch Rd. to SR 46	6	1.31	35,700	28,699	37,596	46,767
US 441/ SR 500	SR 46 to Orange County Line	6	0.74	35,700	25,341	18,752	26,418
<b>Total</b>			<b>680.62</b>			<b>5,504,083</b>	<b>12,556,489</b>

*Source:* Lake County arterial and collector road segments, excluding Florida Turnpike; roadway segments, lengths, road type, ADT and capacity derived from Lake County concurrency spreadsheet, adopted major road maps and 2007 and 2008 traffic counts by Kimley-Horn and Associates, Inc., February 26, 2010; VMT is the product of segment length and ADT; ADT in *italics* are assumed based on 75% of the average ADT per lane-mile of the respective road classification; VMC is the product of segment length and capacity.

## APPENDIX C: LONG RANGE PLAN SUMMARY

**Table 80. Summary of Long Range Transportation Plan**

Project Name	Miles	Type	New Lane-Miles	
			Total	Widen
SR 44 (CR 44 to CR 44B)	1.16	2U-4D	2.32	2.32
SR 50 (US 27 to Hancock Rd)	2.13	4D-6D	4.26	4.26
SR 19 (SR 25 to 0)	6.8	2U-4D	13.60	13.60
SR 19 (CR 561 to CR 441 old)	1.66	4D-6D	3.32	3.32
SR 19/CR 561 Connector (CR 455 to CR 455)	3.21	0-2U	6.42	0.00
SR 50 (CR 561 to US 27)	2.07	4D-6D	4.14	4.14
SR 25 (US 27) (CR 25A S to Main St)	2.41	4D-6D	4.82	4.82
US 27/US 441 (W Boone Ct to Polk Co)	1.02	4D-6D	2.04	2.04
SR 500/US 441 (CR 44A to SR 44)	2.16	4D-6D	4.32	4.32
SR 500/US 441 (CR 44B to Wolf Branch Rd)	1.1	4D-6D	2.20	2.20
<b>Total State Roads</b>	<b>23.72</b>		<b>47.44</b>	<b>41.02</b>
Citrus Tower Blvd (US 27 to Mohawk Rd)	0.76	2U-4D	1.52	1.52
CR 33 (CR 48 to CR 470)	0.51	2U-4D	1.02	1.02
CR 44 (US 441 to CR 452)	9.92	2U-4D	19.84	19.84
CR 44 (CR 452 to SR 44)	3.94	2U-4D	7.88	7.88
CR 460 (CR 468 to US 27)	1.39	2U-4D	2.78	2.78
CR 466A (Sumter Co line to US 27/441)	3.63	2U-4D	7.26	7.26
CR 468 (SR 44 to CR 460)	1.39	2U-4D	2.78	2.78
CR 470 (SR 91 to US 27)	3.81	2U-4D	7.62	7.62
CR 561 (SR 25 to CR 561A)	0.48	2U-4D	0.96	0.96
Crittenden Rd (SR 50 to SR 33)	0.4	0-2U	0.80	0.00
Hancock Rd (Lake Louisa Rd to SR 50)	3.71	2U-4D	7.42	7.42
Hartle Rd (Hartwood Marsh Rd to SR 50)	2.32	2U-4D	4.64	4.64
Hooks St (Hancock Rd to Hartle Rd)	1.47	0-4D	5.88	0.00
Lake Louisa Rd (Hancock Rd to SR 25)	0.66	2U-4D	1.32	1.32
N Grassy Lake Rd (US 27 to Turkey Farms Rd)	1.07	0-4D	4.28	0.00
Shell Pond Rd (US 27 to Orange Co line)	3.31	0-4D	13.24	0.00
Turkey Farms Rd (CR 50 to Sullivan Rd)	2.88	0-4D	11.52	0.00
CR 439 (SR 44 to CR 44A)	1.51	2U-4D	3.02	3.02
CR 448 (CR 561 to Orange Co line)	5.19	2U-4D	10.38	10.38
CR 44A (Estes Rd to CR 439)	2.27	2U-4D	4.54	4.54
CR 44A (Leg) (CR 44 to CR 44A)	0.88	2U-4D	1.76	1.76
CR 455B (Fosgate Rd to CR 581)	1.55	0-4D	6.20	0.00
CR 466 (Chula Vista Av to US 27/441)	1.39	4D-6D	2.78	2.78
CR 468 (CR 460 to CR 466A)	2.01	2U-4D	4.02	4.02
CR 470 (Sumter Co line to CR 470)	0.93	2U-4D	1.86	1.86
CR 473 (US 441 to CR 44)	3.79	2U-4D	7.58	7.58
CR 48 (US 27 to SR 19)	6.68	2U-4D	13.36	13.36
CR 48 (N Austin Merritt to CR 33)	4.29	2U-4D	8.58	8.58
CR 50 (Lakeshore Dr to US 27)	0.3	0-2U	0.60	0.00
CR 561 (CR 561A to SR 19)	11.79	2U-4D	23.58	23.58
CR 561A (CR 561 to Fosgate Rd)	2.03	2U-4D	4.06	4.06
Eichelberger (SR 19 to CR 561)	1.12	2U-4D	2.24	2.24
Fosgate Rd (Turnpike Interschange Rd to CR 455 W)	3.46	0-4D	13.84	0.00

