Volusia County
Impact Fee Study

Final Report
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I. Introduction

With a population of 570,400, Volusia County is the 12th most populous county in Florida. The county continues to experience growth with a projected growth rate of 1 percent annually over the next ten years. To address growth related infrastructure needs, the County implemented impact fees in the following service areas:

- Fire rescue;
- Parks and recreation facilities;
- Throughfare roads; and
- Educational facilities (schools).

To comply with the legislative requirements and to reflect most recent data, the County is interested in updating the fire rescue, parks and recreational facilities, and transportation impact fees and develop a technical study to potentially implement impact fees for emergency medical services (EMS). The school impact fee is being updated separately by the Volusia County School Board.

This study serves as the technical study to support the calculated impact fees. The study details changes to cost, credit, and demand components for existing impact fees and develops these components for the EMS impact fee. Data presented in this report represents the most recent and localized data available at the time of this technical study. All data and support material used in this analysis are incorporated by reference as set forth in this document.

It should be noted that the impact fee levels calculated in this report are not necessarily recommended fees, but instead represent the technically calculated impact fees per unit of land use that could be charged in Volusia County. The County Council may choose to discount the fees across-the-board as a policy decision.

Methodology

Consistent with the County's current adopted methodology, a consumption-based impact fee methodology is utilized in this study, which is commonly used throughout Florida. A consumption-based impact fee charges new development based upon the burden placed on services from each land use (demand). The demand component is measured in terms of

population per unit in the case of all impact fee program areas with the exception of thoroughfare roads. For thoroughfare roads, vehicle-miles of travel is used.

A consumption-based impact fee charges new growth the proportionate share of the cost of providing additional infrastructure available for use by new growth. Unlike a "needs-based" approach, the consumption-based approach ensures that the impact fee is set at a rate that does not generate sufficient revenues to correct existing deficiencies. Given this, the County does not need to go through the process of estimating the portion of each capacity expansion project that may be related to existing deficiencies. In addition, per legal requirements, a credit is subtracted from the total cost to account for the value of future tax contributions of new development toward any capacity expansion projects to ensure that the new development is not charged twice for the same service.

Legal Overview

In Florida, legal requirements related to impact fees have primarily been established through case law since the 1980's. Impact fees must comply with the "dual rational nexus" test, which requires that they:

- Be supported by a study demonstrating that the fees are proportionate in amount to the need created by new development paying the fee; and
- Be spent in a manner that directs a proportionate benefit to new development, typically accomplished through establishment of benefit districts and a list of capacity-adding projects included in the County's Capital Improvement Plan, Capital Improvement Element, or another planning document/Master Plan.

In 2006, the Florida legislature passed the "Florida Impact Fee Act," which recognized impact fees as "an outgrowth of home rule power of a local government to provide certain services within its jurisdiction." § 163.31801(2), Fla. Stat. The statute – concerned with mostly procedural and methodological limitations – did not expressly allow or disallow any particular public facility type from being funded with impact fees. The Act did specify procedural and methodological prerequisites, such as the requirement of the fee being based on most recent and localized data, a 90-day requirement for fee changes, and other similar requirements, most of which were common to the practice already.

More recent legislation further affected the impact fee framework in Florida, including the following:

- **HB 227 in 2009:** The Florida legislation statutorily clarified that 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 the Impact Fee Act and that the court may not use a deferential standard.
- **SB 360 in 2009:** Allowed fees to be decreased without the 90-day notice period required to increase the fees and purported to change the standard of legal review associated with impact fees. SB 360 also required the Florida Department of Community Affairs (now the Department of Economic Opportunity) and Florida Department of Transportation (FDOT) to conduct studies on "mobility fees," which were completed in 2010.
- **HB 7207 in 2011:** Required a dollar-for-dollar credit, for purposes of concurrency compliance, for impact fees paid and other concurrency mitigation required.
- **HB 319 in 2013:** Applied mostly to concurrency management authorities, but also encouraged local governments to adopt alternative mobility systems using a series of tools identified in section 163.3180(5)(f), Florida Statutes, including:
    1. Adoption of long-term strategies to facilitate development patterns that support multi-modal solutions, including urban design, and appropriate land use mixes, including intensity and density.
    2. Adoption of an area-wide level of service not dependent on any single road segment function.
    3. Exempting or discounting impacts of locally desired development, such as development in urban areas, redevelopment, job creation, and mixed use on the transportation system.
    4. Assigning secondary priority to vehicle mobility and primary priority to ensuring a safe, comfortable, and attractive pedestrian environment, with convenient interconnection to transit.
    5. Establishing multi-modal level of service standards that rely primarily on non-vehicular modes of transportation where existing or planned community design will provide adequate level of mobility.
    6. Reducing impact fees or local access fees to promote development within urban areas, multi-modal transportation districts, and a balance of mixed-use development in certain areas or districts, or for affordable or workforce housing.

Also, under HB 319, a mobility fee funding system expressly must comply with the dual rational nexus test applicable to traditional impact fees. Furthermore, any mobility fee revenues collected must be used to implement the local government's plan, which serves as the basis to demonstrate the need for the fee. Finally, under HB 319, an

alternative mobility system, that is not mobility fee-based, must not impose upon new development any responsibility for funding an existing transportation deficiency.

- **HB 207 in 2019:** Included the following changes to the Impact Fee Act along with additional clarifying language:
    1. Impact fees cannot be collected prior to building permit issuance; and
    2. Impact fee revenues cannot be used to pay debt service for previously approved projects unless the expenditure is reasonably connected to, or has a rational nexus with, the increased impact generated by the new residential and commercial construction.
- **HB 7103 in 2019:** Addressed multiple issues related to affordable housing/linkage fees, impact fees, and building services fees. In terms of impact fees, the bill required that when local governments increase their impact fees, the outstanding impact fee credits for developer contributions should also be increased. This requirement was to operate prospectively; however, HB 337 that was signed in 2021 deleted this clause and making all outstanding credits eligible for this adjustment. This bill also allowed local governments to waive/reduce impact fees for affordable housing projects without having to offset the associated revenue loss.
- **SB 1066 in 2020:** Added language allowing impact fee credits to be assignable and transferable at any time after establishment from one development or parcel to another that is within the same impact fee zone or impact fee district or that is within an adjoining impact fee zone or district within the same local government jurisdiction. In addition, added language indicating any new/increased impact fee not being applicable to current or pending permit applications submitted prior to the effective date of an ordinance or resolution imposing new/increased fees.
- **HB 1339 in 2020:** Requires reporting of various impact fee related data items within the annual financial audit report submitted to the Department of Financial Services.
- **HB 337 in 2021:** Placed limits on the amount and frequency of fee increases, but also included a clause to exceed these restrictions if the local governments can demonstrate extraordinary circumstances, hold two public workshops discussing these circumstances and the increases are approved by two-thirds of the governing body.

The following paragraphs provide further detail on the generally applicable legal standards applicable here.

Impact Fee Definition

- An impact fee is a one-time capital charge levied against new development.
- An impact fee is designed to cover the portion of the capital costs of infrastructure capacity consumed by new development.
- The principal purpose of an impact fee is to assist in funding the implementation of projects identified in the Capital Improvements Program (CIP) and other capital improvement programs for the respective facility/service categories.

Impact Fee vs. Tax

- An impact fee is generally regarded as a regulatory function established based upon the specific benefit to the user related to a given infrastructure type and is not established for the primary purpose of generating revenue for the general benefit of the community, as are taxes.
- Impact fee expenditures must convey a proportional benefit to the fee payer. This is accomplished through the establishment of benefit districts as needed, where fees collected in a benefit district are spent in the same benefit district.
- An impact fee must be tied to a proportional need for new infrastructure capacity created by new development.

This technical report has been prepared to support legal compliance with existing case law and statutory requirements and documents the methodology used for the impact fee calculations in the following sections, including an evaluation of the cost, credit, and demand components.

Land Use Changes/Additions

As part of this study, several new land uses were added or expanded based on direction from Volusia County and to reflect the most recent ITE Trip Generation Handbook data. Volusia County's current impact fee rates are based on the ITE 10th Edition data. The 11th Edition Trip Generation Handbook was released in Fall 2021 and reflects several changes to land use groupings and trip generation rate data. The following paragraphs summarize resulting changes to the land uses that are included in the County's fee schedule.

Residential Land Use

Currently, Volusia County's fee schedule for fire and parks and recreation impact fees include a single rate for all residential categories combined. At the request of the County, this study incorporated tiering by size of unit for fire, EMS and parks/recreation impact fees.

In the case of the thoroughfare road impact fee, the residential land use includes multiple categories without any tiering by size. This study provided a tiered option for single family and adds the single family attached land use category. In addition, the current thoroughfare road impact fee schedule includes multi-family low-rise (duplex/triplex) and mid-rise (3+ stories) land uses. ITE 11th Edition has slightly realigned these uses to the following configurations, which are reflected in the updated thoroughfare road impact fee schedule:

- Multi Family 1 to 3 Stories
- Multi-Family 4 or more Stories

Major Sports Facility

Due to a lack of trip characteristics data this land use has been removed from the thoroughfare road impact fee schedule.

Golf Course

The golf course (per hole) land use has been added to the County's impact fee land use schedule. This land use is defined as an expansive landscaped area that includes a series of golf holes, each consisting of a tee, fairway, and putting green. The site may have a driving range, clubhouse with a pro shop, restaurant, lounge, or banquet facility.

Medical Office

Based on recent Florida trip characteristics studies, the medical office land use has been split into two tiers (based on square footage) to reflect lower trip generation at medical offices less than 10,000 square feet. These Florida studies are summarized in Appendix C.

Retail (Shopping Center)

For the retail/shopping center land use, ITE 11th Edition has divided the land use into three separate categories based on the size of development. The updated configurations are reflected in the impact fee schedule:

- Retail/Shopping Center less than 40,000 sfgla
- Retail/Shopping Center 40,000 sfgla to 150,000 sfgla
- Retail/Shopping Center greater than 150,000 sfgla

Convenience Store w/Gas Pumps

Due to overlap with the "Gas Station w/Convenience Store" land use, and to avoid confusion, this land use was removed from the impact fee schedule.

Gas Station w/Convenience Market

The current thoroughfare road impact fee schedule includes a single Gas Station land use (LUC 960, Super Convenience). ITE 11th Edition has updated this land use to correspond to different convenience store square footage tiers and updated the unit of measure to "per fuel position":

- LUC 944: Gas Station w/Convenience Market less than 2,000 sq ft
- LUC 945: Gas Station w/Convenience Market 2,000 to 5,499 sq ft
- LUC 945: Gas Station w/Convenience Market 5,500+ sq ft

II. Fire Rescue

This section provides the results of the fire rescue impact fee analysis. Several elements addressed in this section include:

- Facility Inventory
- Service Area and Demand Component
- Level of Service
- Cost Component
- Credit Component
- Net Impact Cost
- Calculated Impact Fee Schedule
- Impact Fee Schedule Comparison of Select Land Uses
- Fire Rescue Impact Fee Benefit Zones

These elements are summarized in the remainder of this section.

Facility Inventory

Table II-1 presents the County-owned buildings and land inventory associated with the fire rescue services in Volusia County, which includes approximately 93,200 square feet of building space and 39 acres of land. Stations that are not owned by Volusia County are excluded from the inventory for impact fee calculation purposes.

