

Lake County, Florida

Transportation Impact Fee

Update



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INTRODUCTION

The purpose of this project is to assist Lake County in updating its impact fees for transportation.

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.

Background

The County’s transportation impact fees were last updated in 2002, based on a 2001 study by Tindale-Oliver & Associates. The fees were adopted at 63.4% of the maximum fees calculated in the 2001 study. An update prepared in 2007 by Tindale-Oliver was not adopted. An earlier version of this study was prepared in June 2010. However, it was set aside after the Lake County Board of County Commissioners suspended transportation impact fees effective March 2, 2010. This study updates the June 2010 draft with current data.

Changes in Approach

This update retains the consumption-based transportation impact fee methodology that was used in previous studies. 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 methodology and data inputs from the previous impact fee updates are summarized as follows:

Simplified 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 83 very detailed categories, and this update recommends consolidating them down to 13 more general categories. 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.

Benefit Districts

The transportation benefit districts are proposed to be reduced from six to three, in order to better align with current city limits and planning areas and to provide greater flexibility in spending limited impact fee revenues.

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.

Potential Impact Fee Summary

The following table compares the updated transportation impact fees calculated in this report to the fees adopted in 2002 (currently suspended) and those calculated in previous studies for typical residential and nonresidential land use types. (A more detailed comparison of all land use categories can be found in Table 21.) Note that the updated fees are lower for most land uses, and only modestly higher for single-family and commercial, than those calculated 12 years ago. They are also significantly lower than the fees calculated in the 2007 and 2010 studies.

Table 1. Transportation Impact Fee Comparison

Land Use Type	Unit	Adopted					Change From 2001
		Study 2001	2002 (63.4%)	Study 2007	Study 2010	Study 2013	
Single-Family							
Less than 1,500 sf	Dwelling	\$2,590	\$1,642	\$6,689	\$3,457	\$2,904	12%
1,500 to 2,499 sf	Dwelling	\$3,453	\$2,189	\$11,352	\$4,606	\$3,867	12%
2,500 sf or greater	Dwelling	\$4,074	\$2,583	\$11,352	\$5,434	\$4,564	12%
Multi-Family	Dwelling	\$2,221	\$1,408	\$5,208	\$2,126	\$1,772	-20%
Mobile Home Park	Space	\$1,355	\$859	\$3,287	\$1,331	\$1,109	-18%
Active Adult Community	Dwelling	\$1,819	\$1,153	\$4,057	\$1,678	\$1,408	-23%
Hotel/Motel	Room	\$2,281	\$1,446	\$7,145	\$2,238	\$1,874	-18%
Retail/Commercial	1,000 sf	\$3,434	\$2,177	\$19,815	\$5,349	\$4,401	28%
Office	1,000 sf	\$4,468	\$2,833	\$13,995	\$4,475	\$3,748	-16%
Public/Institutional	1,000 sf	\$2,085	\$1,322	\$6,535	\$1,404	\$1,161	-44%
Industrial/Manufacturing	1,000 sf	\$3,402	\$2,157	\$11,093	\$2,553	\$2,151	-37%
Warehouse	1,000 sf	\$2,421	\$1,535	\$7,900	\$2,379	\$2,005	-17%
Mini-Warehouse	1,000 sf	\$457	\$290	\$1,534	\$620	\$514	12%

Note: The following land use categories from the 2002 and 2007 studies were used for comparison: multi-family – multi-family (1 and 2 story); hotel/motel – average of hotel and motel; retail/commercial – retail (50,001-200,000 sq. ft.); office – office (30,001-100,000 sq. ft.); industrial/manufacturing – general light industrial.

Source: Adopted fees from County web site; 2001 study fees from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, December 2001; 2007 study fees from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, July 2007; 2010 fees from Duncan Associates, *Lake County, Florida Impact Fee Update for Transportation, Parks, Libraries and Fire Rescue*, June 2010; 2013 fees from Table 20.

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.¹

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.”

(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.

¹ *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).

(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 developments in a community do 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.

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, and the suspension was subsequently extended until March 1, 2013. 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).² 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.³ 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 data available.

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 districts have been in place since the transportation impact fees were originally established in 1985.

The current benefit districts were reviewed to determine if the number or boundaries of the districts should be changed to better serve the County's needs. There are two main problems with the current benefit districts. First, due to annexations, some municipalities are now split between two or more districts, making the current boundaries less relevant to the coordination of regional transportation needs and the funding of improvements. Second, declining revenue is making it more difficult to accumulate sufficient funds in all districts to make improvements.

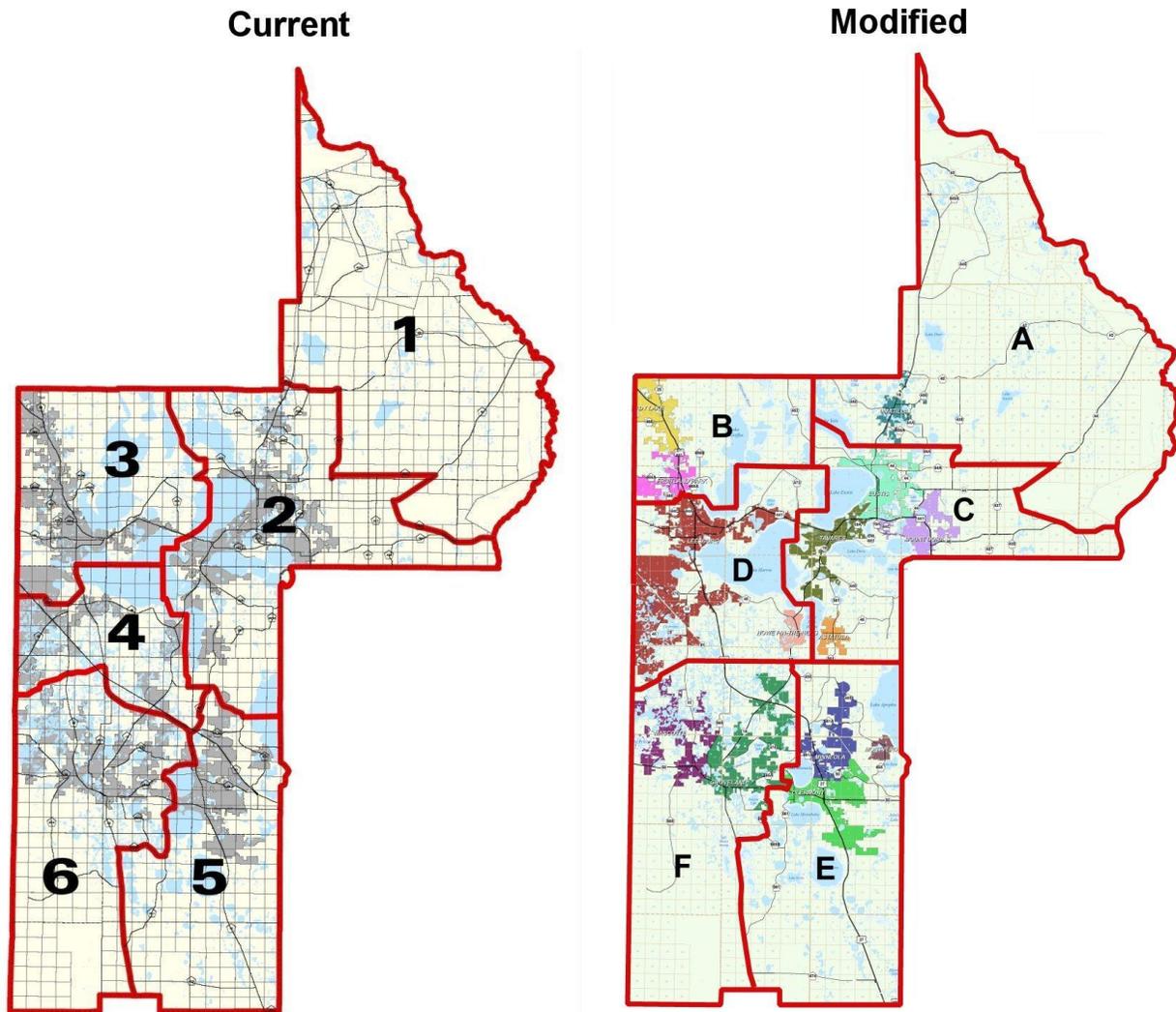
In the process of this review, the consultants developed two options: a 6-district option and a 3-district option. The 6-district option primarily addresses the issue of municipalities being split between multiple benefit districts. The 3-district option, which is recommended, also addresses the problem of accumulating sufficient revenue to efficiently fund needed improvements.

² Tindale-Oliver & Associates, Inc., *Lake County Transportation Impact Fee Update Study*, December 2001.

³ Tindale-Oliver & Associates, Inc., *Lake County Transportation Impact Fee Update Study*, July 2007.

The 6-district option modifies existing boundaries as necessary to avoid splitting cities and adopted or proposed joint planning areas into more than one district. In developing this option, the consultants propose one change that is unrelated to this issue, and that is to expand district 1 to include Umatilla in order to provide this district with a little more revenue potential. All of the other proposed boundary changes were driven by the need to avoid splitting cities or joint planning areas. Proposed boundary lines follow roads or section lines. The proposed 6-district option is compared with the current 6-district configuration in Figure 1.

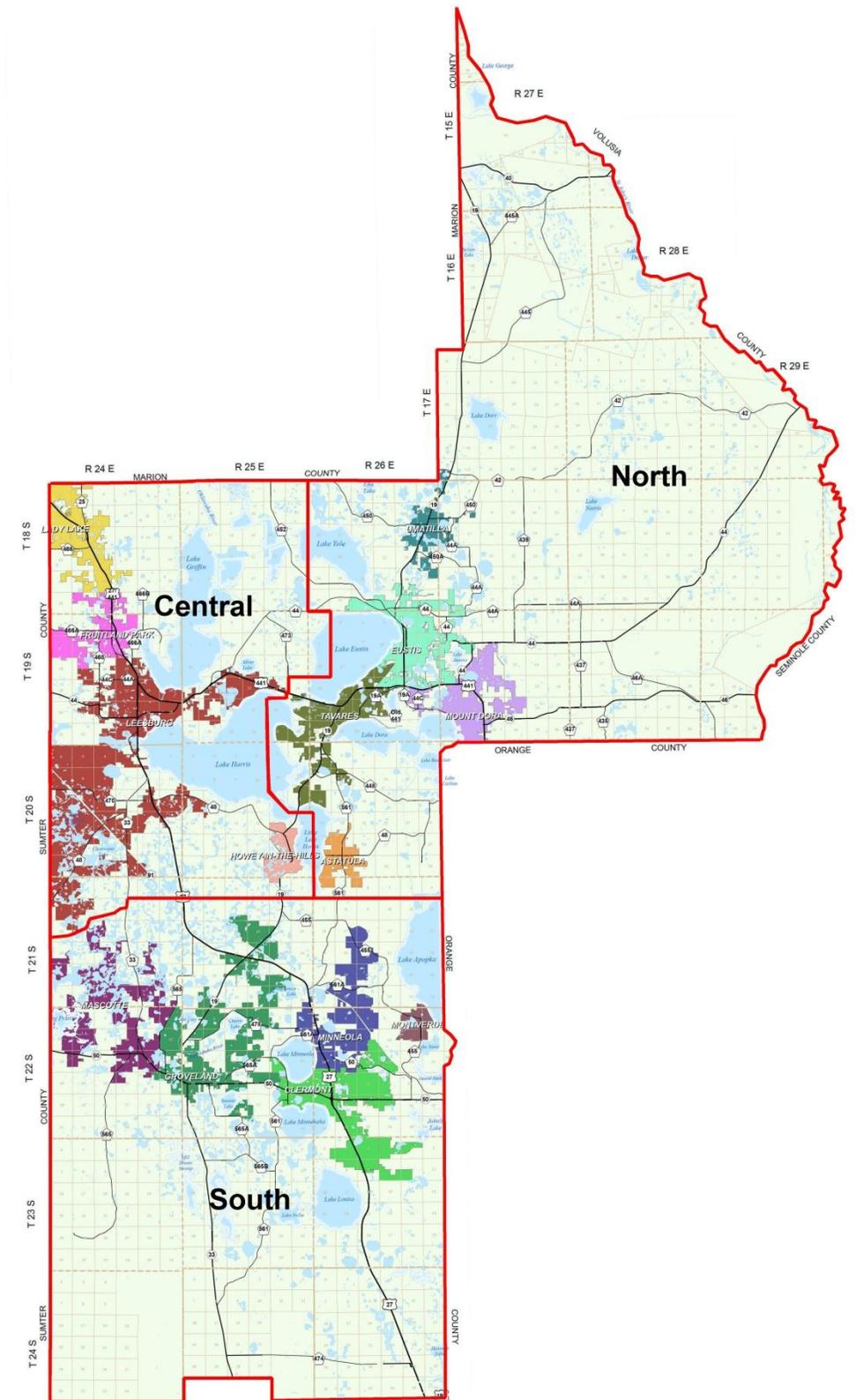
Figure 1. Current and Modified Six Transportation Benefit Districts



As discussed above, the proposed district A is simply the current district 1 plus Umatilla. The proposed district C is essentially the current district 2 without Umatilla and the northern tip of Minneola. The proposed district B is comparable to the current district 3, including Lady Lake and Fruitland Park, but the southern boundary has been moved north to avoid splitting Leesburg. The proposed district D is Leesburg plus Howie-in-the-Hills—it includes the part of Leesburg that was in district 3, and excludes the part of Groveland that is now in district 4. With the proposed districts E and F, the boundary between the current districts 5 and 6 has been adjusted to avoid splitting cities or joint planning areas. District E includes all of Mineola, which is currently split between districts 2, 5 and 6. It also includes all of Clermont, which currently is split between districts 5 and 6, as well as Montverde. District F includes all of Groveland, which is now split between districts 4 and 6, as well as Mascotte.