## Appendix C: Long Range Plan Summary

**Table 80 Continued.**

Project Name	Miles	Type	New Lane-Miles	
			Total	Widen
Grassy Lake Rd (Turkey Farms Rd to Sullivan Rd)	0.49	2U-4D	0.98	0.98
Hartle Rd (Shell Pond Rd to Hartwood Marsh Rd)	4.52	0-4D	18.08	0.00
Johns Lake Rd (Hancock Rd to Hartle Rd)	1.36	0-2U	2.72	0.00
Kurt St (US 441 to Golf Links)	0.84	2U-2D	0.00	0.00
Lake Griffin Rd (Lemmon St to Grays Airport Rd)	2.09	2U-4D	4.18	4.18
Lakeshore Dr (Crescent Ln to Lake Louisa Rd)	1.99	2U-4D	3.98	3.98
Lemon St (US 2/ 441 to Lake Griffin Rd)	0.15	2U-4D	0.30	0.30
N Frontage Rd (Start to CR 50)	2.01	0-2U	4.02	0.00
Radio Rd (Treadway School Rd to CR 44)	1.72	2U-4D	3.44	3.44
Ranch Rd (Wolf Branch Rd to SR 44)	2.56	0-4D	10.24	0.00
North-South Corridor (SR 91 to US 27/441)	12.46	2U-4D	24.92	24.92
Round Lake Rd (Orange Co line to Wolf Branch Rd)	2.02	2U-4D	4.04	4.04
Sullivan Rd (Grassy Lakes Rd to Turkey Farms Rd)	1.14	0-2U	2.28	0.00
Turnpike Interchange Rd (Turkey Farms to Fosgate)	0.47	0-6D	2.82	0.00
<b>Total County Roads</b>	<b>124.66</b>		<b>291.16</b>	<b>194.64</b>
<b>Total, State and County Roads</b>	<b>148.38</b>		<b>338.60</b>	<b>235.66</b>
<b>County Roads as Percent of Total New Lane-Miles</b>			<b>86.0%</b>	
<b>County Widening Projects as Percent of County New Lane-Miles</b>				<b>66.8%</b>

Source: Lake –Sumter MPO Long Range Transportation Plan, Cost Affordable Plan, August 2009.