Building value estimates are based on a review of recent construction and estimated costs for future stations, insurance values of existing buildings, cost of similar structures in other Florida jurisdictions, and discussions with representatives from Volusia County. Land values are based on a review of estimates for future land purchases, current value of land where existing facilities are located and recent vacant land sales for similar parcels based on information obtained from the Volusia County Property Appraiser.

Based on this review and analysis, the building value is estimated at $400 per square foot for fire stations. The land value is estimated at $60,000 per acre. Using these cost estimates results in a total building and land value of approximately $39.6 million, of which $37.3 million is for buildings and the remaining $2.3 million is for land. A more detailed explanation of building and land value estimates is included in Appendix B.

Table II-1

Fire Rescue Building and Land Inventory

Building Name	Address	Bays[1]	Building Square Footage[1]	Total Square Footage[2]	Acres[3]	Allocated Acres[4]	Building Value[5]	Land Value[6]	Total Building & Land Value[7]
Fire Station #11	1580 Derbyshire Road	2	4,948	4,948	N/A	N/A	$1,979,200	N/A	$1,979,200
Fire Station #12	1979 Taylor Road	1	3,732	3,732	1.00	1.00	$1,492,800	$60,000	$1,552,800
Fire Station #14	1716 Atlantic Avenue	2	6,015	6,015	0.70	0.70	$2,406,000	$42,000	$2,448,000
Fire Training Facility/Fire Station #15	3889 Tiger Bay Road	2	7,000	514,219	489.27	9.50	$3,994,400	$570,000	$4,564,400
Burn Building			2,250						
Fire Training Tower			736						
Fire Station #16	3935 Old Dixie Highway	2	6,300	6,300	2.30	2.30	$2,520,000	$138,000	$2,658,000
Fire Station #18	500 Rodeo Road	2	1,440	1,440	4.56	4.56	$576,000	$273,600	$849,600
Fire Station #21	4840 S. Atlantic Avenue	2	3,291	3,291	0.63	0.63	$1,316,400	$37,800	$1,354,200
Fire Station #22	213 N. U.S. Highway 1	3	4,364	6,255	1.43	1.00	$1,745,600	$60,000	$1,805,600
Turnbull Fire Station #23	1850 Pioneer Trail	3	4,030	7,470	3.00	3.00	$2,988,000	$180,000	$3,168,000
Turnbull Fire Station #23 Modular			1,440						
Turnbull Fire Station #23			2,000						
Resource CTR/Fire Station #31	1970 S Volusia Ave	2	3,936	3,936	0.63	0.63	$1,574,400	$37,800	$1,612,200
Fire Station #32	2850 Firehouse Road	2	4,060	4,060	0.97	0.97	$1,624,000	$58,200	$1,682,200
Fire Station #34	1700 Enterprise-Osteen Road	2	3,267	3,267	2.00	2.00	$1,306,800	$120,000	$1,426,800
Fire Station #35	630 W. Main Street	2	5,490	5,490	1.10	1.10	$2,196,000	$66,000	$2,262,000
Fire Station #36	180 N. State Road 415	2	3,830	10,580	6.59	2.39	$1,532,000	$143,400	$1,675,400
Fire Station #41	5007 Central Avenue	3	5,820	5,820	1.12	1.12	$2,328,000	$67,200	$2,395,200
Fire Station #42	1885 Kepler Road	2	4,100	4,100	0.74	0.74	$1,640,000	$44,400	$1,684,400
Fire Station #43	1580 N US Highway 17	3	4,606	4,606	0.65	0.65	$1,842,400	$39,000	$1,881,400
Fire Station #44	132 N. Fountain Drive	2	3,150	3,150	0.48	0.48	$1,260,000	$28,800	$1,288,800
Fire Station #45	2580 W. State Road 44	2	4,100	60,299	48.10	3.27	$1,640,000	$196,200	$1,836,200
Fire Station #46	920 Glenwood Road	2	3,255	3,255	2.50	2.50	$1,302,000	$150,000	$1,452,000
Total			**93,160**	**662,233**	**567.77**	**38.54**	**$37,264,000**	**$2,312,400**	**$39,576,400**
Building Value per Sq. Ft.[8]							**$400**		
Land Value per Acre[9]								**$60,000**	

1) Source: Volusia County
2) Source: Volusia County Property Appraiser. Total square footage on property.
3) Source: Volusia County Property Appraiser
4) Acres (Item 3) divided by total square footage (Item 2) multiplied by building square footage (Item 1)
5) Building square footage (Item 1) multiplied by building value per square foot (Item 8)
6) Allocated acres (Item 4) multiplied by land value per acre (Item 9)
7) Sum of building and land value (Items 5 and 6)
8) Source: Appendix B
9) Source: Appendix B

In addition to land and buildings, Volusia County fire rescue impact fee inventory includes the necessary vehicles and equipment required to perform its services. As presented in Table II-2, the total vehicle and equipment value is approximately $19 million.

Table II-2

Fire Rescue Vehicle and Equipment Value

Description[1]	Units[2]	Average Unit Cost[3]	Total Value[4]
Fire Rescue Services			
Brush Truck/Attack	10	$50,006	$500,060
Chevy C4500	1	$34,500	$34,500
Chevy Tahoe	7	$35,842	$250,894
Engines	20	$306,092	$6,121,840
Ford Expedition	1	$33,624	$33,624
Ford Explorer	6	$32,919	$197,514
Ford F150	6	$33,950	$203,700
Ford F250	7	$31,530	$220,710
Ford F650	1	$38,491	$38,491
Ford Transit	2	$31,600	$63,200
Hazmat Engine	1	$686,303	$686,303
Hazmat Vehicle	1	$69,587	$69,587
Kaiser M35A2CC Military	1	$1,000	$1,000
Ladders	13	$667,050	$8,671,650
Reserve Engine	6	$252,828	$1,516,968
Reserve Squad Engine	1	$372,276	$372,276
Total Value		-	**$18,982,317**

1) Source: Volusia County
2) Source: Volusia County. Excludes vehicles and equipment at the Airport fire station.
3) Source: Volusia County. Average unit cost rounded.
4) Number of units (Item 2) multiplied by average unit cost (Item 3)

Service Area and Demand Component

Volusia County provides fire rescue services throughout the unincorporated county and the Cities of Lake Helen and Oak Hill and Town of Pierson. In this technical study, the current 2022 weighted and functional population estimates are used for this service area. Because simply using weighted (permanent, plus weighted seasonal) population estimates does not fully address daily workers and visitors who also benefit from fire rescue services, the "functional" weekly 24-hour population approach is used to establish a common unit of demand across different land

uses. Functional population accounts for residents, visitors, and workers traveling in and out of the service area throughout the day and calculates the presence of population at the different land uses during the day, which represents the demand component of the impact fee equation. Appendix A provides further detail on the population analysis conducted.

Level of Service

Volusia County is served by 20 County-owned stations, which results in a current level of service (LOS) of almost 6,900 weighted seasonal residents per station or 0.145 stations per 1,000 weighted seasonal residents. In terms of functional residents, the County's achieved LOS is 5,700 functional residents per station or 0.176 stations per 1,000 functional residents. Impact fee calculations assume that the County will continue to provide this achieved LOS in the future.

Table II-3

Current Achieved Level of Service (2022)

Variable	2022 Population	
	Weighted	Functional
Fire Rescue Services		
Fire Service Area Population[(1)]	137,495	113,410
Number of Stations[(2)]	20	20
Population per Station[(3)]	6,875	5,671
Achieved LOS (Stations per 1,000 Population)[(4)]	**0.145**	**0.176**

1) Source: Source: Appendix A, Table A-1 for weighted population, Table A-10 for functional population
2) Source: Table II-1
3) Population (Item 1) divided by the number of stations (Item 2)
4) Number of stations (Item 2) divided by the population (Item 1) multiplied by 1,000

Table II-4 compares the LOS achieved by other select Florida counties to the LOS of Volusia County. The LOS is displayed in terms of permanent population for 2021 for the service area of all entities, which is the most recent data available for all jurisdictions.

Table II-4

Level of Service Comparison (2021)

Jurisdiction	Service Area Population (2021)[1]	Number of Stations[2]	Residents per Station[3]	LOS (Stations per 1,000 Residents)[4]
Orange County	936,018	44	21,273	0.047
Pasco County	538,106	26	20,696	0.048
Osceola County	264,428	15	17,629	0.057
St. Johns County	270,557	16	16,910	0.059
Citrus County	144,421	10	14,442	0.069
Charlotte County[5]	129,552	17	7,621	0.131
Lake County	210,817	28	7,529	0.133
Volusia County[6]	**123,042**	**23**	**5,350**	**0.187**
Putnam County	63,205	18	3,511	0.285
Flagler County	21,663	7	3,095	0.323

1) University of Florida, Bureau of Economic & Business Research (BEBR) Florida Estimates of Population, April 1, 2021
2) Source: County/department websites
3) Service area population (Item 1) divided by the number of stations (Item 2)
4) Number of stations (Item 2) divided by the service area population (Item 1) divided by 1,000
5) Population figure reflects 2020 Census estimates. BEBR does not provide population estimates for Census Designated Places, which is needed to calculate Charlotte County's service area population.
6) The station count includes the three stations leased by Volusia County to provide a consistent comparison. For impact fee calculation purposes, only the County-owned station are included.

Cost Component

The cost component of the study evaluates the cost of all capital assets, including buildings, land, vehicles and equipment. Table II-5 provides a summary of all capital costs, amounting to approximately $58.6 million or $2.9 million per fire rescue station. This $2.9 million value per station incorporates not only the value of a single fire station, but total asset value per station, including buildings, land, vehicles and equipment.

In addition, Table II-5 also provides the impact cost per functional resident, which is calculated by multiplying the total asset value per station of $2.9 million by the current LOS (stations per 1,000 functional residents) of 0.176 and dividing by 1,000. As shown, this calculation results in $515 per functional resident.

Table II-5

Total Impact Cost per Functional Resident

Variable	Figure	Percent of Total[9]
Building Value[1]	$37,264,000	64%
Land Value[2]	$2,312,400	4%
Vehicle & Equipment Value[3]	$18,982,317	32%
Total Asset Value[4]	**$58,558,717**	**100%**
Number of Owned Stations[5]	20	
Net Asset Value per Station[6]	**$2,927,936**	
Achieved LOS (Stations per 1,000 Functional Residents)[7]	0.176	
Total Impact Cost per Functional Resident[8]	**$515.32**	

1) Source: Table II-1
2) Source: Table II-1
3) Source: Table II-2
4) Sum of building value (Item 1), land value (Item 2), and vehicle/equipment value (Item 3)
5) Source: Table II-3
6) Total asset value (Item 4) divided by the number of owned stations (Item 5)
7) Source: Table II-3
8) Total asset value per station (Item 6) multiplied by the current achieved LOS (Item 7) divided by 1,000
9) Distribution of total asset value

Credit Component

To avoid overcharging new development for the fire rescue impact fee, a review of the capital funding program for fire rescue services was completed. The purpose of this review was to determine any potential revenue credits generated by new development that are being used for expansion of capital facilities, land, vehicles, and equipment included in the inventory. It should be noted that the credit component does not include any capital renovation, maintenance, or operations expenses, as these types of expenditures cannot be funded with impact fee revenue.