The recommended 3-district alternative is shown in Figure 2 on the following page. This alternative collapses the proposed six districts into three in order to accumulate more impact fee revenue in each district and provide the County with greater flexibility in where to spend the revenue, while also respecting existing city limits and joint planning areas. Staff of the Lake-Sumter Metropolitan Planning Organization (MPO) reviewed these district boundaries and found them to be compatible with the MPO's three planning areas. 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.

Figure 2. Recommended Three Transportation Benefit Districts



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. Lake 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 22 in Appendix A. 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 22, Appendix A).

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 2.

Table 2. Expected Vehicle-Miles of Travel

Land Use Type	Unit	Existing Units	Trip Rate	New Trips	Trip Length	Daily VMT
Single-Family	Dwelling	107,461	8.50	100%	8.40	3,836,358
Multi-Family	Dwelling	18,987	6.33	100%	5.35	321,502
Mobile Home Park	Space	19,773	4.67	100%	4.60	212,382
Retail/Commercial	1,000 Sq. Ft.	20,388	42.94	62%	3.35	909,166
Office	1,000 Sq. Ft.	5,334	11.01	92%	6.92	186,941
Industrial	1,000 Sq. Ft.	6,629	3.82	92%	11.14	129,764
Warehousing	1,000 Sq. Ft.	8,253	3.56	92%	11.14	150,558
Public/Institutional	1,000 Sq. Ft.	10,103	7.58	89%	3.46	117,911
Total Expected VMT						5,864,582

Source: County-wide existing residential units based on 2000 and 2010 U.S. Census and building permit data; county-wide nonresidential land use from Lake County Property Appraiser’s Office 2011 tax rolls; 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 18); 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 3. 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 3. Actual versus Expected Vehicle-Miles of Travel

Actual Daily VMT on Major Road System	5,470,521
– Estimated Through Traffic	-525,170
Locally-Generated VMT on Major Road System	4,945,351
÷ Expected Locally-Generated VMT	5,864,582
Ratio of Actual Daily VMT to Expected VMT	0.843

Source: Actual VMT from Table 22, Appendix A; estimated through traffic is actual VMT times percent through traffic from Table 26, Appendix D; expected VMT from Table 2.

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 D 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 (cost/VMT = cost/VMC times VMC/VMT, where 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 4.

Table 4. Existing Major Roadway System Level of Service

Existing Daily Vehicle-Miles of Capacity (VMC)	12,556,489
Existing Daily Vehicle-Miles of Travel (VMT)	5,470,521
Existing VMC/VMT Ratio	2.3

Source: VMC and VMT from Table 22, Appendix A.

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 two most recent County road projects are the widening of CR 466 from two to four lanes, from the Sumter County line to US 27, and the widening of Hooks Street from two to four lanes, from SR 25 to Hancock, Phase IVB. The CR 466 project was bid in 2009, while the Hooks Street project was completed in 2012. While both projects are widening projects, like most such projects they involve the complete reconstruction of the two existing lanes, and are therefore also reasonably reflective of the cost to construct a new four-lane-road. The CR 466 project is somewhat unique because it was a joint project between a private developer (The Villages) and Lake County. The engineering/construction costs per mile of 4-lane road derived from the two projects are summarized in Table 5. The cost per mile of the more recent Hooks Street project is lower, and will be used in this update.

Table 5. County Road Construction Cost per Mile

	CR 466	Hooks St
Engineering Cost	\$1,296,201	\$50,000
Construction Cost	\$7,484,727	\$1,519,580
Total Engineering/Construction Cost	\$8,780,928	\$1,569,580
÷ Length (miles)	2.06	0.505
Eng./Construction Cost per Mile, 4-Lane Road	\$4,262,587	\$3,108,079

Source: Lake County Department of Public Works, December 22, 2009 and December 4, 2012.

The CR 466 and Hooks Street projects also provide the most recent actual costs of ROW acquisition. While the 466 project was the first time the County 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-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. A reasonable estimate of future ROW costs is about \$1.5 million per mile of four-lane roadway, as shown in Table 6.

Table 6. County Right-of-Way Cost per Mile

Project Description	ROW Cost Est.	Miles	ROW Cost/Mile
Hooks St (SR 25 to Hancock Rd)	\$1,848,950	0.51	\$3,625,392
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
Total ROW Cost per Mile, 4-Lane Road	\$18,113,176	11.92	\$1,519,562

Source: Actual ROW cost for Hooks Street and CR 466 widenings from Lake County Engineering, December 4, 2012; ROW costs for Hartwood Marsh and CR 470 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 \$4.6 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 \$1.8 million per lane-mile, as shown in Table 7.

Table 7. Average County Road Cost per Lane-Mile

Construction Cost per Mile (4-Lane Road)	\$3,108,079
Right-of-Way Cost per Mile (4-Lane Road)	\$1,519,562
Total Cost per Mile (4-Lane Road)	\$4,627,641
Total Cost per New Lane-Mile, New Road	\$1,156,910
Total Cost per New Lane-Mile, 2-4 Lane Widening	\$2,313,821
Percent of New Lane-Miles from Widening Projects	57.1%
Weighted Average Cost per New Lane-Mile	\$1,817,506

Source: Construction cost per mile from Table 5; ROW cost per lane-mile from Table 6; percent of new County road lane-miles from widening projects from Lake-Sumter MPO, 2035 *Long Range Transportation Plan*, Cost Feasible Plan (see Table 23).

State Road Cost per Lane-Mile

The average construction/design cost of improving State roads in Lake County is based on the Florida Department of Transportation’s January 2012 cost model. Right-of-way cost estimates were based on ROW as a percentage of construction/design costs for five projects on the List of Priority Projects. The resulting total cost per lane-mile is summarized in Table 8.

Table 8. Average State Road Cost per Lane-Mile

Cost Component	Quantity	Units	Unit Cost	Total Cost
Mobilization	1	EA	n/a	\$229,394
Maintenance Of Traffic	1	EA	n/a	\$208,540
Sediment Barrier	10,560.00	LF	\$1.42	\$14,995
Floating Turbidity Barrier	100	LF	\$9.04	\$904
Staked Turbidity Barrier	100	LF	\$4.65	\$465
Soil Tracking Prevention Device	1	EA	\$1,753.84	\$1,754
Inlet Protection System	26	EA	\$77.36	\$2,011
Litter Removal	1.9	AC	\$46.56	\$88
Mowing	1.9	AC	\$55.14	\$105
Clearing & Grubbing	7.27	AC	\$7,415.52	\$53,911
Borrow Excavation, Truck Measure	4,224.00	CY	\$11.55	\$48,787
Type B Stabilization	15,053.87	SY	\$3.89	\$58,560
Optional Base, Base Group 09	12,413.87	SY	\$13.78	\$171,063
Milling Exist Asph Pavt, 2" Avg Depth	37,546.67	SY	\$1.40	\$52,565
Superpave Asphaltic Conc, Traffic C	4,751.27	TN	\$81.44	\$386,943
Asphalt Concrete Friction Course	4,059.73	TN	\$126.79	\$514,733
Concrete Class II, Endwalls	18	CY	\$887.66	\$15,978
Inlets, Curb, Type P-5, <10'	36	EA	\$4,345.43	\$156,435
Inlets, Curb, Type J-5, <10'	10	EA	\$4,603.94	\$46,039
Pipe Culvert	552	LF	\$72.07	\$39,783
Pipe Culvert, Opt Material, Round, 30"S/CD	160	LF	\$65.57	\$10,491
Concrete Curb & Gutter, Type F	10,560.00	LF	\$22.41	\$236,650
Sidewalk Concrete, 4" Thick	5,866.67	SY	\$30.78	\$180,576
Performance Turf, Sod	16,437.33	SY	\$3.67	\$60,325
Single Post Sign, F&I, Less Than 12 sf	22	AS	\$310.24	\$6,825
Single Post Sign, F&I, 12-20 sf	2	AS	\$709.08	\$1,418
Single Post Sign, Relocate	2	AS	\$158.67	\$317
Single Post Sign, Remove	22	AS	\$23.76	\$523
Multi- Post Sign, F&I, 50 sf or less	2	AS	\$3,250.00	\$6,500
Multi- Post Sign, Remove	2	AS	\$730.05	\$1,460
Retro-Reflective Pavement Markers	675	EA	\$3.50	\$2,363
Painted Pavement Markings, Solid	8	NM	\$1,081.73	\$8,654
Painted Pavement Markings, Skip	8	GM	\$521.79	\$4,174
Contingency Amount	1	LS	\$50,000.00	\$50,000
Subtotal				\$2,573,330
Design (12%)				\$308,800
Total Construction/Design Cost per Mile				\$2,882,130
÷ Lanes Added				2
Total Construction/Design Cost per Lane-Mile				\$1,441,065
x ROW Cost Percentage				28.8%
ROW Cost per Lane-Mile				\$415,027
Total Cost per Lane-Mile				\$1,856,092

Source: FDOT January 2012 generic cost model for four- to six-lane widening project; 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.

Summary of Lane-Mile Costs

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 \$1.8 million, as shown in Table 9. 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 9. Average Cost per Lane-Mile

	County Roads	State Roads	Weighted Average
Average Cost Per Lane-Mile	\$1,817,506	\$1,856,092	n/a
Percent of LRTP New Lane-Miles	46.2%	53.8%	100.0%
Weighted Average Cost per Lane-Mile	\$839,688	\$998,577	\$1,838,265
Cost per Lane-Mile, 2007 Study	\$3,859,529	\$5,283,082	\$4,144,240
Percent Change	-53%	-65%	-56%

Source: County cost per lane-mile from Table 7; State road cost per lane-mile from Table 8; share of new lane-miles from Lake-Sumter MPO, 2025 Long Range Transportation Plan (LRTP), Adopted Cost Affordable Plan, May 23 2007 (see Table 23 in Appendix B); 2007 costs per lane-mile from Tindale-Oliver and Associates, Inc., Lake County Impact Fee Update Study, July 2007, Table 4.

Roadway Capacity

The capacity of Lake County’s roads used in this update is based on the capacities used by the County in its concurrency standards. To calculate the average daily capacity per lane, the total daily VMC is divided by the number of existing lane-miles, as shown in Table 10.

Table 10. Average Daily Capacity per Lane

	County Roads	State Roads	Total
Vehicle-Miles of Capacity	6,747,379	5,809,110	12,556,489
÷ Lane-Miles	1,000.05	685.71	1,685.76
Average Capacity per Lane	6,747	8,472	7,449

Source: Major road inventory in Table 22.

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 11, the relative shares of County road and State road improvements in the Long Range Transportation Plan yield a weighted average cost of \$242 per vehicle-mile of capacity. This is considerably lower than the figure from the 2007 update.

Table 11. Road Cost per Vehicle-Mile

	County Roads	State Roads	Weighted Average
Average Cost per Lane-Mile	\$1,817,506	\$1,856,092	n/a
÷ Average Capacity per Lane	6,747	8,472	n/a
Average Cost Per Vehicle-Mile	\$269	\$219	n/a
Percent of LRTP New Lane-Miles	46.2%	53.8%	100.0%
Weighted Average Cost per Vehicle-Mile	\$124	\$118	\$242
2007 Study Cost per Vehicle-Mile			\$389
Percent Change from 2007 Study			-38%

Source: Average cost per new lane-mile from Table 9; average capacity per new lane from Table 10; County and State road shares of new lane-miles in the LRTP from Table 23 in Appendix B; 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 impact fees. 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 5th and 6th Cent Constitutional Gas Tax, 7th Cent County Gas Tax and the 9th Cent Gas Tax. Annual revenue from the local gas tax 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 12.