## APPENDIX D: COMPARISON OF VMT PER UNIT

**Table 81. Comparison of 2001, 2007 and Updated Major Road VMT per Unit**

Land Use	Unit	2001 VMT	2007 VMT	Updated VMT
Single-Family Detached				
Less than 1,500 sf (Low Income)	Dwelling	27.43	21.59	24.95
Less than 1,500 sf	Dwelling	27.43	36.67	24.95
1,501 to 2,499 sf	Dwelling	36.55	36.67	33.24
2,500 sf or greater	Dwelling	43.13	36.67	39.22
Multi-Family				
Multi-Family (1-2 Stories)	Dwelling	23.69		
Multi-Family (3+ Stories)	Dwelling	15.10		
Mobile Home Park	Space	14.57	10.74	9.99
Active Adult Community	Dwelling	19.16	13.14	12.23
Lodging	Room			16.30
Hotel	Room	24.12	22.95	
Motel	Room	13.14	12.40	
Campground/RV Park	Space	9.10	8.72	
Public/Institutional	1,000 sf			10.86
Assisted Care Living Facility	Dwelling	5.35	3.91	
General Recreation/County Park	Acre	6.57	6.20	
Elementary School	Student	3.02	3.60	
Middle School	Student	4.83	5.09	
High School	Student	5.96	5.37	
Junior/Community College	Student	5.96	7.72	
University/College	Student	9.21	5.79	
Church	1,000 sf	22.55	21.28	
Day Care Center	1,000 sf	81.58	72.89	
Cemetery	Acre	17.97		
Library	1,000 sf	105.57	73.41	
Hospital	1,000 sf	41.35	40.86	
Nursing Home	Bed	4.26	3.82	
Airport Hanger	1,000 sf	25.42	25.42	
Government Complex-Muni	1,000 sf	74.47	74.47	
Government Complex-Cty	1,000 sf	167.52	167.52	
Fire Station	1,000 sf	59.40	59.40	
Office	1,000 sf			32.62
10,000 SF or less	1,000 sf	74.88	49.82	
10,001 - 30,000 SF	1,000 sf	63.77	45.36	
30,001 - 100,000 SF	1,000 sf	48.52	38.68	
100,001 - 400,000 SF	1,000 sf	35.49	32.98	
400,001 or greater	1,000 sf	28.97	28.11	
Single-Tenant Office	1,000 sf	38.27	48.86	
Research Center	1,000 sf	25.30	23.87	
Medical Office/Clinic	1,000 sf	113.00	117.10	
Office Park	1,000 sf	35.63		
Business Park	1,000 sf	39.81	41.47	