Capital Expansion Credit

To calculate the capital expansion credit per functional resident, funding sources used/programmed for capacity addition projects over the past five years and for the next five years are reviewed. Between FY 2017 and FY 2026, the County has allocated an average non-impact fee funding of $590,300 per year toward fire rescue services capital facilities utilizing ad valorem tax revenues. The annual capital expansion expenditures were divided by the average annual functional residents for the same period to calculate the average annual capital expansion credit per functional resident. As presented in Table III-6, the result is approximately $5.23 per functional resident per year.

Once the revenue credit per population is calculated, a credit adjustment is needed since the revenue credit is funded with ad valorem tax revenues. This adjustment accounts for the fact that new homes tend to pay higher property taxes per dwelling unit than older homes and was estimated based on a comparison of the average taxable value of newer homes to that of all homes. As presented, the adjusted revenue credit per population amounts to $7.85 per year.

Table II-6

Capital Expansion Project Funding per Functional Resident

Expenditure[1]	FY 2017-21	FY 2021-26	Total
Ad Valorem:			
Fire Station 23 Renovation and addition of two annexes	$154,296	-	**$154,296**
Fire Station 36 Remodel Renovation	$84,909	-	**$84,909**
Fire Rescue Training Center - Restroom Facility	-	$240,000	**$240,000**
Fire Rescue Training Center - Training Land Clearing and Preparation	-	$350,000	**$350,000**
Fire Station 18 - Rodeo Road - Relocation (Renamed Fire Station 47)	-	$2,325,000	**$2,325,000**
Fire Station 23 - Pioneer Trail: Relocation	-	$2,574,000	**$2,574,000**
Fire Station 34 - Indian Mound - Renovation	-	$175,000	**$175,000**
Total Capital Expansion Expenditures			**$5,903,205**
Average Annual Capital Expansion Expenditures[2]			**$590,321**
Average Annual Functional Population[3]			**112,830**
Capital Expansion Expenditures per Resident[4]			**$5.23**
Residential Land Uses Credit Adjustment Factor[5]			**1.50**
Residential Land Uses: Adjusted Capital Expansion Expenditures per Resident[6]			**$7.85**

1) Source: Volusia County
2) Total capital expansion expenditures divided by 10 to calculate the average annual expenditures
3) Source: Appendix A, Table A-10
4) Average annual capital expansion expenditures (Item 2) divided by the population (Item 3)
5) Adjustment factor to reflect higher ad valorem taxes paid by new homes
6) Capital expansion expenditures per resident (Item 4) multiplied by the credit adjustment factor (Item 5)

Net Impact Cost

Table II-7 summarizes the net impact cost per functional resident, which is the difference between the cost component and the credit component. The resulting net impact cost is $371 per resident for residential land uses and $419 per resident for non-residential land uses.

Table II-7

Net Impact Cost per Functional Resident

Variable	Fire Rescue	
	Impact Cost	Revenue Credits
Total Impact Cost per Resident[1]	**$515.32**	-
Revenue Credit		
Avg. Annual Capital Expansion Credit per Resident[2]		
- Residential Land Uses		$7.85
- Non-residential Land Uses		$5.23
- Capitalization Rate		2.5%
- Capitalization Period (years)		25
Total Capital Improvement Credit per Resident[3]:		
- Residential Land Uses		$144.63
- Non-residential Land Uses		$96.36
Net Impact Cost		
Net Impact Cost per Resident[6]		
- Residential Land Uses		**$370.69**
- Non-residential Land Uses		**$418.96**

1) Source: Table II-5
2) Source: Table II-6
3) Average annual capital improvement credit per resident (Item 2) over a capitalization rate of 2.5% for 25 years. The capitalization rate estimate was provided by Volusia County.
4) Total impact cost per resident (Item 1) less total credit per resident (Item 3)

Calculated Impact Fee Schedule

Table II-8 presents the calculated fire rescue impact fee schedule for Volusia County for both residential and non-residential land uses, based on the net impact cost per functional resident previously presented in Table II-7.

Table II-8

Fire Rescue Impact Fee Schedule

ITE LUC	Land Use	Impact Unit	Fire Rescue Services			
			Functional Residents per Unit[1]	Calculated Impact Fee[2]	Adopted Fee[3]	Percent Change[4]
	RESIDENTIAL:					
210/215/220/221/222/240	1,200 sf & Under	du	1.31	**$485.60**	$293.73	65%
	1,201 sf to 1,700 sf	du	1.51	**$559.74**	$293.73	91%
	1,701 sf to 2,200 sf	du	1.61	**$596.81**	$293.73	103%
	2,201 sf to 3,000 sf	du	1.69	**$626.47**	$293.73	113%
	3,001 sf & Over	du	1.85	**$685.78**	$293.73	134%
	TRANSIENT, ASSISTED, GROUP:					
310	Hotel	room	1.39	**$582.35**	$150/1,000 sf	N/A
320	Motel	room	1.22	**$511.13**	$150/1,000 sf	N/A
620	Nursing Home	1,000 sf	2.40	**$1,005.50**	$150.00	570%
	RECREATIONAL:					
411	Public Park	acre	0.05	**$20.95**	$150/1,000 sf	N/A
430	Golf Course	hole	0.86	**$360.31**	$150/1,000 sf	N/A
445	Movie Theater	1,000 sf	3.96	**$1,659.08**	$150.00	1006%
	INSTITUTIONS:					
560	Church	1,000 sf	0.41	**$171.77**	$150.00	15%
565	Day Care Center	1,000 sf	0.81	**$339.36**	$150.00	126%
	MEDICAL:					
610	Hospital	1,000 sf	1.31	**$548.84**	$150.00	266%
	OFFICE:					
710	General Office	1,000 sf	0.97	**$406.39**	$150.00	171%
714	Corporate Headquarters Bldg	1,000 sf	0.96	**$402.20**	$150.00	168%
720	Medical Office 10,000 sf & Under	1,000 sf	1.22	**$511.13**	$150.00	241%
	Medical Office greater than 10,000 sf	1,000 sf	1.75	**$733.18**	$150.00	389%
	RETAIL:					
822	Retail/Shopping Center less than 40,000 sfgla	1,000 sfgla	2.09	**$875.63**	$150.00	484%
821	Retail/Shopping Center 40,000 to 150,000 sfgla	1,000 sfgla	2.59	**$1,085.11**	$150.00	623%
820	Retail/Shopping Center greater than 150,000 sfgla	1,000 sfgla	1.42	**$594.92**	$150.00	297%
840/841	New/Used Automobile Sales	1,000 sf	1.58	**$661.96**	$150.00	341%
849	Tire Superstore/Auto Repair	bay	1.71	**$716.42**	$150.00	378%
850	Supermarket	1,000 sf	2.46	**$1,030.64**	$150.00	587%
862	Home Improvement Superstore	1,000 sf	1.94	**$812.78**	$150.00	442%
880/881	Pharmacy/Drug Store with and w/o Drive-Thru	1,000 sf	1.85	**$775.08**	$150.00	417%
890	Furniture Store	1,000 sf	0.32	**$134.07**	$150.00	-11%
	SERVICES:					
911	Bank/Savings w/o Drive-In	1,000 sf	1.17	**$490.18**	$150.00	227%
912	Bank/Savings w/Drive-In	1,000 sf	1.48	**$620.06**	$150.00	313%
931	Fine Dining/Quality Restaurant	1,000 sf	5.37	**$2,249.82**	$150.00	1400%
932	High-Turnover (Sit-Down) Restaurant	1,000 sf	5.07	**$2,124.13**	$150.00	1316%
934	Fast Food Resturant w/Drive-Thru	1,000 sf	9.16	**$3,837.67**	$150.00	2458%
941	Quick Lubrication Vehicle Shop	bay	1.61	**$674.53**	$150/1,000 sf	N/A
943	Automobile Parts and Service Center	1,000 sf	1.08	**$452.48**	$150.00	202%
944	Gas Station w/Convenience Store less than 2,000 sq ft	fuel pos.	1.47	**$615.87**	$150/1,000 sf	N/A
945	Gas Station w/Convenience Store 2,000 to 5,499 sq ft	fuel pos.	2.31	**$967.80**	$150/1,000 sf	N/A
	Gas Station w/Convenience Store 5,500+ sq ft	fuel pos.	3.02	**$1,265.26**	$150/1,000 sf	N/A

Table II-8 (Continued)

Fire Rescue Impact Fee Schedule

ITE LUC	Land Use	Impact Unit	Fire Rescue Services			
			Functional Residents per Unit[1]	Calculated Impact Fee[2]	Adopted Fee[3]	Percent Change[4]
	INDUSTRIAL:					
110	General Industrial	1,000 sf	0.50	**$209.48**	$150.00	40%
140	Manufacturing	1,000 sf	0.58	**$243.00**	$150.00	62%
150	Warehouse	1,000 sf	0.12	**$50.28**	$150.00	-67%
151	Mini-Warehouse	1,000 sf	0.05	**$20.95**	$150.00	-86%

1) Source: Appendix A, Table A-12 for residential and transient, assisted, group land uses and Table A-13 for non-residential land uses
2) Net impact cost per functional resident from Table II-7 multiplied by the functional residents per unit (Item 1) for each land use
3) Source: Volusia County
4) Percent change from the adopted impact fee (Item 3) to the calculated impact fee (Item 2)

Impact Fee Schedule Comparison of Select Land Uses

As part of the work effort in developing Volusia County impact fee schedule, the County's calculated and adopted impact fee schedules are compared to the adopted fee schedules of other select Florida counties. Table II-9 presents this comparison.