Table 12. Federal/State Fuel Tax Capacity Funding, FY 2008-2012

Facility	Improvement	2008	2009	2010	2011	2012
Advance ROW Acquisition	ROW				\$292,785	\$2,566
Citrus Tower Bld at Oakley Seaver	Signalization				\$202,587	
CR 42 (Gray Heron-NFSR 536)	Pave Shoulders		\$693,967			
CR 44 at CR 19A	Add Turn Lanes	\$50,000		\$307,546		
CR 44 at Shelley Drive	Add Turn Lanes	\$75,000	\$144,442			
CR 46A (SF 46-N of Arundel Way)	New Alignment					\$147,367
CR 450 (Marion Co-Wilson Parrish)	Pave Shoulders				\$155,035	
CR 466 (Sumter Co Ln-US 27/441)	Add Lanes/Rehab	\$16,600,000				
CR 565A at Silver Eagle Rd	Signalization				\$370,371	
Hook St (Grand Hwy-Sanhill View)	New Road				\$3,428,920	
Mt Home Rd at David Walker Ln	Signalization		\$30,000	\$260,948		
SR 19 at Bible Camp Rd	Add Turn Lanes				\$226,250	
SR 19 (CR 48-CR 561)	Engineering				\$1,026,043	\$52,292
SR 25 at Corley Island Rd	Add Turn Lanes		\$59,746	\$2,416		
SR 25 (Lake Louisa-Cluster Oak)	Add Lanes/Rehab	\$6,497	\$200,679	\$20,258,420	\$691,325	\$651,265
SR 25 (SR 530-Boggy Marsh Rd.)	Add Lanes/Rehab	\$1,189,065	\$23			
SR 25 (SR 50-CR 561-a)	Add Lanes/Rehab	\$2,460,657	\$110,827			
SR 25 (Boggy Marsh Rd.-Lk. Louisa)	Add Lanes/Rehab	\$1,321,057	\$103,351	\$78,868	\$1,192,117	\$971,609
SR 25 at SR 50	Interchange	\$2,070,215	\$1,703,154	\$10,295,591	\$6,548,792	\$28,157,315
SR 25 (Polk Co-US 92)	Add Lanes/Rehab		\$610,630	\$7,923	\$2,468	\$3,540
SR 25 at Citizens/Eagles Nest	Signalization					
SR 33 at CR 474	Add Turn Lanes				\$50	\$231,561
SR 40 (Marion Co.-Volusia Co. lines)	Engineering	\$9,296	\$7,461	\$19,404	\$7,083	\$14,880
SR 44 at Royal Trails Rd	Add Turn Lanes					\$50,623
SR 44 (SR 500-SR 44)	Add Lanes/Rehab	\$60,904	\$321,827	\$97,987	\$155,865	\$389,959
SR 46 (from CR 437 South)	Signalization	\$194,984	\$2,952	\$154,857		
SR 46 (Vista View-Round Lake)	Add Lanes/Rehab					\$141,163
SR 46 (US 441-Seminole Co. line)	Engineering	\$649,949	\$1,182	\$987,340	\$103,654	\$120,222
SR 46 (US 441-Vista View Ln)	Add Lanes/Rehab		\$9,752			\$164,948
SR 50 (Grand Hwy-Hancock)	Add Lanes/Rehab		\$2,232	\$5,022	\$4,898,637	\$380,532
SR 50 (Tiny Morse Rd.-Lake Blvd.)	Add Lanes/Rehab	\$8,859,656	\$15,311	\$9,853		
SR 50 (Hancock Rd-W. Rem. Rd)	Add Lanes/Rehab	\$569,850	\$20,559,768	\$302,814	\$461,101	\$1,811,723
SR 50 (CR 565-CR 565A)	Engineering			\$90	\$761,359	\$95,011
SR 429 (Orange Co-Old McDonld)	New Road					\$59,505
SR 429 (Old McD-Wekiva River)	New Road					\$452,589
SR 500 (Lake Ella Rd-Ave. Central)	Add Lanes/Rehab	\$2,862,905	\$2,959,902	\$7,137,245	\$304,982	\$894,396
SR 500 (MLK-Lake Ella Rd)	Add Lanes/Rehab	\$2,376,640	\$1,991,581	\$5,359	\$1,167,289	\$18,502,259
SR 500 (Perkins St-N. of Griffin Rd)	Add Lanes/Rehab	\$401,070	\$6,913	\$8,735,076	\$973,940	\$1,180,044
SR 500 (Perkins St-SR 44)	Add Lanes/Rehab	\$19,293	\$196,901	\$69,423	\$1,571,587	\$10,175,962
SR 500 (SR 44-SR 46)	Engineering				\$575,388	\$30,695
SR 500 at Meadows Ave	Signalization					
SR 500 (College Rd-Lk Shore)	Add Lanes/Rehab					
SR 500 (Lk Eustis Dr-CR 44B)	Add Lanes/Rehab	\$1,512,886	\$3,001			
SR 500 (Mills St-W. of College Rd)	Add Lanes/Rehab	\$1,475,092	\$23	\$187,444		
Wekiva Parkway (E Segment)	Engineering					\$980,335
Wekiva Parkway (W Segment)	Engineering				\$626	\$2,489,521
Total Capacity Funding		\$39,777,038	\$29,732,601	\$48,736,182	\$24,824,843	\$64,679,460

Source: Capacity-expanding improvement programmed costs from Florida Department of Transportation (FDOT), *Work Program – Adopted Work Program Six Year History, FY 2007 – 2012* (<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 72.0% 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 13.

Table 13. 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 2007/2008	152,553,118	\$0.384	\$58,580,397	\$39,777,038	67.9%
FY 2008/2009	143,112,733	\$0.389	\$55,670,853	\$29,732,601	53.4%
FY 2009/2010	149,844,139	\$0.390	\$58,439,214	\$48,736,182	83.4%
FY 2010/2011	149,149,235	\$0.394	\$58,764,799	\$24,824,843	42.2%
FY 2011/2012	143,319,305	\$0.399	\$57,184,403	\$64,679,460	113.1%
Five-Year Average					72.0%

* Fed/State Tax Gallon excludes \$0.02 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 12.

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 14, it can reasonably be anticipated that \$0.291 of Federal and State fuel taxes will be available in the future for capacity-expanding capital improvements per gallon of motor fuels sold in the county. 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 14. 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)	\$0.149
State Comprehensive Enhanced Transportation (SCETS) Tax	\$0.071
Total Federal/State Motor Fuel Tax per Gallon	\$0.404
x Percent of Motor Fuel Tax Funding for Capacity	72.0%
Total Federal/State Fuel Tax for New Capacity per Gallon	\$0.291

Source: Tax rates per gallon as of January 1, 2013 from the Florida Department of Revenue; percent of motor fuel tax funding for capacity from Table 13.

As shown in Table 15, new development can be expected to generate over the next 25 years the present value equivalent of \$101 in capacity-expanding road funding for every daily vehicle-mile of travel.

Table 15. Motor Fuel Tax Credit per Service Unit

Total Federal/State Fuel Tax for New Capacity per Gallon	\$0.291
÷ Average Miles per Gallon	17.4
Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	\$0.0167
x Days per Year	365
Annual Capacity-Expanding Improvement Funding per Daily Vehicle-Mile	\$6.10
x Net Present Value Factor (3.5% discount rate over 25 years)	16.48
State/Federal Motor Fuel Tax Credit per Daily Vehicle-Mile of Travel (VMT)	\$101

Source: Motor fuel tax funding per gallon from Table 14; average miles per gallon is national average for all motor vehicles for 2010 from US Department of Transportation, *Highway Statistics*; present value factor based on 25 years at 3.5% discount rate based on average interest rate on state and local bonds for November 2012 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 \$8.2 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 16, 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 16. Infrastructure Sales Tax Credit

CR 19A at Dillard Rd (Add Turn Lane)	\$203,000
CR 437 (Orange Co-SR 44 PD&E Study)	\$300,000
CR 450 at SR 10 (Intersection Improvement)	\$124,000
CR 450 (Shoulders, Marion Co-Lake Yale Rd)	\$450,000
CR 455 at CR 50 (Intersection Improvement)	\$250,000
CR 50 at US 27 (Add Turn Lane)	\$933,000
Griffin Ave at Rolling Acres (Add Turn Lane)	\$300,000
Griffin View at Harbor Hills (Intersection Improvement)	\$72,000
Griffin View (US 27-Grays Airport Widening)	\$990,000
Hancock Rd (CR 50-Fosgate New 4-Lane Rd)	\$1,970,000
Leke Ella Rd at Rolling Acres (Intersection Improvement)	\$340,000
Old Mt Dora Rd (Grove St-Eudora Widening)	\$300,000
Oswalt Rd (Connect to Royal Vista Rd)	\$1,170,000
Oswalt Rd (Lakeshore-Reagan's Run, Widen/Turn Lanes)	\$763,000
Total Renewal Sales Tax Funding, FY 2010-FY 2014	\$8,165,000
÷ Years in Plan	5
Annual Renewal Sales Tax Funding for Capacity	\$1,633,000
÷ Existing County-Wide Locally-Generated VMT	4,945,351
Annual Renewal Sales Tax Funding per VMT	\$0.33
x Net Present Value Factor (3.5% discount rate over 25 years)	16.48
Infrastructure Sales Tax Credit per VMT	\$5

Source: Planned infrastructure spending from Lake County Capital Improvement Plan FY 2011/2012 to FY 2015/2016; existing county-wide locally-generated VMT from Table 3; present value factor based on 25 years at 3.5% discount rate from Table 15.

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 17. Based on this calculation, new development could be expected to generate the current equivalent of \$106 in capacity-expanding road funding over the next 25 years for every daily vehicle-mile of travel.

Table 17. Transportation Revenue Credit Summary

State/Federal Motor Fuel Tax Credit per VMT	\$101
Infrastructure Sales Funding Credit per VMT	\$5
Total Credit per VMT	\$106

Source: State/Federal motor fuel tax credit from Table 15; infrastructure sales tax credit from Table 16.

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 used in the impact fee schedules. 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 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).

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, 6th 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 7th 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 7th 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 8th 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 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 15.7% (see Table 3) 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 18.

Table 18. 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	7.08	7.58	100%	22.59	24.18
1,500 to 2,499 sf	210	Dwelling	8.50	7.08	7.58	100%	30.09	32.22
2,500 sf or greater	210	Dwelling	10.03	7.08	7.58	100%	35.51	38.01
Multi-Family	220	Dwelling	6.33	4.51	5.01	100%	14.27	15.86
Mobile Home Park	240	Space	4.67	3.88	4.38	100%	9.06	10.23
Active Adult Community	250	Dwelling	3.81	5.82	6.32	100%	11.09	12.04
Lodging	310/320	Room	6.90	5.94	6.44	72%	14.75	16.00
Retail/Commercial	820	1,000 sf	42.94	2.82	3.32	62%	37.54	44.19
Office	710	1,000 sf	11.01	5.83	6.33	92%	29.53	32.06
Industrial/Manufacturing	140	1,000 sf	3.82	9.39	9.89	92%	16.50	17.38
Warehousing	150	1,000 sf	3.56	9.39	9.89	92%	15.38	16.20
Mini-Warehouse	151	1,000 sf	2.50	3.68	4.18	92%	4.23	4.81
Public/Institutional	620	1,000 sf	7.58	2.92	3.42	89%	9.85	11.54

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*, 8th ed., 2008, and major road trip length has been multiplied by the calibration factor from Table 3; 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 19. 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 24, Appendix C.

Table 19. 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	22.59	-18%
1,500 to 2,499 sf	210	Dwelling	36.55	36.67	30.09	-18%
2,500 sf or greater	210	Dwelling	43.13	36.67	35.51	-18%
Multi-Family	220	Dwelling	23.69	16.93	14.27	-40%
Mobile Home Park	240	Space	14.57	10.74	9.06	-38%
Active Adult Community	250	Dwelling	19.16	13.14	11.09	-42%
Lodging	310/320	Room	24.12	22.95	14.75	-39%
Retail/Commercial	820	1,000 sf	54.83	65.23	37.54	-32%
Office	710	1,000 sf	35.49	32.98	29.53	-17%
Industrial/Manufacturing	140	1,000 sf	19.58	19.58	16.50	-16%
Warehousing	150	1,000 sf	25.42	25.42	15.38	-39%
Mini-Warehouse	151	1,000 sf	5.03	5.03	4.23	-16%

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 18; 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 20. The 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 20. 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	22.59	24.18	\$242	\$106	\$5,467	\$2,563	\$2,904
1,500 to 2,499 sf	Dwelling	30.09	32.22	\$242	\$106	\$7,282	\$3,415	\$3,867
2,500 sf or greater	Dwelling	35.51	38.01	\$242	\$106	\$8,593	\$4,029	\$4,564
Multi-Family	Dwelling	14.27	15.86	\$242	\$106	\$3,453	\$1,681	\$1,772
Mobile Home Park	Space	9.06	10.23	\$242	\$106	\$2,193	\$1,084	\$1,109
Active Adult Community	Dwelling	11.09	12.04	\$242	\$106	\$2,684	\$1,276	\$1,408
Lodging	Room	14.75	16.00	\$242	\$106	\$3,570	\$1,696	\$1,874
Retail/Commercial	1,000 sf	37.54	44.19	\$242	\$106	\$9,085	\$4,684	\$4,401
Office	1,000 sf	29.53	32.06	\$242	\$106	\$7,146	\$3,398	\$3,748
Industrial/Manufacturing	1,000 sf	16.50	17.38	\$242	\$106	\$3,993	\$1,842	\$2,151
Warehousing	1,000 sf	15.38	16.20	\$242	\$106	\$3,722	\$1,717	\$2,005
Mini-Warehouse	1,000 sf	4.23	4.81	\$242	\$106	\$1,024	\$510	\$514
Public/Institutional	1,000 sf	9.85	11.54	\$242	\$106	\$2,384	\$1,223	\$1,161

Source: VMT per unit from Table 18; cost per VMT from Table 11; credit per VMT from Table 17; 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.