## Appendix D: Comparison of VMT per Unit

**Table 81. Continued**

Land Use	Unit	2001 VMT	2007 VMT	Updated VMT
Retail	1,000 sf			41.53
50,000 SF or Less	1,000 sf	72.46	63.32	
50,001 - 200,000 GSF	1,000 sf	54.83	65.23	
200,001 - 600,000 GSF	1,000 sf	52.68	56.46	
Greater than 600,001 SF	1,000 sf	56.28	53.48	
Movie Theater w/Matinee	Screen	206.77	137.47	
Building Materials and Lumber	1,000 sf	98.95	140.02	
Discount Superstore	1,000 sf	46.02	53.32	
Discount Superstore (under 120k sf)	1,000 sf	64.08	59.91	
Home Improvement Superstore	1,000 sf	40.16	40.16	
Specialty Retail	1,000 sf	82.79		
Hardware/Paint Store	1,000 sf	165.86	156.56	
Wholesale Nursery	1,000 sf	14.32		
New/Used Auto Sales	1,000 sf	96.96	80.27	
Supermarket	1,000 sf	89.12	80.76	
Convenience Store w/ Gas Pump	1,000 sf	277.10	317.96	
Pharmacy/Drug Store	1,000 sf	70.46	43.83	
Furniture Store	1,000 sf	11.75	11.08	
Bank/Savings Drive-In	1,000 sf	216.48	215.64	
Bank	1,000 sf	145.45		
Quality Restaurant	1,000 sf	151.34	144.50	
High Turnover Restaurant	1,000 sf	198.48	191.31	
Fast Food Rest w/Drive-Thru	1,000 sf	330.76	483.48	
Bar/Lounge/Drinking Place	1,000 sf	198.48	162.89	
Quick Lube	Bay	66.96	63.22	
Auto Repair or Body Shop	1,000 sf	68.76	58.84	
Gas/Service Station	Pump	39.54	49.04	
Self Serve Car Wash	Bay	115.73	109.17	
Convenience Store w/ Gas and Food	1,000 sf	578.15	545.07	
Stand-Alone Meeting Fac.	1,000 sf	53.03	53.03	
Veterinarian Clinic	1,000 sf	32.37	30.54	
Golf Course	Hole	111.13	104.86	
Amusement and Rec	1,000 sf	436.17		
Marina	Berth	11.19	10.55	
Horse Training	Acre	16.24		
Racquet Club/Health Spa	1,000 sf	55.67	42.99	
Bowling Alley	1,000 sf	105.94	99.96	
Health Club/Dance Studio	1,000 sf	55.67	100.91	
Industrial/Manufacturing				18.22
General Light Industrial	1,000 sf	35.72	35.72	
General Heavy Industrial	1,000 sf	7.69	7.69	
Industrial Park	1,000 sf	35.67		
Manufacturing	1,000 sf	19.58	19.58	
Utilities Building	1,000 sf	41.00	41.00	
Warehouse	1,000 sf	25.42	25.42	16.98
High-Cube Warehouse	1,000 sf	8.78	8.78	
Mini-Warehouse	1,000 sf	5.03	5.03	4.68

Source: 2001 VMT from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, December 2001; 2007 VMT from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, July 2007; updated VMT from Table 21.

## APPENDIX E: THROUGH TRAFFIC

Through traffic is defined as traffic that passes through Lake County without making a stop. Kimley-Horn and Associates developed the estimate of through traffic utilizing roadways in Lake County using the following methodology.

The first step was to determine the through traffic VMT for five high-volume locations entering Lake County: northbound US 27 at the Polk County line, southbound US 27/441 at the Sumter County line, northbound US 441 at the Orange County line, eastbound SR 50 at the Sumter County line, and westbound SR 50 at the Orange County line. This was accomplished by using the regional travel demand model to determine the percent of through traffic that exits the county at different points, then multiplying those by the traffic volume at the entering point (50% of the ADT listed in Table 81 was used to approximate the daily directional volume) to get the exiting traffic volumes. The exiting volumes were then multiplied by the distance for each through traffic travel path to get the VMT for each path. Any portion of the path that was on the Turnpike or outside Lake County was excluded. The sum of all the VMT is the total through traffic VMT for that entering location. Table 82 summarizes this step for all five locations.

**Table 82. Modeled Through Traffic from Major Entry Points**

Through Traffic Exiting at	Volume	Miles	VMT
SR 33 Polk Co	461	11.3	5,212
SR 50 Sumter Co	9	28.3	251
Tuscanooga Rd Sumter Co	149	29.7	4,413
CR 470 Sumter Co	18	37.7	669
Turnpike Sumter Co (excluding portion on Turnpike)	1,233	27.6	34,028
SR 44 Sumter Co	2	41.4	92
CR 466 Sumter Co	16	47.0	730
US27/US 441 Sumter Co	171	48.2	8,230
SR 25 Marion Co	40	48.2	1,924
CR 452 Marion Co	55	52.9	2,933
CR 42 Marion Co	7	51.5	343
SR 19 Marion Co	42	65.1	2,743
SR 40 Volusia Co	42	68.6	2,890
SR 44 Volusia Co (excluding portion in Orange Co)	175	55.4	9,705
SR 46 Seminole Co (excluding portion in Orange Co)	452	44.7	20,220
CR 448 Orange Co	4	33.5	149
Duda Rd Orange Co	13	32.7	435
SR 50 Orange Co	266	18.1	4,816
Hartwood Marsh Rd Orange Co	641	15.8	10,125
<b>Total Entering US 17 Northbound</b>			<b>109,908</b>