Table II-9

Fire Rescue Impact Fee Schedule Comparison

Land Use	Unit[2]	Volusia County		Brevard County[5]	Citrus County[6]	Collier County[7]	Flagler County[8]	Lake County[9]
		Calculated[3]	Current Adopted[4]					
Date of Last Update		2022	2001	2000	2021	2010	2021	2003
Assessed Portion of Calculated[1]		N/A	N/A	100%	100%	100%	100%	95%
Residential:								
Single Family (2,000 sq ft)	du	**$597**	$294	$54	$281	$476	$738	$390
Multi-Family (1,300 sq ft)	du	**$560**	$294	$47	$216	$476	$262	$244
Non-Residential:								
Light Industrial	1,000 sf	**$209**	$150	N/A	$73	$1,060	$229	$104
General Office (50,000 sq ft)	1,000 sf	**$406**	$150	$26	$169	$1,060	$467	$1,301
Retail/Shopping Center (125,000 sq ft)	1,000 sfgla	**$1,085**	$150	$75	$355	$1,060	$1,228	$1,301
Bank/Savings w/Drive-Thru	1,000 sf	**$620**	$150	$61	$355	$1,060	$705	$1,301
Fast Food Restaurant w/Drive-Thru	1,000 sf	**$3,838**	$150	$322	$355	$1,060	$4,623	$1,301

Land Use	Unit[2]	Volusia County		Orange County[10]	Osceola County[11]	Pasco County[12]	Seminole County[13]	St. Johns County[14]
		Calculated[3]	Current Adopted[4]					
Date of Last Update		2022	2001	2017	2017	2003	2021	2018
Assessed Portion of Calculated[1]		N/A	N/A	100%	100%	100%	100%	100%/60%
Residential:								
Single Family (2,000 sq ft)	du	**$597**	$294	$346	$391	$248	$497	$654
Multi-Family (1,300 sq ft)	du	**$560**	$294	$237	$484	$248	$332	$528
Non-Residential:								
Light Industrial	1,000 sf	**$209**	$150	$86	$43	$324	$163	$16
General Office (50,000 sq ft)	1,000 sf	**$406**	$150	$274	$267	$324	$290	$193
Retail/Shopping Center (125,000 sq ft)	1,000 sfgla	**$1,085**	$150	$307	$543	$324	$491	$111
Bank/Savings w/Drive-Thru	1,000 sf	**$620**	$150	$307	$543	$324	$485	$41
Fast Food Restaurant w/Drive-Thru	1,000 sf	**$3,838**	$150	$307	$2,623	$324	$3,156	$96

1) Represents the portion of the maximum calculated fee for each respective county that is actually charged. Fees may have been lowered/increased through annual indexing or policy discounts. Does not account for moratorium/suspensions.
2) du = dwelling unit
3) Table II-8
4) Source: Volusia County Growth and Resource Management. Multi-family (2-3 units) used as a proxy for the multi-family category.
5) Source: Brevard County Planning and Development Impact fees
6) Source: Citrus County Land Development Division Impact Fees.
7) Source: Collier County Growth Management Impact Fees. Fees shown for North Collier Fire District.
8) Source: Flagler County Growth Management
9) Source: Lake County Planning and Zoning
10) Source: Orange County Permits and Licenses Impact Fees
11) Source: Osceola County Impact and Mobility Fees Office
12) Source: Pasco County Concurrency, Mobility, Impact, and Service Connection Fees
13) Source: Seminole County Building Permit and County Impact Fees. Multi-family (1 & 2 stories) used as a proxy for the multi-family category.
14) Source: St. Johns County's Schedule of Fees and Services

Fire Rescue Impact Fee Benefit Zones

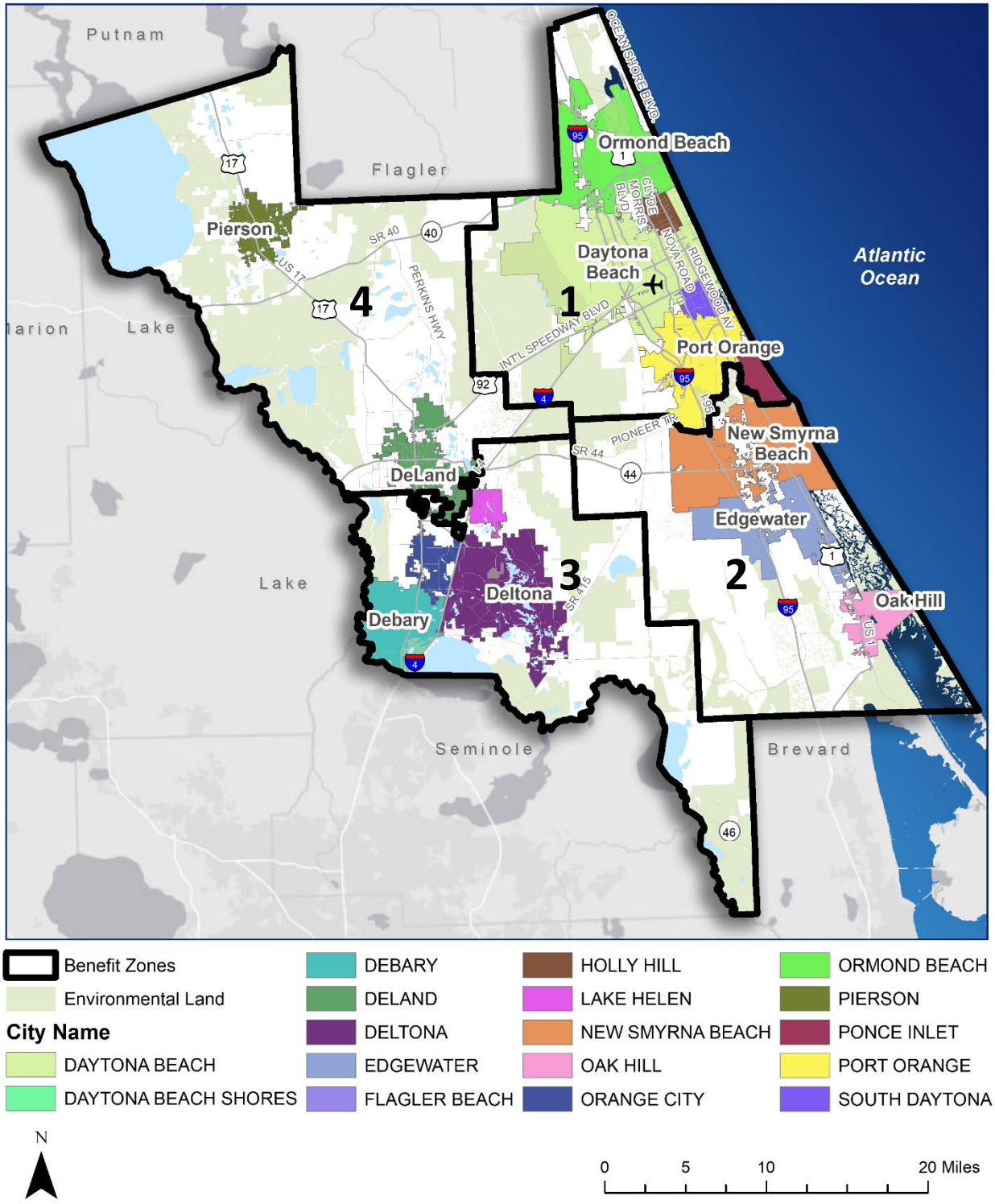
Currently, Volusia County has four fire rescue impact fee benefit districts, as outlined in Section 70-77 (Exhibit A) of the County's Code of Ordinances. These zones consist of the Northeast, Southeast, Southwest, and Northwest, as shown in Map II-1.

Benefit districts dictate where impact fee revenues can be spent to ensure that fee payers receive the associated benefit. Typically, these boundaries are based on land use patterns, growth rates, and major man-made and/or geographical/environmental barriers.

Given that fire stations assist other stations and vehicles travel throughout the service area, it is more common to have single fire benefit district for the entire service area. Discussions with Volusia County Fire Rescue also supported the fact that stations respond to incidents throughout the service area and there are no barriers preventing them to do so.

Map II-1

Current Fire Rescue Impact Fee Benefit Zones



III. Emergency Medical Services

This section provides the results of the emergency medical services impact fee analysis. Volusia County provides emergency medical services countywide. Several elements addressed in this section include:

- Facility Inventory
- Service Area, Benefit Zones and Demand Component
- Level-of-Service
- Cost Component
- Credit Component
- Net Impact Cost
- Calculated Impact Fee Schedule
- Impact Fee Schedule Comparison

Facility Inventory

Table III-1 presents the County-owned buildings and land inventory associated with the emergency medical services in Volusia County, which includes approximately 29,500 square feet of building space and 2.8 acres of land.

Building value estimates are based on insurance values of existing buildings, cost of similar structures in other Florida jurisdictions, and discussions with representatives from Volusia County. Land values are based on review of estimates for future land purchases, current value of land where existing facilities are located and recent vacant land sales for similar parcels based on information obtained from the Volusia County Property Appraiser.

Based on this review and analysis, the building value is estimated at $300 per square foot for office space and $100 per square foot for warehouse/support space. The land value is estimated at $60,000 per acre. Using these cost estimates results in a total building and land value of approximately $5.8 million, of which $5.6 million is for buildings and the remaining $200,000 is for land. A more detailed explanation of building and land value estimates is included in Appendix B.

Table III-1

Emergency Medical Services Building and Land Inventory

Building Name	Address	Building Type	Building Square Footage[1]	Acres[2]	Building Value[3]	Land Value[4]	Total Building & Land Value[5]
EMS Station at Fire Station 23	1850 Pioneer Trail	Office	600	N/A[6]	$180,000	N/A	$180,000
EMS Station	112 Carswell Ave	Office	12,861	2.53	$3,858,300	$151,800	$5,014,000
		Warehouse	9,064		$906,400		
		Service Shop	975		$97,500		
Evacuation Ambulance Service	135 Carswell Ave	Warehouse	6,030	0.26	$603,000	$15,600	$618,600
Total			**29,530**	**2.79**	**$5,645,200**	**$167,400**	**$5,812,600**
Building Value per Square Foot[7]					**$191**		
Land Value per Acre[8]						**$60,000**	

1) Source: Volusia County
2) Source: Volusia County Property Appraiser
3) Building square footage (Item 1) multiplied by building value per square foot, which is estimated at $300 per square foot for office and $100 per square foot for support facilities. Additional information is provided in Appendix B.
4) Acreage (Item 2) multiplied by land value per acre (Item 8)
5) Sum of building and land value (Items 3 and 4)
6) Acreage is accounted for in the fire rescue inventory
7) Total building value (Item 3) divided by building square footage (Item 1)
8) Source: Appendix B

In addition to land and buildings, Volusia County emergency medical services impact fee inventory includes the necessary vehicles and equipment required to perform its services. As presented in Table III-2, the total vehicle and equipment value is approximately $23.4 million.

Table III-2

Emergency Medical Services Vehicle and Equipment Value

Description	Unit Count[1]	Average Unit Value[2]	Total Value[3]
Vehicle			
2008, Chevy Tahoe Suv, White - Unit #206	1	$55,000	$55,000
Ambulance	70	$202,687	$14,188,064
2012, Dodge Ram 4500 (Type 1 Ambulance 4X2)	1	$39,345	$39,345
2018 Ford Explorer Uv	2	$31,736	$63,472
2020 Chevy Tahoe	1	$36,680	$36,680
2021 Chevrolet Tahoe	1	$47,560	$47,560
2019 Transit 350 Wagon	1	$29,248	$29,248
Club Car	1	$15,000	$15,000
Gator Cx Utility Vehicle	1	$5,000	$5,000
Cushion Tire Forklift	1	$25,328	$25,328
Total Vehicle Value			**$14,504,697**

Table III-2 (Continued)