Transportation

The updated transportation impact fees are compared with the adopted fees, as well as the fees calculated in previous studies, in Table 21. Note that the 2010 and 2013 fees are the same for many land uses in the same general category, due to the proposed simplification of the fee schedules. The percentage change is from the 2001 study, rather than from the suspended fees, which were adopted at less than two-thirds of the amounts calculated in that 2001 study.

Table 21. Detailed Transportation Impact Fee Comparison

Land Use Type	Unit	Adopted				Study 2013	Change From 2001
		Study 2001	2002 (63.4%)	Study 2007	Study 2010		
Single-Family							
Less than 1,500 sf/Low Inc.	Dwelling	\$2,590	\$1,642	\$4,595	\$3,457	\$2,904	12%
Less than 1,500 sf	Dwelling	\$2,590	\$1,642	\$6,689	\$3,457	\$2,904	12%
1,500 to 2,499 sf	Dwelling	\$3,453	\$2,189	\$11,352	\$4,606	\$3,867	12%
2,500 sf or greater	Dwelling	\$4,074	\$2,583	\$11,352	\$5,434	\$4,564	12%
Multi-Family (1 or 2 stories)	Dwelling	\$2,221	\$1,408	\$5,208	\$2,126	\$1,772	-20%
Multi-Family (3+ stories)	Dwelling	\$1,416	\$898	\$5,208	\$2,126	\$1,772	25%
Mobile Home Park	Space	\$1,355	\$859	\$3,287	\$1,331	\$1,109	-18%
Campground/RV Site	Site	\$845	\$536	\$2,691	\$1,331	\$1,109	31%
Active Adult Community	Dwelling	\$1,819	\$1,153	\$4,057	\$1,678	\$1,408	-23%
Assisted Care Living Facility	Dwelling	\$487	\$309	\$1,182	\$2,126	\$1,772	264%
Hotel	Room	\$2,281	\$1,446	\$7,145	\$2,238	\$1,874	-18%
Motel	Room	\$1,174	\$744	\$3,798	\$2,238	\$1,874	60%
Retail/Commercial							
50,000 sf or less	1,000 sf	\$4,442	\$2,816	\$19,055	\$5,349	\$4,401	-1%
50,001 - 200,000 sf	1,000 sf	\$3,434	\$2,177	\$19,815	\$5,349	\$4,401	28%
200,001 - 600,000 sf	1,000 sf	\$3,424	\$2,171	\$17,166	\$5,349	\$4,401	29%
Over 600,000 sf	1,000 sf	\$3,762	\$2,385	\$16,326	\$5,349	\$4,401	17%
Movie Theater w/Matinee	Screen	\$18,221	\$11,552	\$41,139	n/a	n/a	n/a
Building Materials and Lumber	1,000 sf	\$9,353	\$5,930	\$43,597	\$5,349	\$4,401	-53%
Discount Sprstore (120k sf+)	1,000 sf	\$4,683	\$2,969	\$16,084	\$5,349	\$4,401	-6%
Discount Sprstore (<120k sf)	1,000 sf	\$5,647	\$3,580	\$18,078	\$5,349	\$4,401	-22%
Specialty Retail	1,000 sf	\$5,604	\$3,553	n/a	\$5,349	\$4,401	-21%
Home Imprvmnt Superstore	1,000 sf	\$6,363	\$4,034	\$12,118	\$5,349	\$4,401	-31%
Hardware/Paint Store	1,000 sf	\$15,677	\$9,939	\$48,461	\$5,349	\$4,401	-72%
Wholesale Nursery	Acre	\$1,353	\$858	\$89,410	n/a	n/a	n/a
New/Used Auto Sales	1,000 sf	\$9,057	\$5,742	\$25,067	\$5,349	\$4,401	-51%
Supermarket	1,000 sf	\$7,811	\$4,952	\$24,387	\$5,349	\$4,401	-44%
Conv. Store w/ Gas Pump	1,000 sf	\$23,397	\$14,834	\$64,236	\$5,349	\$4,401	-81%
Pharmacy/Drug Store	1,000 sf	\$6,175	\$3,915	\$13,231	\$5,349	\$4,401	-29%
Furniture Store	1,000 sf	\$1,110	\$704	\$3,433	\$5,349	\$4,401	296%
Bank	1,000 sf	\$12,937	\$8,202	n/a	\$5,349	\$4,401	-66%
Bank/Savings Drive-In	1,000 sf	\$19,254	\$12,207	\$65,357	\$5,349	\$4,401	-77%
Quality Restaurant	1,000 sf	\$13,771	\$8,731	\$44,005	\$5,349	\$4,401	-68%
High Turnover Restaurant	1,000 sf	\$18,016	\$11,422	\$58,284	\$5,349	\$4,401	-76%
Fast Food w/Drive-Thru	1,000 sf	\$27,927	\$17,706	\$146,641	\$5,349	\$4,401	-84%
Bar/Lounge/Drinking Place	1,000 sf	\$18,016	\$11,422	\$49,720	\$5,349	\$4,401	-76%
Quick Lube	Bay	\$6,126	\$3,884	\$19,338	n/a	n/a	n/a
Auto Repair or Body Shop	1,000 sf	\$6,325	\$4,010	\$18,031	\$5,349	\$4,401	-30%
Gas/Service Station	Fuel Pos.	\$3,281	\$2,080	\$14,707	n/a	n/a	n/a
Self Serve Car Wash	1,000 sf	\$9,421	\$5,973	\$13,861	\$5,349	\$4,401	-53%
Conv. Store w/Gas/Food	1,000 sf	\$51,838	\$32,865	\$165,573	\$5,349	\$4,401	-92%

Table 21 Continued.

Land Use Type	Unit	Adopted					Change From 2001
		Study 2001	2002 (63.4%)	Study 2007	Study 2010	Study 2013	
Stand-Alone Meeting Facility	1,000 sf	\$5,312	\$3,368	\$16,422	\$5,349	\$4,401	-17%
Golf Course	Hole	\$10,401	\$6,594	\$32,340	n/a	n/a	n/a
Marina	Berth	\$1,054	\$668	\$3,258	n/a	n/a	n/a
Racquet Club/Health Spa	1,000 sf	\$5,210	\$3,303	\$13,257	\$5,349	\$4,401	-16%
Amusement & Rec Services	1,000 sf	\$40,820	\$25,880	n/a	\$5,349	\$4,401	-89%
Bowling Alley	1,000 sf	\$9,915	\$6,286	\$31,508	\$5,349	\$4,401	-56%
Dance Studio	1,000 sf	\$5,210	\$3,303	\$31,129	\$5,349	\$4,401	-16%
Horse Training	Acre	\$1,521	\$964	n/a	n/a	n/a	n/a
Office							
10,000 sf or less	1,000 sf	\$7,022	\$4,452	\$15,370	\$4,475	\$3,748	-47%
10,001 - 30,000 sf	1,000 sf	\$5,978	\$3,790	\$15,370	\$4,475	\$3,748	-37%
30,001 - 100,000 sf	1,000 sf	\$4,468	\$2,833	\$13,995	\$4,475	\$3,748	-16%
100,001 - 200,000 sf	1,000 sf	\$3,328	\$2,110	\$11,933	\$4,475	\$3,748	13%
200,001 - 400,000 sf	1,000 sf	\$3,328	\$2,110	\$10,173	\$4,475	\$3,748	13%
Over 400,000 sf	1,000 sf	\$2,716	\$1,722	\$8,669	\$4,475	\$3,748	38%
Single-Tenant Office	1,000 sf	\$3,588	\$2,275	\$15,143	\$4,475	\$3,748	4%
Research Center	1,000 sf	\$2,379	\$1,508	\$7,387	\$4,475	\$3,748	58%
Medical Office/Clinic	1,000 sf	\$10,595	\$6,717	\$39,139	\$4,475	\$3,748	-65%
Veterinarian Clinic	1,000 sf	\$2,820	\$1,788	\$9,188	\$4,475	\$3,748	33%
Business Park	1,000 sf	\$3,743	\$2,373	\$12,785	\$4,475	\$3,748	0%
General Rec./County Park	Acre	\$612	\$388	\$1,906	n/a	n/a	n/a
Multi-Purpose Rec Facility	Acre	n/a	n/a	\$81,790	n/a	n/a	n/a
Cemetery	Acre	\$1,692	\$1,073	n/a	n/a	n/a	n/a
Community Rec Center	1,000 sf	\$6,144	\$3,895	\$19,150	\$1,404	\$1,161	-81%
Elementary School	Student	\$284	\$180	\$1,109	n/a	n/a	n/a
Middle School	Student	\$453	\$287	\$1,574	n/a	n/a	n/a
High School	Student	\$560	\$355	\$1,667	n/a	n/a	n/a
Junior/Community College	Student	\$563	\$357	\$2,386	n/a	n/a	n/a
University/College	Student	\$871	\$552	\$1,797	n/a	n/a	n/a
Church	1,000 sf	\$2,085	\$1,322	\$6,535	\$1,404	\$1,161	-44%
Day Care Center	1,000 sf	\$7,109	\$4,507	\$22,001	\$1,404	\$1,161	-84%
Library	1,000 sf	\$6,727	\$4,265	\$22,079	\$1,404	\$1,161	-83%
Hospital	1,000 sf	\$3,855	\$2,444	\$12,592	\$1,404	\$1,161	-70%
Nursing Home	Bed	\$382	\$242	\$1,161	n/a	n/a	n/a
Airport Hanger	1,000 sf	\$2,421	\$1,535	\$7,900	\$1,404	\$1,161	-52%
Gov't Complex-Municipal	1,000 sf	\$6,789	\$4,304	\$23,048	\$1,404	\$1,161	-83%
Gov't Complex-County	1,000 sf	\$13,740	\$8,711	\$52,112	\$1,404	\$1,161	-92%
Fire Station	1,000 sf	\$3,934	\$2,494	\$18,480	\$1,404	\$1,161	-70%
General Light Industrial	1,000 sf	\$3,402	\$2,157	\$11,093	\$2,553	\$2,151	-37%
General Heavy Industrial	1,000 sf	\$732	\$464	\$2,387	\$2,553	\$2,151	194%
Industrial Park	1,000 sf	\$3,287	\$2,084	n/a	\$2,553	\$2,151	-35%
Manufacturing	1,000 sf	\$1,864	\$1,182	\$6,083	\$2,553	\$2,151	15%
Utilities Building	1,000 sf	\$2,656	\$1,684	\$12,738	\$2,553	\$2,151	-19%
Warehouse	1,000 sf	\$2,421	\$1,535	\$7,900	\$2,379	\$2,005	-17%
High-Cube Warehouse	1,000 sf	\$844	\$535	\$2,730	\$2,379	\$2,005	138%
Mini-Warehouse	1,000 sf	\$457	\$290	\$1,534	\$620	\$514	12%

Source: 2001 study fees from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, December 2001; adopted and suspended fees from Lake County web site; 2007 study fees from Tindale-Oliver & Associates, *Lake County Transportation Impact Fee Update Study*, July 2007; 2010 fees from Duncan Associates, *Lake County, Florida Impact Fee Update for Transportation, Parks, Libraries and Fire Rescue*, June 2010; 2013 study fees from Table 20.