## Appendix E: Through Traffic

**Table 82 Continued.**

Through Traffic Exiting at	Volume	Miles	VMT
SR 25 Marion Co	112	4.1	459
SR 46 Seminole Co	179	40.7	7,270
CR 435 Orange Co	5	35.2	191
CR 437 Orange Co	20	34.2	679
Round Lake Rd Orange Co	117	31.6	3,706
Old US 441 Orange Co	87	28.7	2,485
Sadler Rd Orange Co	336	29.0	9,732
Turnpike Orange Co (excluding portion on Turnpike)	787	24.6	19,351
SR 50 Orange Co	263	38.5	10,141
Hartwood Marsh Rd Orange Co	4	41.7	150
US 27 Polk Co	182	48.2	8,783
SR 33 Polk Co	2	44.5	80
CR 466 Sumter Co	60	3.7	220
<b>Total Entering US 27 Southbound</b>			<b>63,247</b>
CR 452 Marion Co	1,474	19.0	27,998
CR 42 Marion Co	269	17.0	4,566
SR 19 Marion Co	1,080	30.7	33,141
<b>Total Entering US 441 Northbound</b>			<b>65,705</b>
SR 44 Volusia Co	1	55.4	72
SR 46 Seminole Co	3	48.0	125
Duda Rd Orange Co	3	27.1	89
SR 50 Orange Co	551	18.7	10,303
Hartwood Marsh Rd Orange Co	8	21.7	184
US 27 Polk Co	51	28.3	1,443
SR 33 Polk Co	1	20.6	27
<b>Total SR 50 Eastbound</b>			<b>12,243</b>
US 27 Polk Co	14	18.2	259
SR 33 Polk Co	275	25.7	7,060
SR 50 Sumter Co	97	18.7	1,816
Tuscanooga Rd Sumter Co	1,302	20.1	26,180
CR 470 Sumter Co	31	28.1	865
Turnpike Sumter Co (excluding portion on Turnpike)	1,158	17.7	20,497
SR 44 Sumter Co	2	31.7	75
CR 466 Sumter Co	24	37.4	886
US27/US 441 Sumter Co	256	38.5	9,847
SR 25 Marion Co	69	38.5	2,644
CR 452 Marion Co	19	43.2	818
SR 19 Marion Co	5	52.0	246
<b>Total SR 50 Westbound</b>			<b>71,193</b>

Source: Kimley-Horn and Associates, Inc., April 21, 2010.

Based on the model roadway network structure, there are 29 locations at which traffic enters Lake County. The VMT for the remaining 24 entering locations were estimated based on the five that had been modeled. The five modeled locations are high-volume roadways that enter the county, whereas the remaining 24 are mostly very low-volume roadways. The ratio of VMT-to-entering traffic volume were observed for the modeled entry locations. The results ranged from 1.87 to 5.19. However, the 1.87 ratio is somewhat of an outlier since it was at the relatively lower volume location of SR 50 at the Sumter County line. It is reasonable to expect low-volume roadways to have a

smaller percentage of through traffic. Using this logic, a ratio of 1.5 was applied to all the entering locations that had an entering volume of less than 5,000 and 4.0 (approximately the average of the other four calculated ratios) was applied to entering locations with volumes above 5,000. Summing up the calculated VMT (for the five modeled locations) and the estimated VMT (for the other 24) results in the total VMT of 528,423, as shown in Table 83.