Emergency Medical Services Vehicle and Equipment Value

Description	Unit Count[1]	Average Unit Value[2]	Total Value[3]
Equipment			
Paper Shredder	1	$2,424	$2,424
8' Curved Portable Display	1	$2,851	$2,851
Mobile Radio	231	$6,351	$1,467,093
AED	12	$1,356	$16,272
Aeroclave Room Decontamination System	2	$16,370	$32,740
Alert System - St 23	1	$4,200	$4,200
Autopsy Saw	1	$2,500	$2,500
Autopulse	11	$5,830	$64,130
Bariatric Board	3	$2,300	$6,900
Bariatric Ramp & Winch System	1	$6,000	$6,000
Battery Charger	13	$2,000	$26,000
Camera Software St 1 W/ Housing	1	$2,000	$2,000
Central Vacuum Canister	1	$2,000	$2,000
Clearvue Video Laryngoscope Kit W/ Blades	40	$1,293	$51,720
Clordisys Lanturn Uv Disinfecting System	4	$4,536	$18,144
Clordisys Torch	2	$52,485	$104,970
Clorox 360 System	8	$4,200	$33,600
Computer	13	$2,044	$26,572
Cpr Assist Device	30	$13,778	$413,340
Cylinder Lift	2	$1,877	$3,754
Dell 3200 Mp Projector	1	$2,000	$2,000
Deluxe Child Crisis Manikin	1	$3,500	$3,500
Desk, Executive U Group	1	$1,500	$1,500
Scanner	3	$1,500	$4,500
Washer / Dryer	4	$1,100	$4,400
Generator	1	$45,000	$45,000
Laptop	130	$2,448	$318,202
Hp 800G1 Desktop	1	$2,000	$2,000
Hp Procurve Switch	1	$4,000	$4,000
Ice Machine	1	$5,500	$5,500
Ics Charging System	21	$1,500	$31,500
Immersion-Dissecting Table	1	$5,000	$5,000
IV Pump	4	$1,915	$7,660
Laser Printer 4500	1	$1,600	$1,600
Lectern, 42"	1	$2,000	$2,000
Locker - Stand Alone	8	$13,772	$110,176
Locker - Stand Alone Extension	3	$9,140	$27,420
Manikin - Anatomical Model	3	$2,800	$8,400
Manikin, 12-Lead Task Trainer	3	$4,700	$14,100

Table III-2 (Continued)

Emergency Medical Services Vehicle and Equipment Value

Description	Unit Count[1]	Average Unit Value[2]	Total Value[3]
Equipment			
Manikin, Crisis	2	$1,500	$3,000
Motion Tablet	3	$1,500	$4,500
Netboltz Rack Monitor 450	1	$1,500	$1,500
Opticom	60	$3,040	$182,400
Pansonic Toughbook	1	$5,210	$5,210
Patient Isolation Chamber	4	$5,210	$20,840
Patient Simulator	1	$55,800	$55,800
Patient Simulator/ Simulation Set	1	$10,300	$10,300
Power Load System	56	$23,006	$1,288,336
Proliant Server	2	$2,510	$5,020
Rack	3	$1,000	$3,000
Refrigerator/Freezer	1	$2,760	$2,760
Revolve Tablet	1	$1,500	$1,500
RFID Drug Safe	5	$2,575	$12,875
RFID Printer	1	$2,575	$2,575
Robotic Ambulance	1	$1,000	$1,000
Robotic Ambulance "Booboo"	1	$2,500	$2,500
Satellite Phone	4	$1,500	$6,000
Surveillance Camera Kit	4	$1,373	$5,492
Shredder	1	$1,500	$1,500
Sidestream-Capno 5 Co2 Module	1	$3,300	$3,300
Smartonline Ups	2	$1,500	$3,000
Sprayer, Decontamination	13	$4,115	$53,495
Stair Chair	55	$3,065	$168,575
Station Alert System	4	$3,100	$12,400
Stretcher	84	$19,442	$1,633,128
Superpower Charging Station	2	$2,000	$4,000
Switch	1	$1,500	$1,500
Swivel Mount For Cardiac Monitor	1	$1,500	$1,500
Tablet-Pcr	13	$2,350	$30,550
Toughbook	2	$2,350	$4,700
Transport Ventilator	4	$4,265	$17,060
Upright Freezer~For Vaccines	1	$10,425	$10,425
Ventilator	55	$6,210	$341,550
Wireless Access Point	1	$1,500	$1,500
Cardiac Monitor	63	$33,436	$2,106,441
Cardiac Monitor Mount	10	$2,000	$20,000
Total Equipment Value			**$8,914,900**
Total Vehicle & Equipment Value			**$23,419,597**

1) Source: Volusia County
2) Source: Total value (Item 3) divided by units (Item 1)
3) Source: Volusia County

Service Area, Benefit Zones and Demand Component

The service area for emergency medical services is countywide which also represents the appropriate benefit zone. In this technical study, the current 2022 weighted and functional population estimates are used. Because simply using weighted (permanent, plus weighted seasonal) population estimates does not fully address daily workers and visitors who also benefit from emergency medical services, the "functional" weekly 24-hour population approach is used to establish a common unit of demand across different land uses. Functional population accounts for residents, visitors, and workers traveling in and out of the service area throughout the day and calculates the presence of population at the different land uses during the day, which represents the demand component of the impact fee equation. Appendix A provides further detail on the population analysis conducted.

Level of Service

Volusia County is served by 3 EMS stations, which results in a current level of service (LOS) of 210,800 weighted seasonal residents per station or 0.005 stations per 1,000 weighted seasonal residents. In terms of functional residents, the County's achieved LOS is 192,000 functional residents per station or 0.005 stations per 1,000 functional residents. Impact fee calculations assume that the County will continue to provide this achieved LOS in the future.

Table III-3

Current Achieved Level of Service (2022)

Variable	2022 Population	
	Weighted	Functional
Emergency Medical Services		
Population[(1)]	632,409	576,208
Number of Stations[(2)]	3	3
Population per Station[(3)]	210,803	192,069
Achieved LOS (Stations per 1,000 Residents)[(4)]	**0.005**	**0.005**

1) Source: Appendix A, Table A-1 for weighted population, Table A-10 for functional population
2) Source: Table III-1
3) Population (Item 1) divided by the number of stations (Item 2)
4) Number of stations (Item 2) divided by the population (Item 1) multiplied by 1,000

Table III-4 compares the LOS achieved by other select Florida counties to the LOS of Volusia County. The LOS is displayed in terms of permanent population for 2021 for the service area of all entities, which is the most recent data available for all jurisdictions.

Table III-4
Level of Service Comparison (2021)

Jurisdiction	Service Area Population (2021)[1]	Number of Stations[2]	Residents per Station[3]	LOS (Stations per 1,000 Residents)[4]
Volusia County	**563,358**	**3**	**187,786**	**0.005**
Flagler County	119,662	4	29,916	0.033
Manatee County	411,209	18	22,845	0.044
Lake County	400,142	20	20,007	0.050
Collier County	382,680	24	15,945	0.063
Charlotte County	190,570	16	11,911	0.084

1) Source: BEBR: April 1, 2021 Final Population Estimates
2) Source: County/department websites
3) Service area population (Item 1) divided by the number of stations (Item 2)
4) Number of stations (Item 2) divided by the service area population (Item 1) multiplied by 1,000

Cost Component

The cost component of the study evaluates the cost of all capital assets, including buildings, land, vehicles and equipment. Table III-5 provides a summary of all capital costs, amounting to approximately $29.2 million or $9.7 million per EMS station. This $9.7 million value per station incorporates not only the value of a single emergency medical services station, but total asset value per station, including buildings, land, vehicles and equipment.

In addition, Table III-5 also provides the impact cost per functional resident, which is calculated by multiplying the total asset value per station of $9.7 million by the current LOS (stations per 1,000 functional residents) of 0.005 and dividing by 1,000. As shown, this calculation results in $49 per functional resident.

Table III-5

Total Impact Cost per Functional Resident

Variable	Figure	Percent of Total[9]
Building Value[1]	$5,645,200	19%
Land Value[2]	$167,400	1%
Vehicle & Equipment Value[3]	$23,419,597	80%
Total Asset Value[4]	**$29,232,197**	**100%**
Number of Owned Stations[5]	3	
Net Asset Value per Station[6]	**$9,744,066**	
Achieved LOS (Stations per 1,000 Functional Residents)[7]	0.005	
Total Impact Cost per Functional Resident[8]	**$48.72**	

1) Source: Table III-1
2) Source: Table III-1
3) Source: Table III-2
4) Sum of building value (Item 1), land value (Item 2), and vehicle/equipment value (Item 3)
5) Source: Table III-3
6) Total asset value (Item 4) divided by the number of owned stations (Item 5)
7) Source: Table III-3
8) Total asset value per station (Item 6) multiplied by the current achieved LOS (Item 7) divided by 1,000
9) Distribution of total asset value

Credit Component

To avoid overcharging new development, a review of the capital funding program for emergency medical services was completed. The purpose of this review was to determine any potential revenue credits generated by new development that are being used for expansion of capital facilities, land, vehicles, and equipment included in the inventory. It should be noted that the credit component does not include any capital renovation, maintenance, or operations expenses, as these types of expenditures cannot be funded with impact fee revenue.

Capital Expansion Credit

To calculate the capital expansion credit per functional resident, funding sources used for the past five years as well as those programmed for the next five years are reviewed. Between FY 2017 and FY 2026, the County has allocated an average annual non-impact fee funding of $122,300 toward emergency medical services capital facilities utilizing revenues from the EMS Fund. The EMS Fund is funded primarily through charges for the Department's services and is subsidized through the general fund. The annual capital expansion expenditures were divided by the average annual functional residents for the same period to calculate the average annual

capital expansion credit per functional resident. As presented in Table III-6, the result is approximately $0.21 per functional resident annually.

Table III-6

Capital Expansion Credit

Project Description[1]	FY 2017-21	FY 2021-26	Total
EMS Fund:			
Braun Ford-F450 Express Ambulance	$183,996	-	$183,996
2019 Transit 350 Wagon	$29,248	-	$29,248
All Terrain Vehicle with Trailer	-	$75,000	$75,000
Logistics Vehicle	-	$35,000	$35,000
Medical Ambulance Bus Year 5	-	$900,000	$900,000
Total	**$213,244**	**$1,010,000**	**$1,223,244**
Average Annual Expenditures[2]			**$122,324**
Average Annual Functional Population - Countywide Service Area[3]			**575,450**
Average Annual Expenditures per Resident[4]			**$0.21**

1) Source: Volusia County
2) Source: Average annual capital expenditures over the 10-year period
3) Source: Appendix A, Table A-1
4) Average annual capital expenditure (Item 2) divided by average annual population (Item 3)

Net Impact Cost

Table III-7 summarizes the net impact cost per functional resident, which is the difference between the cost component and the credit component. The resulting net impact cost is $45 per functional resident.

Table III-7

Net Impact Cost per Resident

Impact Cost/Credit Element	Figure
Impact Cost	
Total Impact Cost[1]	$48.72
Revenue Credit	
Revenue Credit [2]	$0.21
Capitalization Rate	2.50%
Capitalization Period (in years)	25
Total Capital Improvement Credit per Functional Resident[3]	$3.87
Net Impact Cost	
Net Impact Cost per Resident[4]	**$44.85**

1) Source: Table III-5
2) Source: Table III-6
3) Average annual capital improvement credit per functional resident (Item 2) over a capitalization rate of 2.5% for 25 years. The capitalization rate estimate was provided by Volusia County.
4) Total impact cost per functional resident (Item 1) less the total capital improvement credit per functional resident (Item 3)

Calculated Impact Fee Schedule

Table III-8 presents the calculated emergency medical services impact fee schedule for Volusia County for both residential and non-residential land uses, based on the net impact cost per functional resident previously presented in Table III-7.