APPENDIX A: MAJOR STREET INVENTORY

Table 22. 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	3,846	5,269	20,002
Anderson Hill Rd.	Lake Shore Dr. to US 27	2	0.67	10,000	1,705	1,142	6,700
Ardice Ave.	Kurt St. to SR 19	2	0.38	14,600	4,798	1,823	5,548
Arlington Ave.	W Lady Lake Blvd. to South Termini	2	0.63	10,000	1,149	724	6,300
Austin Merritt Rd.	Sumter County Line to CR 33	2	4.06	7,900	1,038	4,214	32,074
Bates Ave.	N Center St. to CR 44 / Deland Rd.	2	1.74	14,600	1,314	2,286	25,404
Bates Ave.	CR 44 / Deland Rd. to Estes Rd.	2	0.88	14,600	1,223	1,076	12,848
Bay Rd.	Bay Rd. / CR 19A to Old US 441/ CR 500A	2	0.82	10,000	2,905	2,382	8,200
Bay Rd.	Old US 441/ CR 500A to CR 452	2	0.55	10,000	1,682	925	5,500
Blackstill Lake Rd.	Fosgate Rd. to CR 50	2	1.64	14,600	2,887	4,735	23,944
Bridges Rd.	CR 33 to US 27	2	2.64	7,900	786	2,075	20,856
Britt Rd.	SR 44 to Horse Ranch Rd.	2	1.16	14,600	1,681	1,950	16,936
Britt Rd.	Horse Ranch Rd. to Wolf Branch Rd.	2	1.47	14,600	1,681	2,471	21,462
CR 19A	CR 452 to CR 44	2	0.48	14,600	2,786	1,337	7,008
CR 19A	CR 44 to SR 19	2	0.68	14,600	2,786	1,894	9,928
CR 19A	Bay Rd. / CR 19A to CR 44C/ CR 500A	2	0.93	16,400	7,470	6,947	15,252
CR 19A (Bay Rd.)	US 441 to Bay Rd.	2	0.53	16,400	13,193	6,992	8,692
CR 19A (Dora Ave.)	Lake Dora Dr. to CR 500A/ Old 441	2	0.14	14,600	1,095	153	2,044
CR 19A (Dora Ave.)	C.R. 500A/ Old 441 to David Walker Rd.	2	1.35	14,600	4,963	6,700	19,710
CR 19A (Dora Ave.)	David Walker Rd. to US 441	2	1.00	14,600	3,569	3,569	14,600
CR 25 (Teague Trail)	Griffin Ave. to US 27 / US 441	2	1.27	14,600	7,094	9,009	18,542
CR 25 / Alt 27	Marion County Line to Griffin Ave.	2	1.53	14,600	8,123	12,428	22,338
CR 25A (Fruit Park)	US 27 (North) to CR 446A	2	0.43	14,600	7,586	3,262	6,278
CR 25A (Fruit Park)	CR 446A to US 27 (South)	2	1.50	14,600	5,850	8,775	21,900
CR 25A (Leesburg)	US 27 (North) to US 27 (South)	2	1.65	14,600	332	548	24,090
CR 33	US 27 to CR 48 (North)	2	1.49	14,600	7,651	11,400	21,754
CR 33	CR 48 (North) to CR 48 / Leesburg Hwy.	2	0.52	21,300	7,801	4,057	11,076
CR 33	CR 48 / Leesburg Hwy. to Bridges Rd.	2	4.27	15,300	3,355	14,326	65,331
CR 33	Bridges Rd. to Pebble Rock Rd.	2	5.61	21,100	4,470	25,077	118,371
CR 33	Pebble Rock Rd. to SR 50	2	1.65	21,300	4,470	7,376	35,145
CR 42	Marion County Line to SR 19	2	0.64	11,000	3,180	2,035	7,040
CR 42	SR 19 to CR 450	2	1.41	15,300	2,305	3,250	21,573
CR 42	CR 450 to CR 439	2	2.05	7,900	3,714	7,614	16,195
CR 42	CR 439 to Central Ave.	2	3.58	7,900	2,510	8,986	28,282
CR 42	Central Ave. to Palmetto St.	2	4.93	7,900	2,510	12,374	38,947
CR 42	Palmetto St. to Lake Mack Dr.	2	3.60	7,900	2,510	9,036	28,440
CR 42	Lake Mack Dr. to SR 44	2	3.06	7,900	3,708	11,346	24,174
CR 435	SR 46 to Dubsdread Dr.	2	0.86	16,400	6,724	5,783	14,104
CR 435	Dubsdread Dr. to Orange County Line	2	0.81	16,400	5,049	4,090	13,284
CR 437	CR 44A to SR 44	2	1.74	11,000	4,692	8,164	19,140
CR 437	SR 44 to Wolf Branch Rd.	2	2.52	11,000	5,991	15,097	27,720
CR 437	Wolf Branch Rd. to SR 46	2	0.49	13,600	9,082	4,450	6,664
CR 437	SR 46 to Orange County Line	2	1.50	13,600	6,709	10,064	20,400
CR 439	CR 42 to CR 44A	2	6.25	11,000	2,375	14,844	68,750
CR 439	CR 44A to SR 44	2	1.53	11,000	3,212	4,914	16,830
CR 44	US 441 to Silver Lake Rd.	2	1.46	14,600	8,877	12,960	21,316
CR 44	Silver Lake Rd. to CR 473	2	2.79	13,600	9,299	25,944	37,944

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 44	CR 473 to Apiary Rd.	2	3.17	20,700	14,635	46,393	65,619
CR 44	Apiary Rd. to CR 452	2	2.75	20,700	11,181	30,748	56,925
CR 44	CR 452 to SR 19	2	0.68	14,600	10,725	7,293	9,928
CR 44	SR 19 to Hicks Ditch Rd.	2	1.01	14,600	9,407	9,501	14,746
CR 44	Hicks Ditch Rd. to CR 44A	2	1.21	21,000	9,515	11,513	25,410
CR 44 (Deland Rd.)	CR 44A to SR 44	2	1.12	14,600	7,917	8,867	16,352
CR 44 Leg A	CR 44 to US 441	2	0.42	10,000	1,544	648	4,200
CR 445	SR 19 to NF 552	2	6.13	11,000	639	3,917	67,430
CR 445	NF 552 to CR 445A	2	4.74	11,000	639	3,029	52,140
CR 445A	SR 19 to CR 445	2	3.55	11,000	1,040	3,692	39,050
CR 445A	CR 445 to SR 40	2	0.55	11,000	1,447	796	6,050
CR 448	SR 19 to CR 561	2	1.08	14,600	2,810	3,035	15,768
CR 448	CR 561 to Lake Industrial Blvd.	2	0.65	21,300	6,642	4,317	13,845
CR 448	Lake Industrial Blvd. to Orange Co. Line	2	4.69	21,100	4,902	22,990	98,959
CR 448A	CR 448 to CR 48	2	1.42	11,000	3,795	5,389	15,620
CR 448A	CR 48 to South Termini	2	1.38	11,000	204	282	15,180
CR 449 (Silver Lake)	CR 44 to Morningside Dr.	2	1.80	14,600	2,532	4,558	26,280
CR 449 (Silver Lake)	Morningside Dr. to US 441	2	1.25	14,600	2,532	3,165	18,250
CR 44A	Skyline Dr. to CR 450A/ CR44A	2	2.04	13,600	1,433	2,923	27,744
CR 44A	Deland Rd. to Estes Rd.	2	0.88	21,100	4,537	3,993	18,568
CR 44A	Estes Rd. to CR 439	2	2.29	13,600	3,832	8,775	31,144
CR 44A	CR 439 to CR 437	2	3.18	15,300	4,513	14,351	48,654
CR 44A	CR 437 to SR 44	2	4.03	15,300	1,256	5,062	61,659
CR 44A (Estes Rd.)	CR 450A to Deland Rd.	3	2.83	13,600	1,433	4,055	38,488
CR 44A (Griffin Rd.)	Thomas Rd. to US 27	2	1.01	14,600	7,559	7,635	14,746
CR 44A (Lakeside)	SR 19 to Skyline Dr.	2	1.34	14,600	1,169	1,566	19,564
CR 44C (Eudora Rd.)	US 441 to CR 500A	2	0.91	14,600	9,411	8,564	13,286
CR 44C (Griffin Rd.)	CR 468 to Thomas Rd.	2	0.75	14,600	5,047	3,785	10,950
CR 450	Marion County Line to Babb Rd.	2	4.55	10,000	2,310	10,511	45,500
CR 450	Babb Rd. to SR 19	2	0.96	14,600	1,390	1,334	14,016
CR 450	SR 19 to E Umatilla Blvd./ W 7th St.	2	2.06	14,600	4,753	9,791	30,076
CR 450	E Umatilla Blvd./ W 7th St. to CR 42	2	1.36	13,600	4,753	6,464	18,496
CR 450A	SR 19 to CR 44A North	2	2.72	13,600	1,162	3,161	36,992
CR 452	Marion County Line to Felkins Rd.	2	3.93	21,200	5,767	22,664	83,316
CR 452	Felkins Rd. to Sandy Lane	2	1.72	21,400	5,767	9,919	36,808
CR 452	Sandy Lane to Lake Landing Blvd.	2	2.55	21,200	9,128	23,276	54,060
CR 452	Lake Landing Blvd. to CR 44	2	1.06	21,400	9,128	9,676	22,684
CR 452 (E Main St.)	St Clair Abrams Ave. to Dora Ave.	2	0.40	14,600	2,068	827	5,840
CR 452 (Eustis)	CR 44 / CR 452 to SR 19	2	0.99	14,600	9,974	9,874	14,454
CR 452 (L. Dora Dr.)	Dora Ave. to Lake Ave.	2	1.58	14,600	1,407	2,223	23,068
CR 452 (Lakeshore)	Lake Ave. to Bay Rd.	2	0.53	14,600	1,629	863	7,738
CR 452 (Lakeshore)	Bay Rd. to Old US 441 / CR 500A	2	2.19	14,600	1,629	3,568	31,974
CR 452 (Lakeshore)	Old US 441 / CR 500A to 11th Ave.	2	0.15	14,600	593	89	2,190
CR 452	US 441 to CR 500A	2	0.84	14,600	3,603	3,027	12,264
CR 452	CR 500A to CR 452 / East Main St.	2	0.13	14,600	3,603	468	1,898
CR 455	SR 19 to CR 561	2	2.73	11,000	2,187	5,971	30,030
CR 455	CR 561 to CR 561A	2	4.49	11,000	1,220	5,478	49,390
CR 455	CR 561 A to Ridgewood Ave.	2	3.46	13,900	2,293	7,934	48,094
CR 455	Ridgewood Ave. to CR 455/ CR 50	2	2.61	13,600	5,063	13,214	35,496

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 455	CR 455 / CR 50 to SR 50	2	0.95	14,600	6,271	5,957	13,870
CR 46 (Sanford Rd.)	Highland St. to US 441	2	0.68	16,400	5,507	3,745	11,152
CR 460	Thomas Rd. to US 27	2	0.44	14,600	6,010	2,644	6,424
CR 466	Sumter Co. Line Rd. to Rolling Acres Rd.	4	1.02	34,700	21,835	22,272	35,394
CR 466	Rolling Acres Rd. to US 27	4	0.88	35,700	12,694	11,171	31,416
CR 466	US 27/ US 441 to Grays Airport Rd.	2	2.45	14,600	3,085	7,558	35,770
CR 466	Grays Airport Rd. to Marion County Rd.	2	1.67	13,600	3,085	5,152	22,712
CR 466A	Sumter Co. Line to CR 468 / Rose Ave.	2	2.43	13,600	11,669	28,356	33,048
CR 466A	CR 468 / Rose Ave. to US 27	2	0.64	14,600	4,889	3,129	9,344
CR 466A (Picciola)	US 27 to CR 466B	2	1.94	14,600	6,597	12,798	28,324
CR 466A (Picciola)	CR 466B to County Rd. Termini	2	1.35	14,600	6,597	8,906	19,710
CR 466B (L. Unity)	Eagles Nest Rd. to CR 466A	2	1.75	14,600	3,282	5,744	25,550
CR 468	CR 466A to Pine Ridge Dairy Rd.	2	0.55	14,600	3,490	1,920	8,030
CR 468	Pine Ridge Dairy Rd. to Griffin Rd.	2	1.80	14,600	6,259	11,266	26,280
CR 468	Griffin Rd. to SR 44	2	1.13	14,600	7,446	8,414	16,498
CR 46A	SR 44 to SR 46	2	5.59	14,400	6,826	38,157	80,496
CR 470	Sumter County Line to Bay Ave.	2	3.33	21,100	5,094	16,963	70,263
CR 470	Bay Ave. to CR 33	2	0.54	14,600	5,094	2,751	7,884
CR 473	CR 44 to Fountain Lake Blvd.	2	2.99	10,000	6,380	19,076	29,900
CR 473	Fountain Lake Blvd. to US 441	4	1.03	31,100	12,939	13,327	32,033
CR 474	SR 33 to Green Swamp Rd.	2	5.21	7,900	2,404	12,525	41,159
CR 474	Green Swamp Rd. to US 27	2	3.35	7,900	2,359	7,903	26,465
CR 478	SR 19 to Jalarmy Rd.	2	5.99	13,600	996	5,966	81,464
CR 48	Sumter County Line to CR 33	2	5.58	21,100	2,204	12,298	117,738
CR 48	CR 33 to US 27	2	1.14	14,600	6,086	6,938	16,644
CR 48	US 27 to Lime Ave.	2	4.89	14,600	7,947	38,861	71,394
CR 48	Lime Ave. to SR 19	2	2.04	21,100	6,520	13,301	43,044
CR 48	CR 561 to Ranch Rd.	2	1.14	14,600	4,582	5,223	16,644
CR 48	Ranch Rd. to CR 448A	2	3.17	21,100	4,582	14,525	66,887
CR 50	US 27 to Hancock Rd.	2	1.21	14,600	9,118	11,033	17,666
CR 50	Hancock Rd. to CR 455	2	2.83	25,100	5,656	16,006	71,033
CR 50	CR 455 to Orange County Line	2	1.92	14,600	5,134	9,857	28,032
CR 50 (Sunset Ave.)	CR 33 to SR 50	2	0.71	10,000	1,403	996	7,100
CR 500A (Highland.)	5th Ave. to SR 46	2	0.26	16,400	4,210	1,095	4,264
CR 500A/ 5th Ave.	Old 441 to N Highland St.	2	0.63	16,400	3,170	1,997	10,332
CR 500A/Old 441	US 441 to SR 19	4	0.23	31,100	7,928	1,823	7,153
CR 500A/ Old 441	SR 19 to Dora Ave.	2	1.08	14,600	9,386	10,137	15,768
CR 500A/ Old 441	Dora Ave. to Bay Rd.	2	1.94	14,600	9,731	18,878	28,324
CR 500A/ Old 441	Bay Rd. to CR 44C / Eudora Ave.	2	0.79	14,600	8,551	6,755	11,534
CR 500A/ Old 441	CR 44C / Eudora Dr. to Lakeshore Dr.	2	1.06	16,400	12,118	12,845	17,384
CR 500A/ Old 441	Lakeshore Dr. to 5th Ave.	2	0.79	16,400	9,364	7,398	12,956
CR 500A/ Old 441	CR 46 to Orange Coutry Line	2	0.75	16,400	4,210	3,158	12,300
CR 561	SR 19 to CR 448	2	1.62	14,600	11,746	19,029	23,652
CR 561	CR 448 to CR 48	2	3.93	14,600	6,694	26,307	57,378
CR 561	CR 48 to South Astatula City Limit	2	0.63	14,600	7,351	4,631	9,198
CR 561	S. Astatula City Limit to CR 455	2	2.49	13,600	7,351	18,304	33,864
CR 561	CR 455 to Howey Cross Rd.	2	1.74	11,000	4,909	8,542	19,140
CR 561	Howey Cross Rd. to Turnpike Rd.	2	1.77	13,600	5,698	10,085	24,072
CR 561	US 27 to East Ave.	2	1.78	14,600	1,831	3,259	25,988