**Table 83. Estimated Total Through Traffic VMT**

Through Traffic Entering At:	Entering Volume	Ratio	Through VMT
US 27 NB at Polk Co	22,175	4.96	109,908
US 27 SB at Sumter Co	18,042	3.51	63,247
US 441 NB at Orange Co	12,671	5.19	65,705
SR 50 EB at Sumter Co	6,536	1.87	12,243
SR 50 WB at Orange Co	23,682	3.01	71,193
CR 25 (Alt 27) SB at Marion Co	3,509	1.50	5,264
CR 452 SB at Marion Co	2,915	1.50	4,373
CR 450 SB at Marion Co	642	1.50	963
CR 42 EB at Marion Co	1,624	1.50	2,436
SR 19 SB at Marion Co	1,075	1.50	1,613
SR 40 EB at Marion Co	2,934	1.50	4,401
SR 40 WB at Volusia Co	3,562	1.50	5,343
SR 44 WB at Volusia Co	5,607	4.00	22,428
SR 46 WB at Seminole Co	9,755	4.00	39,020
CR 435 NB at Orange Co	2,690	1.50	4,035
CR 437 NB at Orange Co	3,436	1.50	5,154
Round Lake Rd NB at Orange Co	1,516	1.50	2,274
CR 500A/Old 441 NB at Orange Co	2,338	1.50	3,507
CR 448 WB at Orange Co	2,645	1.50	3,968
Duda Rd WB at Orange Co	2,476	1.50	3,714
CR 50 WB at Orange Co	2,446	1.50	3,669
Hartwood Marsh Rd WB at Orange Co	4,123	1.50	6,185
SR 33 NB at Polk Co	2,475	1.50	3,713
Tuscanooga Rd EB at Sumter Co	261	1.50	392
CR 48 EB at Sumter Co	1,218	1.50	1,827
CR 470 EB at Sumter Co	2,624	1.50	3,936
SR 44 EB at Sumter Co	9,521	4.00	38,084
CR 466A EB at Sumter Co	3,624	1.50	5,436
CR 466 EB at Sumter Co	8,598	4.00	34,392
<b>Total</b>			<b>528,423</b>

Source: Kimley-Horn and Associates, Inc., April 21, 2010.

# APPENDIX F: PARK FACILITY INVENTORY

**Table 84. Park Facilities Inventory**

Park Name	Acres	Baseball Fields	Basketball Court	Board Walk (L/F)	Canoe Launch	Blueways	Playground	Fishing Pier	Boat Ramp	Horseshoe Pits	Irrigation (Acres)
Arnold Brothers Boat Ramp	0.15			215				1	1		
Astatula Boat Ramp	0.25								1		
Astor Lions Park	10.00	2	1							1	10.00
Blackstill Lake Road Trail	1.82										
Blue Creek Run Blueway						16.2					
Butler Street Boat Ramp	3.45								1		
Carlton Village Park	3.09										
East Lake Community Park	48.53										
Ferndale Preserve	196.00										10.00
Golden Triangle Run						34.6					
Hancock Trail	5.82										
Haynes Creek Park	36.09										
Helena Run Blueway						8.7					
John's Lake Boat Ramp	1.30								1		
Lake Dalhousie Boat Ramp	0.70								1		
Lake George Boat Ramp	0.70								1		
Lake Griffin Run Blueway						22.0					
Lake Harris Run						15.7					
Lake Holly Boat Ramp	0.50								1		
Lake Idamere Park	45.00						3	1			
Lake Jem Park & Boat Ramp	11.00		1				3		1		
Lake Joanna Park	0.50										
Lake Mack Park	1.65		1		1		1				
Lake Saunders Boat Ramp	0.20								1		
Lake Thomas Cove Park	4.60										
Lake Yale Boat Ramp West	0.70				1				1		
Lake Yale Boat Ramp East	0.70								1		
Marsh Park & Boat Ramp	35.00		1		1		1	1	1		10.00
McTureous Memorial Park	2.56						1				
Mt. Plymouth Park	0.40						1				
North Lake Community Park	96.00	4	2				3				96.00
Paisley Community Park	8.10	1	1				2			3	8.10
Palatlakaha River Park & BR	23.00					27.4			1		
PEAR Park Gateway	50.00	2		600	1		2				10.00
PEAR Park	268.00										
Pearl Street Boat Ramp	0.25								1		
Pine Forest Park	48.00		1				3				10.00
Saint Francis/Dead R. Run						10.0					
Scott Park	0.65						1				
Sleepy Hollow Road Trail	0.24										
Sorrento Park	3.38		1				3				
South Lake Trail	13.33			500							
South Umatilla Park	4.00						1				
Sparks Village Boat Ramp	0.23								1		
Spring Lake Park	0.38										
Stagger Mud Lake Blueway						11.3					
Sylvan Shores Park	4.94				1						4.94
Trout Lake Park	0.31										
Twin Lakes Park	14.50		1	750			3				14.50
Umatilla Veterans Hall	0.75										
Wilson Lake Parkway Trail	7.27										
<b>Total</b>	<b>954.04</b>	<b>9</b>	<b>10</b>	<b>2,065</b>	<b>5</b>	<b>145.9</b>	<b>28</b>	<b>3</b>	<b>15</b>	<b>4</b>	<b>173.54</b>