Table III-8

Calculated Emergency Medical Services Impact Fee Schedule

ITE LUC	Land Use	Impact Unit	EMS	
			Functional Residents per Unit[1]	Calculated Impact Fee[2]
	RESIDENTIAL:			
210/215/ 220/ 221/ 222/240	1,200 sf & Under	du	1.28	**$57.41**
	1,201 sf to 1,700 sf	du	1.47	**$65.93**
	1,701 sf to 2,200 sf	du	1.56	**$69.97**
	2,201 sf to 3,000 sf	du	1.64	**$73.55**
	3,001 sf & Over	du	1.80	**$80.73**
	TRANSIENT, ASSISTED, GROUP:			
310	Hotel	room	1.39	**$62.34**
320	Motel	room	1.22	**$54.72**
620	Nursing Home	1,000 sf	2.40	**$107.64**
	RECREATIONAL:			
411	Public Park	acre	0.05	**$2.24**
430	Golf Course	hole	0.86	**$38.57**
445	Movie Theater	1,000 sf	3.96	**$177.61**
	INSTITUTIONS:			
560	Church	1,000 sf	0.41	**$18.39**
565	Day Care Center	1,000 sf	0.81	**$36.33**
	MEDICAL:			
610	Hospital	1,000 sf	1.31	**$58.75**
	OFFICE:			
710	General Office	1,000 sf	0.97	**$43.50**
714	Corporate Headquarters Bldg	1,000 sf	0.96	**$43.06**
720	Medical Office 10,000 sf & Under	1,000 sf	1.22	**$54.72**
	Medical Office greater than 10,000 sf	1,000 sf	1.75	**$78.49**
	RETAIL:			
822	Retail/Shopping Center less than 40,000 sflga	1,000 sfgla	2.09	**$93.74**
821	Retail/Shopping Center 40,000 to 150,000 sfgla	1,000 sfgla	2.59	**$116.16**
820	Retail/Shopping Center greater than 150,000 sfgla	1,000 sfgla	1.42	**$63.69**
840/841	New/Used Automobile Sales	1,000 sf	1.58	**$70.86**
849	Tire Superstore/Auto Repair	bay	1.71	**$76.69**
850	Supermarket	1,000 sf	2.46	**$110.33**
862	Home Improvement Superstore	1,000 sf	1.94	**$87.01**
880/881	Pharmacy/Drug Store with and w/out Drive-Thru	1,000 sf	1.85	**$82.97**
890	Furniture Store	1,000 sf	0.32	**$14.35**
	SERVICES:			
911	Bank/Savings w/out Drive-Thru	1,000 sf	1.17	**$52.47**
912	Bank/Savings w/Drive-Thru	1,000 sf	1.48	**$66.38**
931	Fine Dining/Quality Restaurant	1,000 sf	5.37	**$240.84**
932	High-Turnover (Sit-Down) Restaurant	1,000 sf	5.07	**$227.39**
934	Fast Food Resturant w/Drive-Thru	1,000 sf	9.16	**$410.83**
941	Quick Lubrication Vehicle Shop	bay	1.61	**$72.21**

Table III-8 (Continued)

Calculated Emergency Medical Services Impact Fee Schedule

ITE LUC	Land Use	Impact Unit	EMS	
			Functional Residents per Unit[1]	Calculated Impact Fee[2]
	SERVICES:			
943	Automobile Parts and Service Center	1,000 sf	1.08	**$48.44**
944	Gas Station w/Convenience Store less than 2,000 sq ft	fuel pos.	1.47	**$65.93**
945	Gas Station w/Convenience Store 2,000 to 5,499 sq ft	fuel pos.	2.31	**$103.60**
	Gas Station w/Convenience Store 5,500+ sq ft	fuel pos.	3.02	**$135.45**
	INDUSTRIAL:			
110	General Industrial	1,000 sf	0.50	**$22.43**
140	Manufacturing	1,000 sf	0.58	**$26.01**
150	Warehouse	1,000 sf	0.12	**$5.38**
151	Mini-Warehouse	1,000 sf	0.05	**$2.24**

1) Source: Appendix A, Table A-11 for residential and transient, assisted, group land uses and Table A-13 for non-residential land uses
2) Net impact cost per functional resident from Table III-7 multiplied by the functional residents per unit (Item 1) for each land use

Impact Fee Schedule Comparison of Select Land Uses

As part of the work effort in developing Volusia County impact fee schedule, the County's calculated impact fee schedule is compared to the adopted fee schedules of other select Florida counties. Table II-9 presents this comparison.

Table III-9

Emergency Medical Services Impact Fee Schedule Comparison

Land Use	Unit[2]	Volusia County Calculated [3]	Brevard County[4]	Citrus County[5]	Collier County[6]	Flagler County[7]	Polk County[8]
Date of Last Update		**2022**	2005	2021	2016	2021	2019
Assessed Portion of Calculated[1]		**N/A**	100%	100%	100%	100%	100%
Residential:							
Single Family (2,000 sq ft)	du	**$70**	$39	$62	$142	$62	$76
Multi-Family (1,300 sq ft)	du	**$66**	$35	$48	$68	$32	$56
Non-Residential:							
Light Industrial	1,000 sf	**$22**	N/A	$16	$54	$18	$21
Genreal Office (50,000 sq ft)	1,000 sf	**$44**	$18	$37	$93	$37	$49
Retail/Shopping Center (125,000 sq ft)	1,000 sfgla	**$116**	$54	$78	$192	$97	$78
Bank/Savings w/Drive-Trhu	1,000 sf	**$52**	$44	$78	$179	$55	$78
Fast Food Restaurant w/Drive-Thru	1,000 sf	**$411**	$230	$78	$699	$363	$78

1) Represents the portion of the maximum calculated fee for each respective county that is actually charged. Fees may have been lowered/increased through annual indexing or policy discounts. Does not account for moratorium/suspensions.
2) du=dwelling unit
3) Source: Table III-8
4) Source: Brevard County Planning and Development Impact Fees
5) Source: Citrus County Land Development Division Impact Fees.
6) Source: Collier County Growth Management Impact Fees
7) Source: Flagler County Growth Management
8) Source: Polk County Building Department

Parks and Recreation

This section addresses the analysis used in developing the parks and recreation impact fee. Several elements addressed in the section include:

- Land and Recreation Facilities Inventory
- Service Area and Population
- Level of Service
- Cost Component
- Credit Component
- Net Impact Cost
- Calculated Impact Fee Schedule
- Impact Fee Schedule Comparison of Select Land Uses
- Parks and Recreation Impact Fee Benefit Zones

These elements are summarized throughout this section.

Park Land and Recreation Facilities Inventory

According to information provided by Volusia County, the County's land and recreation facilities inventory utilized for impact fee purposes includes 54 parks totaling over 1,700 acres. The inventory excludes park land that is not owned by the County, parks that are operated by another entity and generate revenue, and local parks located within cities. Prior to this updated study, the parks and recreation impact fees were based only on local and district parks. In this updated study, coastal parks are also included for the County Council's consideration. Table IV-1 presents a summary of the inventory included in the parks and recreation facilities impact fee.

Table IV-1

Park Land and Recreation Facility Inventory

Name	Classification	Total Acres	Developed Acres	Barn/Stable	BM Park	Boat Ramp	Boat Ramp Parking	Camp Sites	Civic Center	Concession	Caretaker Housing	Court					
												Tennis	Basketball (full)	Basketball (half)	Racquetball (lit)	Shuffleboard	Volleyball
Unit		acres	acres	barns	parks	ramps	spaces	sites	sq. ft.	sq. ft.	sq. ft.	courts	courts	courts	courts	courts	courts
Al Weeks Sr North Shore Park	Coastal	1.86	1.86														
Argosy Beach Park	Coastal	0.62	0.62														
Barkley Square Dog Park	Local	12.59	0.89														
Beck Ranch	District	268.17	10.71								3,000						2
Blue Lake Boat Ramp	Local	0.12	0.21			1	2										
Briggs Drive Fishing Dock	Local	0.04	0.04														
Candace R Strawn/Lake Dias Park	District	35.55	4.93			1	20	2									
Cardinal Drive Beach Park	Coastal	1.80	1.80														
Chuck Lennon Park	District	196.65	28.92							492		2	2		2		
Colby-Alderman Park	District	122.62	4.15				12										1
Cypress Lake Park	Local	9.08	1.64			1	5						1				
Dahlia Park	Coastal	0.87	0.87														
Ed Stone Park	Local	7.94	3.79			1	50										
Edwin W. Peck Sr. Park	Coastal	1.61	1.61														
Frank Rendon Park	Coastal	2.00	2.00														
Gemini Springs Park	District	211.76	21.92	1				11			1,050						
Glencoe Park	District	24.70	24.70														
Green Springs Park	District	31.29	2.72														
Hester Park	Local	3.91	3.08									1	1			0	
Highbridge Park	Local	2.14	1.40			1	25			400							
Hiles Blvd. Beach Park	Coastal	2.00	2.00			1											
Hope Place Play Yard	Local	3.31	3.31														
James Ormond Tomb Park	Local	10.27	0.62														
Lake Ashby Boat Ramp	Local	0.25	0.25			1	8										
Lake Ashby Park	District	71.16	10.25					11			1,000						1
Lake Beresford Park	District	211.50	38.11														
Lake George Park	Local	3.92	0.37														
Lake Louise Boat Ramp	Local	1.00	1.00			1	5										
Lake Monroe Park	District	33.19	10.07			1	46	25									1
Lemon Bluff Boat Ramp	Local	1.00	0.40			1	27										
Mariner's Cove	District	49.39	12.62			1	10				1,000	1	1				
Mary Mcleod Bethune Park	Coastal	4.00	4.00									1	1				1
Michael Crotty Bicentennial Park	District	37.36	7.96									4	1	4	1	1	
Osteen Civic Center	Local	1.23	0.33						1,829								
PFC Emory L Bennett Park	District	208.59	34.47														
Pooser Park	Local	1.90	0.09														
River Breeze Park	District	34.86	5.09			1	87	1									
Robert Strickland Park	District	37.23	12.76		1					100			1				
Robert Strickland Shooting Range	Local	11.16	4.04														

Table IV-1 (Continued)

Park Land and Recreation Facility Inventory

Name	Classification	Dock		Dog Park	Field				Office (sq. ft.)	Pavilion	Pier	Playground Area	Restrooms	Shed	Total Parking
		Dock	Floating		Baseball/Softball /Little League (lit)	Baseball/Softball /Little League	Football/ Soccer (lit)	Football/ Soccer							
Unit		linear foot	docks	parks	fields	fields	fields	fields	sq. ft.	pavilions	piers	playgrounds	sq. ft.	sq. ft.	spaces
Al Weeks Sr North Shore Park	Coastal												805		29
Argosy Beach Park	Coastal														42
Barkley Square Dog Park	Local			1					1,000				144		37
Beck Ranch	District			1				2	2,800	3		1	616	230	65
Blue Lake Boat Ramp	Local														5
Briggs Drive Fishing Dock	Local	20									1				2
Candace R Strawn/Lake Dias Park	District									1		1	702		50
Cardinal Drive Beach Park	Coastal														124
Chuck Lennon Park	District				6		2		1,312	2		2	913	600	311
Colby-Alderman Park	District	25								2	1	1	200		25
Cypress Lake Park	Local									1		1			20
Dahlia Park	Coastal									2		1	705		60
Ed Stone Park	Local	294								1	1		684		125
Edwin W. Peck Sr. Park	Coastal											1	705		102
Frank Rendon Park	Coastal									4		1	2,014		130
Gemini Springs Park	District	225		1					400	7	1	1	3,128	4,400	188
Glencoe Park	District														
Green Springs Park	District									1		1	1,050	120	28
Hester Park	Local					1								100	25
Highbridge Park	Local								1,064	3	1		448		25
Hiles Blvd. Beach Park	Coastal												1,690		233
Hope Place Play Yard	Local														
James Ormond Tomb Park	Local									1		1	150		25
Lake Ashby Boat Ramp	Local														8
Lake Ashby Park	District	24,133								2	1	1	360	315	42
Lake Beresford Park	District									2		1	875	120	20
Lake George Park	Local									2	1				10
Lake Louise Boat Ramp	Local										1				5
Lake Monroe Park	District	804	1						240	5	1	1	3,612	326	113
Lemon Bluff Boat Ramp	Local														28
Mariner's Cove	District	1,722	1					1		2	1	1	459	252	87
Mary Mcleod Bethune Park	Coastal	1,908							150	5	1	1	2,675		132
Michael Crotty Bicentennial Park	District	140		1		1		1	1,000	6	1	1	638	288	94
Osteen Civic Center	Local												224		28
PFC Emory L Bennett Park	District				6		2		432	1		1	3,698	481	229
Pooser Park	Local														2
River Breeze Park	District	410								6	1	1	435	288	60
Robert Strickland Park	District				2				1,800			1	400	900	25
Robert Strickland Shooting Range	Local								1,772				448	288	73