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
CR 561	East Ave. to W Minneola Ave.	2	1.05	14,600	1,831	1,923	15,330
CR 561	C.R. 561A to SR 50	2	0.23	14,600	3,358	772	3,358
CR 561	SR 50 to Log House Rd.	2	4.31	14,600	5,797	24,985	62,926
CR 561	Log House Rd. to Florida Boys Ranch Rd.	2	1.56	14,600	2,250	3,510	22,776
CR 561	Florida Boys Ranch Rd. to SR 33	2	5.87	13,600	1,171	6,874	79,832
CR 561 (Minneola)	8th St. to CR 561A	2	0.42	10,000	3,358	1,410	4,200
CR 561 / CR 561A	Turnpike Rd. / CR 561A to US 27	2	0.46	13,600	7,132	3,281	6,256
CR 561A	Turnpike Rd. / CR 561 to CR 455	2	3.22	13,600	1,099	3,539	43,792
CR 561A	CR 561 to CR 565A	2	1.69	14,600	2,746	4,641	24,674
CR 561A	CR 565A to Jalarmy Rd.	2	1.67	14,600	3,958	6,610	24,382
CR 561A	Jalamry Rd. to US 27	2	1.11	14,600	7,021	7,793	16,206
CR 565	US 27 to Kjellstrom Lane	2	7.01	13,600	843	5,909	95,336
CR 565	SR 50 to Sloans Ridge	2	1.96	14,600	598	1,172	28,616
CR 565	Sloans Ridge to Lake Erie Rd.	2	5.44	11,000	598	3,253	59,840
CR 565 (Villa City)	Kjellstrom Lane to SR 50	2	0.63	14,600	2,131	1,343	9,198
CR 565A	SR 50 to CR 561A	2	2.78	14,600	5,187	14,420	40,588
CR 565A	SR 50 to CR 565B	2	4.60	14,600	1,891	8,699	67,160
CR 565B	SR 33 to CR 561	2	3.66	10,000	2,015	7,375	36,600
Canal St.	US 441 to Main St.	2	0.30	10,000	3,942	1,183	3,000
Canal St.	Main St. to SR 44	2	0.31	10,000	3,357	1,041	3,100
Citrus Tower Blvd.	US 27 to Oakley Seaver Dr.	2	1.80	14,600	10,237	18,427	26,280
Citrus Tower Blvd.	Oakley Seaver Dr. to SR 50	4	0.47	31,100	13,398	6,297	14,617
Citrus Tower Blvd.	SR 50 to Johns Lake Rd.	4	1.43	21,100	11,985	17,139	30,173
David Walker Dr.	Old US 441 / CR 500A to CR 19A	2	0.95	14,600	6,642	6,310	13,870
David Walker Dr.	CR 19A to US 441	2	0.44	14,600	6,642	2,922	6,424
David Walker Dr.	US 441 to Mount Homer Rd.	2	0.53	14,600	5,284	2,801	7,738
David Walker Dr.	Mount Homer Rd. to Golflinks Ave.	2	0.74	14,600	5,023	3,717	10,804
Dead River Rd.	West Termini to SR 19	2	2.29	14,600	6,273	14,365	33,434
Donnelly St.	US 441 to 11th Ave.	2	1.25	15,300	9,937	12,421	19,125
Donnelly St.	11th Ave. to 5th Ave.	2	0.38	15,300	9,937	3,776	5,814
Duda Rd.	CR 448A to Orange County Line	2	0.64	11,000	4,974	3,183	7,040
E Lady Lake Blvd.	US 27/US441 to Berchfield Rd.	2	0.96	14,600	685	658	14,016
E Lakeview Ave.	SR 19 to Haselton St.	2	1.00	10,000	4,620	4,620	10,000
E Limit Ave.	Donnelly St. to US 441	2	0.99	15,300	2,201	2,179	15,147
E Main St.	SR 19 to CR 452/ St Clair Abrams St.	2	0.74	14,600	7,887	5,836	10,804
Eagles Nest Rd.	US 27 to CR 466B	2	1.43	14,600	2,912	4,164	20,878
East Ave.	CR 561 to SR 50	2	0.73	10,000	5,043	3,681	7,300
E. Crooked Lake Rd.	Lakeview Dr. to Broadview Ave.	2	0.85	10,000	3,984	3,386	8,500
E. Crooked Lake Rd.	Broadview Ave. to US 441	2	0.78	14,600	3,984	3,108	11,388
Emeralda Ave.	Emeralda Island Rd. to CR 44	2	0.77	10,000	3,191	2,457	7,700
Empire Church Rd.	CR 565 to Anderson Rd.	2	4.26	10,000	833	3,549	42,600
Estes Rd.	CR 44A to Lake Lincoln Ln.	2	0.76	10,000	2,927	2,225	7,600
Estes Rd.	Lake Lincoln Lane to SR 44	2	0.49	10,000	2,927	1,434	4,900
Eudora Rd.	Old Mt Dora Rd. to US 441	2	0.52	14,600	2,730	1,420	7,592
Fish Camp Rd.	CR 452 to CR 44	2	0.63	10,000	1,396	879	6,300
Golflinks Ave.	Kurt St. to SR 19 / Bay St.	2	0.39	14,600	851	332	5,694
Golflinks Ave.	SR 19 / Bay St. to Mary St.	2	0.38	14,600	976	371	5,548
Goose Prairie Rd.	Emeralda Ave. to CR 452	2	1.86	10,000	2,277	4,235	18,600
Grand Hwy.	Citrus Tower Blvd. to SR 50	2	1.23	9,100	5,223	6,424	11,193

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
Grays Airport Rd.	Marion County Rd. to CR 466	2	1.76	13,600	540	950	23,936
Grays Airport Rd.	CR 466 to Griffin View Dr.	2	1.25	14,600	1,919	2,399	18,250
Griffin Ave.	US 27 / US 411 to CR 25	2	0.85	14,600	8,691	7,387	12,410
Griffin Ave.	CR 25 to Uncle Donalds Lane	2	1.19	14,600	2,066	2,459	17,374
Griffin Ave.	Uncle Donalds Lane to Grays Airport Rd.	2	1.66	13,600	2,066	3,430	22,576
Griffin Rd.	US 27 to Lee St.	2	0.51	14,600	2,714	1,384	7,446
Griffin View Dr.	US 27 to Grays Airport Rd.	2	1.85	14,600	4,040	7,474	27,010
Griffin View Dr.	Grays Airport Rd. to Sulen Rd.	2	1.64	10,000	1,506	2,470	16,400
Grove St.	SR 19 (Badger Ave.) to Lakeview Ave.	2	0.36	14,600	1,248	449	5,256
Grove St.	Lakeview Ave. to Golflinks Ave.	2	0.37	14,600	2,733	1,011	5,402
Grove St.	Golfskins Ave. to Old Mt Dora Rd.	2	0.50	14,600	3,246	1,623	7,300
N. Hancock Rd.	CR 50 to N Ridge Blvd.	4	0.43	31,100	10,745	4,620	13,373
N. Hancock Rd.	N Ridge Blvd. to SR 50	4	1.50	31,100	14,193	21,290	46,650
S. Hancock Rd.	SR 50 to Hooks St.	4	1.49	31,100	15,407	22,956	46,339
S. Hancock Rd.	Hooks St. to Johns Lake Rd.	2	1.49	14,600	7,557	11,260	21,754
S. Hancock Rd.	Johns Lake Rd. to Hartwood Marsh Rd.	2	1.74	14,600	7,557	13,149	25,404
Hartwood Marsh Rd.	US 27 to Hancock Rd.	4	2.11	21,100	11,467	24,195	44,521
Hartwood Marsh Rd.	Hancock Rd. to Orange County Line	4	2.51	13,600	9,066	22,756	34,136
Haselton St.	SR 44 to Lakeview Ave.	2	0.75	14,600	1,942	1,457	10,950
Highland St.	Limit Ave. to 5th Ave.	2	1.01	14,600	2,270	2,293	14,746
Hook St.	Lakeshore Dr. to US 27	2	0.35	9,100	6,096	2,134	3,185
Hook St.	US 27 to Hancock Rd.	4	2.15	21,100	6,624	14,242	45,365
Huffstetler Dr.	David Walker Dr. to Kurt St.	2	0.59	14,600	815	481	8,614
Jalarmy Rd.	CR 478 to CR 561A	2	0.35	10,000	2,241	784	3,500
Johns Lake Rd.	US 27 to Hancock Rd.	2	1.57	9,100	5,816	9,131	14,287
Kurt St.	W Lakeview Ave. to David Walker Dr.	2	0.25	14,600	4,567	1,142	3,650
Kurt St.	David Walker Dr. to US 441	2	0.91	14,600	4,005	3,645	13,286
Lake Ave.	Old 441/ CR 500A to Lakeshore Dr.	2	0.56	10,000	1,837	1,025	5,600
Lake Dr.	SR 44 to Country Rd.	2	0.64	11,000	735	470	7,040
Lake Ella Rd.	Sumter County Line to US 27	2	2.95	10,000	2,038	6,012	29,500
Lake Erie Rd.	CR 565 to SR 33	2	5.01	11,000	655	3,282	55,110
Lake Eustis Dr.	US 441 to Clay Blvd.	2	1.59	14,600	5,071	8,063	23,214
Lake Louisa Rd.	Lakeshore Dr. to Vista Del Lago Blvd.	2	2.57	14,600	3,377	8,679	37,522
Lake Louisa Rd.	Vista Del Lago Blvd. to US 27	2	1.13	14,600	4,026	4,549	16,498
Lake Mack Dr.	CR 42 to Another Anna Rd.	2	1.10	11,000	1,646	1,811	12,100
Lake St.	US 441 to Main St.	2	0.20	10,000	2,987	597	2,000
Lake St.	Main St. to SR 44	2	0.31	10,000	4,305	1,335	3,100
Lakeshore Dr. (Cler)	CR 561 to Oswalt Rd.	2	1.55	14,600	1,837	2,847	22,630
Lakeshore Dr. (Cler)	Oswalt Rd. to Harder Rd.	2	1.62	14,600	8,432	13,660	23,652
Lakeshore Dr. (Cler)	Harder Rd. to Anderson Hill Rd.	2	1.42	14,600	13,463	19,117	20,732
Lakeshore Dr. (Eustis)	Clay Blvd. to South Bay St. / SR 19 Sb	2	1.65	14,600	5,037	8,311	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	4,432	3,280	7,400
Lee St.	US 441 to Main St.	2	0.50	10,000	3,185	1,593	5,000
Log House Rd.	CR 561 to Lakeshore Dr.	2	0.87	14,600	2,743	2,386	12,702
Lone Oak Dr.	Main St. to SR 44	2	0.71	10,000	3,596	2,553	7,100
Main St. (Leesburg)	CR 468 to Thomas Ave.	2	0.76	14,600	9,932	7,548	11,096
Main St. (Leesburg)	Thomas Avenue to US 27	2	1.03	14,600	9,932	10,230	15,038
Main St. (Leesburg)	US 27 to Lee St.	2	0.45	14,600	11,185	5,033	6,570