Table 84 Continued

Park Name	Kiosk	Landscaping (Acres)	Multi-use Fields	Parking Spaces	Pavilion (Shelter)	Restrooms	Tennis Courts	Stand-Alone Trail (miles)	Paved Trails (Miles)	Unpaved Trails (Miles)	Volleyball Court
Arnold Brothers Boat Ramp		0.15		14	1						
Astatula Boat Ramp				14							
Astor Lions Park		10.00	1	13	1	1	1				1
Blackstill Lake Road Trail								0.75			
Blue Creek Run Blueway											
Butler Street Boat Ramp				34							
Carlton Village Park											
East Lake Community Park											
Ferndale Preserve	1			25	1	1				7.00	
Golden Triangle Run											
Hancock Trail				4				2.40			
Haynes Creek Park										0.80	
Helena Run Blueway											
John's Lake Boat Ramp				44							
Lake Dalhousie Boat Ramp											
Lake George Boat Ramp											
Lake Griffin Run Blueway											
Lake Harris Run											
Lake Holly Boat Ramp											
Lake Idamere Park	2	10.00		72	2	1			0.40	1.50	
Lake Jem Park & Boat Ramp	2	11.00		16	2	1				0.40	
Lake Joanna Park											
Lake Mack Park				8							
Lake Saunders Boat Ramp											
Lake Thomas Cove Park											
Lake Yale Boat Ramp West											
Lake Yale Boat Ramp East											
Marsh Park & Boat Ramp	1	10.00		20							
McTureous Memorial Park				27	1	1					
Mt. Plymouth Park											
North Lake Community Park	8	96.00	5	500	10	2	6		2.00	1.70	4
Paisley Community Park		8.10		45	2	1				0.40	
Palatlakaha River Park & BR				36	1	2				0.80	
PEAR Park (Gateway)	3	10.00		100		1				0.80	
PEAR Park			1	350	2	1				4.30	
Pearl Street Boat Ramp				10							
Pine Forest Park		10.00	1	14	2	1				0.50	
Saint Francis/Dead R. Run											
Scott Park											
Sleepy Hollow Road Trail								0.10			
Sorrento Park				24	1						
South Lake Trail								5.50			
South Umatilla Park				36	1						
Sparks Village Boat Ramp											
Spring Lake Park											
Stagger Mud Lake Blueway											
Sylvan Shores Park											
Trout Lake Park											
Twin Lakes Park	1	14.50		23	3	1			0.50		
Umatilla Veterans Hall											
Wilson Lake Parkway Trail								3.00			
<b>Total</b>	<b>18</b>	<b>179.75</b>	<b>8</b>	<b>1,429</b>	<b>30</b>	<b>14</b>	<b>7</b>	<b>11.75</b>	<b>2.90</b>	<b>18.20</b>	<b>5.00</b>

Source: Lake County Department of Public Resources, Parks and Trails Division, April 15, 2010.