Table IV-1 (Continued)
Park Land and Recreation Facility Inventory

Name	Classification	Total Acres	Developed Acres	Barn/Stable	BM Park	Boat Ramp	Boat Ramp Parking	Camp Sites	Civic Center	Concession	Caretaker Housing	Court					
												Tennis	Basketball (full)	Basketball (half)	Racquetball (lit)	Shuffleboard	Volleyball
Roberta Drive Fishing Dock	Local	0.19	0.03														
San Jose Fishing Dock	Local	0.02	0.02														
Seabridge Riverfront Park	Local	2.15	0.21														
Seville Village Park	Local	1.19	0.25										1				
Shell Harbor Park	Local	9.00	9.00			1	33										
Spring Hill Park	Local	4.33	0.66											1			
Spruce Creek Park	District	23.00	7.90					4			2,500						
Sugar Mill Ruins	Local	15.08	1.02								1,750						
Sun Splash Park	Coastal	4.00	4.00														
Sylvester Bruten Park	Local	1.41	0.17														
Tomoka Boat Ramp	Local	0.15	0.05			1	3										
Tom Renick Park	Coastal	2.00	2.00														
Toronita Avenue Beach Park	Coastal	2.00	2.00														
University Blvd. Beach Park	Coastal	1.00	1.00														
Winterhaven Park	Coastal	1.00	1.00														

Name	Classification	Total Acres	Developed Acres	Barn/Stable	BM Park	Boat Ramp	Boat Ramp Parking	Camp Sites	Civic Center	Concession	Caretaker Housing	Court					
												Tennis	Basketball (full)	Basketball (half)	Racquetball (lit)	Shuffleboard	Volleyball
Local	25	103.38	32.87	0	0	9	158	0	1,829	400	1,750	1	3	1	0	0	0
District	16	1,597.02	237.28	1	1	4	175	54	0	592	8,550	7	5	4	3	1	5
Coastal	13	24.76	24.76	0	0	1	0	0	0	0	0	1	1	0	0	0	1
Total	**54**	**1,725.16**	**294.91**	**1**	**1**	**14**	**333**	**54**	**1,829**	**992**	**10,300**	**9**	**9**	**5**	**3**	**1**	**6**

Table IV-1 (Continued)
Park Land and Recreation Facility Inventory

Name	Classification	Dock		Dog Park	Field				Office (sq. ft.)	Pavilion	Pier	Playground Area	Restrooms	Shed	Total Parking
		Dock	Floating		Baseball/Softball /Little League (lit)	Baseball/Softball /Little League	Football/ Soccer (lit)	Football/ Soccer							
Roberta Drive Fishing Dock	Local	20									1				2
San Jose Fishing Dock	Local	13									1				1
Seabridge Riverfront Park	Local	483									1				5
Seville Village Park	Local									1		1			25
Shell Harbor Park	Local	112								1			184		33
Spring Hill Park	Local											3	120		20
Spruce Creek Park	District								1,000	1	1		890	1,207	
Sugar Mill Ruins	Local												136	120	8
Sun Splash Park	Coastal									3		2	2132		162
Sylvester Bruten Park	Local									3		1			4
Tomoka Boat Ramp	Local														5
Tom Renick Park	Coastal									3		1	2,226		56
Toronita Avenue Beach Park	Coastal		1										1,060		160
University Blvd. Beach Park	Coastal														100
Winterhaven Park	Coastal									3			1,690		80

Name	Classification	Dock		Dog Park	Field				Office (sq. ft.)	Pavilion	Pier	Playground Area	Restrooms	Shed	Total Parking
		Dock	Floating		Baseball/Softball /Little League (lit)	Baseball/Softball /Little League	Football/ Soccer (lit)	Football/ Soccer							
Local	25	942	0	1	0	1	0	0	3,836	13	8	7	2,538	508	521
District	16	27,459	2	3	14	1	4	4	8,984	41	8	15	17,976	9,527	1,337
Coastal	13	1,908	1	0	0	0	0	0	150	20	1	7	15,702	0	1,410
Total	**54**	**30,309**	**3**	**4**	**14**	**2**	**4**	**4**	**12,970**	**74**	**17**	**29**	**36,216**	**10,035**	**3,268**

Source: Volusia County

Service Area and Demand Component

Based on discussions with the County and amenities included at each park, it was determined that the service area of district and coastal parks is countywide and the service area of the local parks is the unincorporated portion of the county. Appendix A, Table A-1, provides the estimated population for 2022 and the projected population through 2030. Parks and recreation impact fees are charged only to residential land uses. Given this, the permanent population per housing unit is used to measure demand from each residential land use, which is presented in Appendix A.

Level of Service

The current LOS for all County-owned and maintained parks is presented in Table IV-2. To determine the current LOS, the total acreage of each park type is divided by the service area population for 2022 and multiplied by 1,000. As shown, the total achieved LOS in Volusia County is 3.73 acres per 1,000 permanent residents, while the adopted LOS standard is 7 acres per 1,000 residents. While the current achieved LOS measures the available inventory, adopted LOS standard indicates the LOS the County intends to provide going forward. For impact fee purposes, the lower of the two measures is used to not overcharge new development. Given this, the achieved LOS of 3.73 total acres per 1,000 permanent residents is utilized in the calculation of the parks and recreation facilities impact fee.

Table IV-2

Current Level of Service (2022)

Park Classification	Acres[1]	Achieved LOS[2]	Adopted LOS Standard[3]	Used in the Study[4]
Total Acres				
Local	103.38	0.89	2.00	0.89
District & Coastal	1,621.78	2.84	5.00	2.84
Total	**1,725.16**	**3.73**	**7.00**	**3.73**
Developed Acres				
Local	32.87	0.28		
District & Coastal	262.04	0.46		
Total	**294.91**	**0.74**		
2022 Service Area Population - Unincorporated[5]		116,720		
2022 Countywide Population[6]		570,400		

1) Source: Table IV-1
2) Acres for each park type (Item 1) divided by 2022 population (Items 5 and 6) multiplied by 1,000
3) Source: Volusia County Comprehensive Plan, Chapter 13-Recreation and Open Space Element
4) Impact fee calculations use the lower of the achieved LOS vs. the adopted LOS standard
5) Source: Appendix A, Table A-1
6) Source: Appendix A, Table A-1

Table IV-3 presents a comparison of the parks and recreation adopted LOS standards of other select Florida counties to Volusia County's adopted LOS standard in terms of acreage per population. As shown, the County's adopted LOS standard is in the mid-range of the adopted LOS standards of the other counties reviewed.

Table IV-3

Level of Service Comparison

Jurisdiction	LOS Standard (Acres per 1,000 Residents)
Putnam County[1]	2.00
Citrus County[2]	3.00
Pasco County[3]	3.40
Collier County[4]	3.90
Volusia County[5]	**7.00**
Orange County[6]	7.50
Osceola County[7]	10.00
Lake County[8]	10.00
St. Johns County[9]	28.00
Flagler County[10]	34.00

1) Source: Putnam County Comprehensive Plan, Exhibit FF, Recreation and Open Space Element, Policy F.1.3.2
2) Source: Citrus County Comprehensive Plan, Recreation and Open Space Element, Policy 2.1.1. Adopted LOS standards also include 10 acres for Federal/State provided regional parks.
3) Source: 2025 Comprehensive Plan, Pasco County Florida, Chapter 5 "Recreation and Open Space Goals Objectives, and Policies," Table 5-1
4) Source: Collier County Growth Management Plan, Capital Improvement Element, Policy 1.5G
5) Source: Volusia County Comprehensive Plan, Chapter 13 "Parks and Recreation Element"
6) Source: Orange County Comprehensive Plan 2010-2030, "Destination 2030," Recreation Element Goals, Objectives, and Policies, Policy R.1.1.1
7) Source: Osceola County Comprehensive Plan, Parks & Recreational Facilities Data Analysis
8) Source: Lake County 2030 Planning Horizon, Data, Inventory & Analysis, Parks and Recreation Element
9) Source: St. Johns County Comprehensive Plan Goals, Objectives & Policies, Provision of Recreation and Open Space to meet County Growth, Policy F.1.3.1
10) Source: Flagler County Comprehensive Plan 2010-2035, Recreation and Open Space Element, Policy H.1.1.1

Cost Component

The capital cost associated with parks and recreation facilities consists of two components: the cost of purchasing and developing land and cost of recreational facilities. The following paragraphs address park land and recreation facility value estimates.

Land Cost

The park land value per acre for the County's park inventory is calculated based on recent land purchases, value of current park land by type, vacant land sales of similar size parcels over the past five years obtained from the Volusia County Property Appraiser's database, and discussions with Volusia County representatives. This analysis resulted in an estimated average land value

of $30,000 per acre for local parks, $40,000 per acre for district parks, and $1,000,000 per acre for coastal parks as presented in Table IV-4. Appendix B provides further detail regarding the land value estimates.

The cost of land for parks and recreation facilities includes more than just the purchase cost of the land. Landscaping, site improvement, and parking costs are also considered. These costs can vary greatly, depending on the type of park. Based on information provided by Volusia County and other Florida jurisdictions, the estimated cost for landscaping, site preparation, and parking is $40,000 per acre for local parks and district parks. For coastal parks, the landscaping, site preparation and irrigation cost per acre is included in the recreational facility cost estimates. These figures result in overall land value of $62 per resident for local parks and $267 per resident for district and coastal parks.