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
Main St. (Leesburg)	Lee St. to Canal St.	2	0.39	14,600	11,185	4,362	5,694
Main St. (Leesburg)	Canal St. to Lake St.	2	0.41	14,600	5,216	2,139	5,986
Main St. (Leesburg)	Lake St. to Dixie Ave. / SR 44	2	0.62	14,600	4,877	3,024	9,052
Main St. (SR 44)	Dixie Ave. / SR 44 to US 441	2	0.32	16,400	3,998	1,279	5,248
Marion County Rd.	CR 25 to Grays Airport Rd.	2	2.52	14,600	2,106	5,307	36,792
Marion County Rd.	Grays Airport Rd. to Lake Griffin Rd.	2	3.01	11,000	2,106	6,339	33,110
Mascotte Empire Rd.	SR 50 to Empire Church Rd.	2	3.23	4,400	562	1,815	14,212
Mclendon St.	Clay Ave. to US 27/US441	2	0.42	10,000	594	249	4,200
Micro Racetrack Rd.	Lake Ella Rd. to CR 466A	2	1.74	11,000	3,787	6,589	19,140
Morningside Dr.	US 441 to CR 500A	2	1.10	15,300	1,293	1,422	16,830
Mt Homer Rd.	CR 19A to US 441	2	0.74	14,600	233	172	10,804
Mt Homer Rd.	US 441 to David Walker Dr.	2	0.68	14,600	1,469	999	9,928
Mt Homer Rd.	David Walker Dr. to Kurt St.	2	0.51	14,600	3,433	1,751	7,446
N. Grassy Lake Rd.	US 27 to Turkey Farm Rd.	2	1.66	10,000	750	1,245	16,600
Old Eustis Rd.	Morningside Dr. to E Crooked Lake Dr.	2	0.34	15,300	1,552	528	5,202
Old Eustis Rd.	E Crooked Lake Dr. to Donnelly St.	2	0.99	15,300	1,586	1,570	15,147
Old Mount Dora Rd.	SR 19 to Eudora Rd.	2	0.65	14,600	4,327	2,813	9,490
Old Mount Dora Rd.	Eudora Rd. to US 441	2	0.89	14,600	4,327	3,851	12,994
Orange Ave.	SR 19 to Haselton St.	4	1.01	35,700	11,043	11,153	36,057
Orange Ave.	Haselton St. to CR 44B	2	0.98	16,400	11,527	11,296	16,072
Oswalt Rd.	Lakeshore Dr. to Edgewater Dr.	2	1.97	14,600	3,676	7,242	28,762
Palmetto Dr.	Sunset Ave. to CR 33	2	0.20	9,100	514	103	1,820
Prescott St.	Bates Ave. to SR 44	2	0.38	14,600	445	169	5,548
Radio Rd.	CR 44 to Morningside Dr.	2	2.29	14,600	3,298	7,552	33,434
Radio Rd.	Morningside Dr. to US 441	2	0.95	14,600	7,711	7,325	13,870
Rolling Acres Rd.	US 27 / US 441 to Oak St.	2	0.78	14,600	15,752	12,287	11,388
Rolling Acres Rd.	Oak St. to CR 466	2	0.50	14,600	15,001	7,501	7,300
Rolling Acres Rd.	CR 466 to Lake Ella Rd.	2	2.00	13,600	3,342	6,684	27,200
Round Lake Rd.	Wolf Branch Rd. to SR 46	2	1.00	13,600	2,306	2,306	13,600
Round Lake Rd.	SR 46 to Orange County Line	2	1.02	13,600	3,513	3,583	13,872
Royal Trails Rd.	Seagrape Ave. to SR 44	2	4.15	11,000	1,344	5,578	45,650
S Grays Airport Rd.	Griffin View Dr. to Eagles Nest Rd.	2	1.75	13,600	1,483	2,595	23,800
S Grays Airport Rd.	Eagles Nest Rd. to US 27 / US 441	2	1.43	14,600	1,308	1,870	20,878
Shay Blvd.	Tarrson Blvd. to Griffin Ave.	2	0.50	10,000	2,375	1,188	5,000
Shirley Shores Rd.	CR 448 to Deer Island Rd.	2	3.14	11,000	2,141	6,723	34,540
Sleepy Hollow Rd.	US 441 to Sunnyside Dr.	2	1.11	14,600	2,769	3,074	16,206
SR 19	Marion County Line to CR 445A	2	3.61	15,300	2,136	7,711	55,233
SR 19	CR 445A to CR 445	2	5.50	15,300	3,368	18,524	84,150
SR 19	CR 445 to CR 42	2	5.21	15,300	5,361	27,931	79,713
SR 19	CR 42 to Baker Rd.	2	0.90	11,700	4,291	3,862	10,530
SR 19	Baker Rd. to CR 450 (Umatilla Blvd.)	2	1.19	16,400	4,291	5,106	19,516
SR 19	CR 450 (Umatilla Blvd.) to CR 450	2	0.51	16,400	14,411	7,350	8,364
SR 19	CR 450 (Ocala St.) to CR 450A	4	1.38	35,700	17,741	24,483	49,266
SR 19	CR 450A to CR 19A	4	2.22	35,700	19,465	43,212	79,254
SR 19	CR 19A to CR 44	4	0.58	35,700	15,955	9,254	20,706
SR 19	CR 44 to CR 452	4	0.75	35,700	17,643	13,232	26,775
SR 19	Stevens Ave to Golf Links Ave.	4	0.50	35,700	30,413	15,207	17,850
SR 19	Golf Links Ave. to US 441	4	0.92	35,700	19,709	18,132	32,844
SR 19	CR 500A/ Lake Shore Blvd. to CR 452	4	0.37	32,700	15,955	5,903	12,099

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
SR 19	CR 452 (Main St.) to CR 561	4	1.38	32,700	30,009	41,412	45,126
SR 19	CR 561 to Lake Harris North End	2	0.90	21,300	13,678	12,310	19,170
SR 19	Lake Harris North End to CR 48	2	4.00	16,900	12,562	50,248	67,600
SR 19	CR 48 to Central Ave.	2	0.84	13,100	7,949	6,677	11,004
SR 19	Central Ave. to CR 455	2	3.09	15,300	3,170	9,795	47,277
SR 19	CR 455 to US 27 / SR 25	2	2.72	15,300	8,120	22,086	41,616
SR 19	US 27 / SR 25 to CR 478	2	4.73	15,300	7,243	34,259	72,369
SR 19	CR 478 to Lake Catherine Rd.	2	1.22	11,700	3,170	3,867	14,274
SR 19	Lake Catherine Rd. to SR 50/ SR 33	2	0.70	15,000	8,883	6,218	10,500
SR 19 (Duncan Dr.)	US 441 to CR 500A/ Lake Shore Blvd.	4	0.24	32,700	13,736	3,297	7,848
SR 19 (N)	Orange Ave. to CR 452	4	0.87	42,840	15,795	13,742	37,271
SR 19 (N)	Stevens Ave to Orange Ave.	4	0.68	42,840	15,955	10,849	29,131
SR 19 (S)	CR 452 to Orange Ave.	4	0.82	42,840	15,955	13,083	35,129
SR 19 (S)	Orange Ave. to Stevens Ave	4	0.62	42,840	13,701	8,495	26,561
SR 33	SR 50/ SR 33 to Anderson Rd.	2	0.52	16,400	7,544	3,923	8,528
SR 33	Anderson Rd. to CR 565B	2	3.16	15,300	6,091	19,248	48,348
SR 33	CR 565B to CR 561	2	6.76	15,300	4,802	32,462	103,428
SR 33	CR 561 to CR 474	2	2.33	15,300	5,644	13,151	35,649
SR 33	CR 474 to Polk County Line	2	1.04	15,300	4,283	4,454	15,912
SR 40	Marion County Line to CR 445A	2	4.71	15,300	5,266	24,803	72,063
SR 40	CR 445A to River Rd.	2	1.61	15,300	6,238	10,043	24,633
SR 40	River Rd. to Volusia County Line	2	1.43	15,300	7,081	10,126	21,879
SR 44	Sumter County Line to CR 468	4	2.38	34,700	18,926	45,044	82,586
SR 44	CR 468 to S Lone Oak Dr.	4	1.54	35,700	13,429	20,681	54,978
SR 44	S Lone Oak Dr. to US 27	4	0.76	35,700	18,319	13,922	27,132
SR 44	US 27 to S 9th St.	4	0.57	35,700	23,662	13,487	20,349
SR 44	S 9th St. to Canal St.	4	0.34	35,700	23,389	7,952	12,138
SR 44	Canal St. to S Lake St.	4	0.41	35,700	23,389	9,589	14,637
SR 44	S Lake St. to E Main St.	4	0.79	35,700	18,529	14,638	28,203
SR 44	E Main St. to US 441	5	0.11	32,700	18,974	2,087	3,597
SR 44 (Old CR 44B)	US 441 to End Of 4 Lane	4	0.45	35,700	18,340	8,253	16,065
SR 44 (Old CR 44B)	End Of 4 Lane to WayCross Ave.	2	0.45	20,700	18,340	8,253	9,315
SR 44 (Old CR 44B)	Waycross Ave. to Orange Ave.	2	1.66	20,700	12,914	21,437	34,362
SR 44	Abrams Rd. to Griffin Lane	2	2.01	16,400	3,170	6,372	32,964
SR 44	Griffin Lane to CR 439	2	1.14	13,100	3,170	3,614	14,934
SR 44	CR 439 to CR 437	2	3.03	15,300	9,669	29,297	46,359
SR 44	CR 437 to CR 46A	2	1.15	15,300	3,170	3,646	17,595
SR 44	CR 46A to CR 44A	2	3.43	15,300	3,170	10,873	52,479
SR 44	CR 44A to Overlook Dr.	2	5.34	15,300	3,170	16,928	81,702
SR 44	Overlook Dr. to CR 42	2	5.64	15,300	7,030	39,649	86,292
SR 44	CR 42 to Volusia County Line	2	0.26	18,700	11,146	2,898	4,862
SR 46	US 441 to Vista View	2	1.08	16,300	10,024	10,826	17,604
SR 46	Vista View to Round Lake Rd.	2	0.94	16,100	10,024	9,423	15,134
SR 46	Round Lake Rd. to CR 437 South	2	2.11	15,900	4,312	9,098	33,549
SR 46	CR 437 South to CR 437 North	2	0.51	21,200	14,213	7,249	10,812
SR 46	CR 437 North to CR 435	2	1.11	21,200	15,615	17,333	23,532
SR 46	CR 435 to CR 46A	2	4.68	13,100	4,312	20,180	61,308
SR 46	CR 46A to Serminole County Line	2	2.61	15,300	16,372	42,731	39,933
SR 50	Sumter Co. Line to CR 565 / Bay Lake Rd.	2	3.64	11,700	12,991	47,287	42,588

Appendix A: Major Street Inventory

Table 22 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	4,312	3,320	16,401
SR 50	CR 33 to Groveland Farms Rd.	4	0.96	35,700	18,090	17,366	34,272
SR 50	Groveland Farms to SR 50 1-Way Pairs	4	0.63	35,700	10,270	6,470	22,491
SR 50 (E)	SR 50 One Way Pairs to SR 19	4	0.44	42,840	10,270	4,519	18,850
SR 50 (E)	SR 19 to SR 33 South	4	0.33	42,840	21,456	7,080	14,137
SR 50 (W)	SR 33 South to SR 19	4	0.34	41,500	13,539	4,603	14,110
SR 50 (W)	SR 19 to SR 50 One Way Pairs	4	0.44	42,840	10,270	4,519	18,850
SR 50	SR 33 South to CR 565A North	4	1.53	41,500	23,755	36,345	63,495
SR 50	CR 565A North to CR 561	4	3.15	41,500	23,721	74,721	130,725
SR 50	CR 561 to East Ave.	4	1.19	36,400	27,128	32,282	43,316
SR 50	East Ave. to US 27	4	0.92	36,400	33,979	31,261	33,488
SR 50	US 27 to Hancock Rd.	4	2.14	36,600	41,390	88,575	78,324
SR 50	Hancock Rd. to CR 455	6	1.49	64,500	53,173	79,228	96,105
SR 50	CR 455 to Orange County Line	6	1.53	64,500	47,074	72,023	98,685
Sunnyside Dr.	SR 44 to Sunset Dr.	2	0.72	14,600	3,204	2,307	10,512
Sunnyside Dr.	Sunset Dr. to Bridgewater Court	2	4.07	14,600	1,330	5,413	59,422
Sunnyside Dr.	Bridgewater Court to Sunnyside Dr.	2	1.16	14,600	1,459	1,692	16,936
Thomas Ave.	CR 460 to CR 44A / Griffin Rd.	2	0.79	14,600	9,295	7,343	11,534
Thomas Ave.	CR 44A / Griffin Rd. to Main St.	2	1.07	14,600	8,107	8,674	15,622
Tuscanooga Rd.	Sumter County Line to Egg Rd.	2	4.19	10,000	397	1,663	41,900
Tuscanooga Rd.	Egg Rd. to SR 50	2	0.54	9,100	2,208	1,192	4,914
Underpass Rd.	CR 33 to American Legion Rd.	2	0.31	4,800	729	226	1,488
Vista Del Lago Blvd.	Lake Louisa Rd. to US 27	2	0.83	10,000	1,428	1,185	8,300
W Lady Lake Blvd.	West Termini to US 27/US441	2	0.45	14,600	1,281	576	6,570
W Lakeview Ave.	Kurt St. to SR 19	2	0.43	10,000	7,391	3,178	4,300
Washington Ave.	Haselton St. to Abrams Rd.	2	0.88	14,600	2,597	2,285	12,848
WayCross Ave.	County Club Rd. to SR 44	2	0.99	14,600	4,712	4,665	14,454
Wells Ave.	SR 19 to E Main St.	2	0.52	14,600	1,475	767	7,592
Wilson Lake Parkway	US 27 to Libby Rd.	2	0.35	10,000	350	123	3,500
Wolf Branch Rd.	US 441 to Britt Rd.	2	1.16	14,600	9,110	10,568	16,936
Wolf Branch Rd.	Britt Rd. to CR 437	2	3.52	10,000	4,072	14,333	35,200
Woodlea Rd.	Lane Park Rd. to SR 19	2	1.71	14,600	2,525	4,318	24,966
US 192	US 27 to Orange County Line	6	1.01	49,300	42,543	42,968	49,793
US 27/SR 25	US 27/US441 Split to Main St.	4	1.04	32,700	28,053	29,175	34,008
US 27/SR 25	Main St. to SR 44	4	0.57	32,700	24,801	14,137	18,639
US 27/SR 25	SR 44 to CR 33	4	2.78	32,700	35,740	99,357	90,906
US 27/SR 25	CR 33 to CR 48	4	1.16	35,700	10,270	11,913	41,412
US 27/SR 25	CR 48 to Plantation Blvd.	4	2.54	35,700	22,591	57,381	90,678
US 27/SR 25	Plantation Blvd. to Florida Turnpike	4	2.67	32,800	20,836	55,632	87,576
US 27/SR 25	Florida Turnpike to SR 19	4	4.08	41,800	24,211	98,781	170,544
US 27/SR 25	SR 19 to CR 561	4	3.36	32,800	18,671	62,735	110,208
US 27/SR 25	CR 561 to CR 561A	4	2.14	34,700	28,245	60,444	74,258
US 27/SR 25	CR 561A to CR 561/ Main Ave.	6	0.38	52,100	30,368	11,540	19,798
US 27/SR 25	CR 561/ Main Ave. to CR 50	6	0.68	52,100	30,368	20,650	35,428
US 27/SR 25	CR 50 to Grand Hwy.	6	0.79	52,100	28,073	22,178	41,159
US 27/SR 25	Grand Hwy. to SR 50	6	1.22	52,100	22,731	27,732	63,562
US 27/SR 25	SR 50 to Johns Lake Rd.	6	1.54	52,100	30,571	47,079	80,234
US 27/SR 25	Johns Lake Rd. to Hartwood Marsh Rd.	6	2.06	52,100	27,429	56,504	107,326
US 27/SR 25	Hartwood Marsh Rd. to Lake Louisa Rd.	6	0.95	52,100	25,095	23,840	49,495

Appendix A: Major Street Inventory

Table 22 Continued.

Street	To/From	Ln.	Mi.	Cap.	ADT	VMT	VMC
US 27/SR 25	Lake Louisa Rd. to Boggy Marsh Rd.	6	8.52	43,600	22,908	195,176	371,472
US 27/SR 25	Boggy Marsh Rd. to US 192	6	1.70	53,000	44,079	74,934	90,100
US 27/US441	Sumter County Line to Griffin Ave.	6	1.11	49,200	35,864	39,809	54,612
US 27/US441	Griffin Ave. to Alt US 441 / Alt US 27	4	1.12	32,700	25,028	28,031	36,624
US 27/US441	Alt US 441 / Alt US 27 to CR 466	4	0.79	35,700	<i>10,270</i>	8,113	28,203
US 27/US441	CR 466 to Lake Ella Rd.	4	2.27	35,700	33,473	75,984	81,039
US 27/US441	Lake Ella Rd. to CR 466A / Miller Blvd.	4	1.89	35,700	28,886	54,595	67,473
US 27/US441	CR 466A/Miller Blvd. to CR 460 (MLK Jr.)	4	1.35	35,700	33,670	45,455	48,195
US 27/US441	CR 460 (MLK Jr.) to CR 466A (Picciola)	6	0.51	53,500	46,104	23,513	27,285
US 27/US441	CR 466A (Picciola) to CR 44A/Griffin Rd.	6	0.67	53,500	46,104	30,890	35,845
US 27/US441	CR 44A/ Griffin Rd. to US 27/US441 Split	6	0.15	49,200	46,104	6,916	7,380
US 441/ SR 500	US 27/US441 Split to Lee St.	6	0.75	32,700	30,152	22,614	24,525
US 441/ SR 500	Lee St. to N Canal St.	4	0.42	32,700	34,819	14,624	13,734
US 441/ SR 500	N Canal St. to E Dixie Ave.	4	1.06	32,700	30,055	31,858	34,662
US 441/ SR 500	E Dixie Ave. to E Main St.	6	0.25	53,500	45,879	11,470	13,375
US 441/ SR 500	E Main St. to CR 44	6	1.41	53,500	46,370	65,382	75,435
US 441/ SR 500	CR 44 to Radio Rd.	6	3.07	53,500	45,891	140,885	164,245
US 441/ SR 500	Radio Rd. to CR 473	6	0.88	53,500	<i>24,278</i>	21,365	47,080
US 441/ SR 500	CR 473 to Old US 441/ CR 500A	6	2.33	53,500	42,330	98,629	124,655
US 441/ SR 500	Old US 441/CR 500A to SR 19/Duncan Dr.	6	0.20	53,500	24,181	4,836	10,700
US 441/ SR 500	SR 19/Duncan to CR 452/St Clair Abrams	6	0.62	53,500	38,588	23,925	33,170
US 441/ SR 500	CR 452 to CR 452/L. Eustis Dr.	6	0.39	53,500	<i>24,278</i>	9,468	20,865
US 441/ SR 500	CR 452/Lake Eustis Dr. to D. Walker Dr.	6	1.22	53,500	<i>24,278</i>	29,619	65,270
US 441/ SR 500	David Walker Dr. to SR 19/ Bay St.	6	1.02	53,500	<i>24,278</i>	24,764	54,570
US 441/ SR 500	SR 19/ Bay St. to Old Mt Dora Rd.	6	1.36	53,500	32,780	44,581	72,760
US 441/ SR 500	Old Mt Dora Rd. to Donnelly St.	6	1.22	53,500	34,124	41,631	65,270
US 441/ SR 500	Donnelly St. to Wolf Branch Rd.	6	1.19	35,700	35,084	41,750	42,483
US 441/ SR 500	Wolf Branch Rd. to SR 46	6	1.31	35,700	28,524	37,366	46,767
US 441/ SR 500	SR 46 to Orange County Line	6	0.74	35,700	25,186	18,638	26,418
Subtotal, State Roads						3,468,381	5,809,110
Subtotal, County Roads						2,002,140	6,747,379
Total		680.62				5,470,521	12,556,489

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 2012 traffic counts; 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 B: LONG RANGE PLAN SUMMARY

Table 23. Summary of Long Range Transportation Plan

Project Description	Miles	Lanes	New Lane-Miles	
			Total	Widen
US 27/SR 25 (Lake Louisa-Boggy Marsh)	4.38	4-6	8.76	8.76
US 27/US 441 (Lake Ella Rd-MLK)	3.24	4-6	6.48	6.48
US 27/US 441 (Ave Central-Lake Ella)	4.18	4-6	8.36	8.36
US 441/SR 500 (Perkins St-SR 44)	1.36	4-6	2.72	2.72
SR 48 (I-75 to CR 475)	1.84	2-4	3.68	3.68
SR 44 (Orange Av-US 441)	1.66	2-4	3.32	3.32
SR 50/SR 33 (Villa City Rd-Montevista)	1.89	0-4	7.56	0.00
US 441 (SR 44-SR 46)	2.50	4-6	5.00	5.00
SR 19 (CR 561-CR 48)	4.77	2-4	9.54	9.54
SR 19 (CR 561-CR 448)	1.45	2-4	2.90	2.90
SR 19 (CR 448-Bridge)	1.74	2-4	3.48	3.48
SR 19 (New Bridge)	0.63	0-4	2.52	0.00
SR 19 (Bridge-CR 48)	0.80	2-4	1.60	1.60
Total State Roads			65.92	55.84
CR 466A (Morse Blvd-US 27)	3.69	2-4	7.38	7.38
Hartwood Marsh Rd (US 27-Hancock Rd)	0.71	2-4	1.42	1.42
CR 48 (E of US 27-CR 33)	2.64	2-4	5.28	5.28
CR 470 (Sumter Co Line-CR 33)	3.87	2-4	7.74	7.74
N Hancock Rd Ext (SR 91-CR 50)	1.30	2-4	2.60	2.60
Rolling Acres Road (US 27-CR 466)	1.28	2-4	2.56	2.56
Citrus Grove Road (US 27-N Hancock Rd)	2.00	2-4	4.00	4.00
CR 561/CR 561A Realign (Old CR 50-CR 561)	5.66	0-4	22.64	0.00
CR 561 (SR 19-CR 448)	1.62	2-4	3.24	3.24
CR 19A (US 441-CR 44C)	1.22	2-4	2.44	2.44
Round Lake Rd Ext (Wolf Branch-SR 44)	2.57	0-4	10.28	0.00
Round Lake Road (SR 46-SR 44)	3.57	2-4	7.14	7.14
Total County Roads			76.72	43.80
Total, State and County Roads			142.64	99.64
County Roads as Percent of Total New Lane-Miles			53.8%	
County Widenings as Percent of County New Lane Miles				57.1%

Source: Lake –Sumter MPO, *Transportation 2035, Long Range Transportation Plan*, Cost Feasible Plan, December 2010.

APPENDIX C: COMPARISON OF VMT PER UNIT

Table 24. 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	22.59
Less than 1,500 sf	Dwelling	27.43	36.67	22.59
1,501 to 2,499 sf	Dwelling	36.55	36.67	30.09
2,500 sf or greater	Dwelling	43.13	36.67	35.51
Multi-Family	Dwelling		16.93	14.27
Multi-Family (1-2 Stories)	Dwelling	23.69		
Multi-Family (3+ Stories)	Dwelling	15.10		
Mobile Home Park	Space	14.57	10.74	9.06
Active Adult Community	Dwelling	19.16	13.14	11.09
Lodging	Room			14.75
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			9.85
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			29.53
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 C: Comparison of VMT per Unit

Table 24. Continued

Land Use	Unit	2001 VMT	2007 VMT	Updated VMT
Retail	1,000 sf			37.54
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				16.50
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	15.38
High-Cube Warehouse	1,000 sf	8.78	8.78	
Mini-Warehouse	1,000 sf	5.03	5.03	4.23

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 18.

APPENDIX D: 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 22 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 25 summarizes this step for all five locations.

Table 25. 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
Total Entering US 17 Northbound			109,908

Table 25 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
Total Entering US 27 Southbound			63,247
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
Total Entering US 441 Northbound			65,705
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
Total Entering SR 50 Eastbound			12,243
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
Total Entering SR 50 Westbound			71,193

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 ratios 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 a ratio of 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 26. Dividing the through traffic VMT by total VMT yields the percentage of major road traffic in Lake County attributable to through traffic.

Table 26. Estimated Percentage Through Traffic

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
Total Through VMT (2010)			528,423
÷ Total Major Road VMT (2010)			5,504,083
Through Traffic Percentage			9.6%

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