Table IV-4

Land Cost per Resident

Variable/Calculation Step	Park Type			
	Local	District	Coastal	District & Coastal Total
Land Value				
Land Purchase Cost per Acre[1]	$30,000	$40,000	$1,000,000	
Landscaping, Site Prep., and Irrigation Cost per Acre[2]	$40,000	$40,000	N/A	
Total Land Cost per Acre[3]	$70,000	$80,000	$1,000,000	
Total Acres[4]		1,597.02	24.76	1,621.78
Total Land Value[5]		$127,761,600	$24,760,000	$152,521,600
Total Land Value per Acre[6]				$94,046
LOS Used in the Study[7]	0.89			2.84
Total Land Value per Resident[8]	**$62**			**$267**

1) Source: Appendix B
2) Source: Based on information provided by Volusia County
3) Land purchase cost per acre (Item 1) plus landscaping, site preparation and irrigation cost per acre (Item 2). This cost for coastal parks is included under the facility cost shown in Table IV-5
4) Source: Table IV-1
5) Total land cost per acre (Item 3) multiplied by total acres (Item 4)
6) Total land value (Item 5) divided by total acres (Item 4)
7) Source: Table IV-2
8) Total land value per acre (Item 6) multiplied by LOS used in the study (Item 7)

Recreational Facility Value

To estimate current recreational facility value, multiple sources were reviewed to determine the unit cost of each recreational facility type, including insured values of the facilities, recent construction information, recent cost information obtained for similar facilities from other jurisdictions and input from Volusia County representatives.

In addition to the construction cost of recreational facilities, the architectural, engineering and inspection (AE&I) costs associated with developing this infrastructure are also included. The AE&I cost is estimated at 15 percent of the construction cost based on estimates obtained from Volusia County. This percentage is also within the range of cost figures obtained from other jurisdictions.

As shown in Table IV-5, the total recreational facility value is approximately $19.6 million for local parks, $22 million for district parks, and $24.8 million for coastal parks. This equates to an average facility value of $168 per resident, $39 per resident, and $43 per resident respectively.

Table IV-5

Recreational Facility Value per Resident

Variable/Calculation Step	Park Type		
	Local	District	Coastal
Recreational Facility Value			
Facility Cost per Total Acre[(1)]	$165,000	$12,000	$1,000,000
Architectural, Design, Inspection Cost per Acre[(2)]	$24,750	$1,800	N/A
Total Recreational Facility Cost per Acre[(3)]	$189,750	$13,800	$1,000,000
Total Acres[(4)]	103.38	1,597.02	24.76
Total Recreational Facility Value[(5)]	$19,616,355	$22,038,876	$24,760,000
2022 Population[(6)]	116,720	570,400	570,400
Total Recreational Facility Value per Resident[(7)]	**$168**	**$39**	**$43**

1) Source: Appendix B
2) Source: Facility cost per acre (Item 1) multiplied by 15 percent (based on information provided by Volusia County and other Florida jurisdictions). This cost element for coastal parks is included in the facility cost.
3) Sum of facility cost per total acre (Item 1) and architectural, design, inspection cost per acre (Item 2)
4) Source: Table IV-1
5) Total recreational facility cost per acre (Item 3) multiplied by total acres (Item 4)
6) Source: Appendix A-1
7) Total recreational facility value (Item 5) divided by the 2022 population (Item 6)

Total Impact Cost per Resident

Table IV-6 presents the total park land and recreation facilities value per resident as well as the distribution of asset value. As presented, the total park land and recreation facilities impact cost amounts to $230 per resident for local parks and $349 for district and coastal parks.

Table IV-6

Total Impact Cost per Resident

Variable	Local Parks		District & Coastal Parks	
	Cost per Resident	% of Total[4]	Cost per Resident	% of Total[4]
Per Resident				
Total Land Cost[1]	$62.00	27%	$267.00	77%
Recreational Facility Cost[2]	$168.00	73%	$82.00	23%
Total Impact Cost[3]	**$230.00**	**100%**	**$349.00**	**100%**

1) Source: Table IV-4
2) Source: Table IV-5
3) Sum of land and facility and equipment cost per resident (Items 1 and 2)
4) Percentage of total parks and recreation facility cost per resident

Credit Component

To avoid overcharging new development for the capital cost of providing parks and recreation services, a review of the capital funding program for the parks and recreation program was completed. The purpose of this review is to estimate any future revenues generated by new development, other than impact fees, which will be used to fund the expansion of capital facilities and land related to the Volusia County's parks and recreation program. As mentioned previously, the credit component does not include any capital renovation, maintenance, or operational expenses, as these types of expenditures do not add capacity and should not be considered for impact fee credit.

Capital Expansion Credit

Separate capital expenditure credits per resident were calculated for local and district/coastal parks, based on non-impact fee revenue expended for capital expansion projects for each type of park over the past five years and programmed for next five years. To calculate the capital expenditure per resident, the average annual capital expansion expenditures for each type of park are divided by the average residents for the same period.

Between FY 2017 and FY 2026, Volusia County spent or plans to spend a total of $2.8 million for capital expansion of local parks, resulting in an average annual capital expansion expenditure of $281,100 and approximately $2 per resident per year.

Similarly, over the same ten-year period, Volusia County spent or plans to spend a total of $10.2 million of beach access fee revenues, general fund revenues, and grants resulting in an average annual capital expansion expenditure of approximately $1 million. As presented in Table IV-8,

the average annual capital expansion expenditure per resident for district and coastal parks during this period is less than $2 per resident.

Table IV-7

Capital Expansion Projects (Local Parks)

Project Description[1]	FY 2017-21	FY 2022-26	Total
Grants / Other:			
Shell Harbor Park	$1,250,233	-	$1,250,233
Lemon Bluff Park	$1,414,459	-	$1,414,459
Highbridge Park Restroom	$146,260	-	$146,260
Total -- Expenditures Funded with Grants / Other	**$2,810,952**	**$0**	**$2,810,952**
Average Annual Expenditures[2]			**$281,095**
Average Annual Population - Unincorporated Service Area[3]			**116,817**
Average Annual Expenditures per Resident[4]			**$2.41**

1) Source: Volusia County
2) Average annual capital expenditures over the 10-year period
3) Source: Appendix A, Table A-1
4) Average annual capital expenditure (Item 2) divided by the average annual population (Item 3)

Table IV-8

Capital Expansion Projects (District and Coastal Parks)

Project Description[1]	FY 2017-21	FY 2022-26	Total
Beach Access Fee			
Argosy Off Beach Parking	$572,364	-	$572,364
Off Beach Parking - Cardinal West	$2,058,191	-	$2,058,191
Hiles Parking Development	$328,626	-	$328,626
Off Beach Parking - Dahlia Ave Park	$900,872	-	$900,872
Off Beach Parking - Land[2]	-	$2,073,411	$2,073,411
Off Beach Parking-Edwin W. Peck Sr. Park	$1,698,752	-	$1,698,752
Off-Beach Parking - Sun & Surf Park	$625,000	-	$625,000
Total -- Expenditures Funded with Beach Access Fee	**$6,183,805**	**$2,073,411**	**$8,257,216**
General Fund			
Mary McLeod Bethune Park Upgrades	$39,200	$259,700	$298,900
Sun Splash Park Tot Playground	$45,000	-	$45,000
Winterhaven Park Playground	-	$50,000	$50,000
Total -- Expenditures Funded with General Fund	**$84,200**	**$309,700**	**$393,900**
Grants / Other:			
Hiles Parking Development	$302,925	-	$302,925
Veterans Memorial Plaza	-	$1,200,000	$1,200,000
Total -- Expenditures Funded with Grants / Other	**$302,925**	**$1,200,000**	**$1,502,925**
Grand Total	**$6,570,930**	**$3,583,111**	**$10,154,041**
Average Annual Expenditures[3]			**$1,015,404**
Average Annual Population - Countywide Service Area[4]			**560,812**
Average Annual Expenditures per Resident[5]			**$1.81**

1) Source: Volusia County
2) This is contingent upon council direction and may be used construction overages due to inflation or as due diligence for future acquisitions.
3) Average annual capital expenditures over the 10-year period
4) Source: Appendix A, Table A-1
5) Average annual capital expenditure (Item 2) divided by average annual population (Item 3)

Net Impact Cost

The net parks and recreational facilities impact cost per resident is the difference between the cost component and the credit component. Table IV-9 and Table IV-10 summarize the calculation of the net parks and recreation cost per resident for local parks and district/coastal parks, respectively. As presented, the net impact cost amounts to approximately $186 per resident for local parks and $316 per resident for district and coastal parks.

Table IV-9

Net Impact Cost per Resident (Local Parks)

Impact Cost/Credit Element	Impact Cost	Revenue Credit
Impact Cost		
Total Impact Cost per Resident[1]	**$230.00**	-
Revenue Credit		
Avg. Annual Capital Expansion Credit per Resident[2]		$2.41
- Capitalization Rate		2.5%
- Capitalization Period (years)		25
Total Credit per Resident[3]		**$44.40**
Net Impact Cost		
Net Impact Cost per Resident[4]		**$185.60**

1) Source: Table IV-6
2) Source: Table IV-7
3) Average annual capital expansion credit per resident (Item 2) over a capitalization of 2.5% of 25 years. The capitalization rate estimate was provided by Volusia County.
4) Total impact cost per resident (Item 1) less total credit per resident (Item 2)

Table IV-10

Net Impact Cost per Resident (District and Coastal Parks)

Impact Cost/Credit Element	Impact Cost	Revenue Credit
Impact Cost		
Total Impact Cost per Resident[(1)]	**$349.00**	-
Revenue Credit		
Avg. Annual Capital Expansion Credit per Resident[(2)]		$1.81
- Capitalization Rate		2.5%
- Capitalization Period (years)		25
Total Credit per Resident[(3)]		**$33.35**
Net Impact Cost		
Net Impact Cost per Resident[(4)]		**$315.65**

1) Table IV-6
2) Table IV-8
3) Average annual capital expansion credit per resident (Item 2) over a capitalization rate of 2.5% for 25 years. The capitalization rate estimate was provided by Volusia County.
4) Total impact cost per resident (Item 1) less total credit per resident (Item 2)

Calculated Impact Fee Schedules

Tables IV-11 and IV-12 present the calculated parks and recreation facilities impact fee schedules for Volusia County for residential land uses, based on the net impact cost per resident previously presented in Tables IV-9 and IV-10. Also presented is a comparison to the County's current adopted fees and percent change from the current fee.

Table IV-11

Calculated Parks and Recreation Facilities Impact Fee Schedule (Local Parks)

ITE LUC	Residential Land Use	Impact Unit	Residents per Unit[1]	Local Parks			
				Net Impact Cost per Resident [2]	Calculated Impact Fee[3]	Current Adopted Fee[4]	% Change from Adopted[5]
RESIDENTIAL:							
210/215/ 220/221/ 222/241	1,200 sf & Under	du	1.70	**$185.60**	**$316**	$245	29%
	1,201 sf to 1,700 sf	du	1.95	**$185.60**	**$362**	$245	47%
	1,701 sf to 2,200 sf	du	2.07	**$185.60**	**$384**	$245	56%
	2,201 sf to 3,000 sf	du	2.17	**$185.60**	**$403**	$245	64%
	3,001 sf & Over	du	2.38	**$185.60**	**$442**	$245	80%

1) Source: Appendix A, Table A-4
2) Source: Table IV-9
3) Net impact cost per resident (Item 2) multiplied by residents per unit (Item 1) for each land use
4) Source: Volusia County
5) Percent change from the adopted impact fee (Item 4) to the calculated impact fee (Item 3)

Table IV-12

Calculated Parks and Recreation Facilities Impact Fee Schedule (District/Coastal Parks)

ITE LUC	Residential Land Use	Impact Unit	Residents per Unit[1]	District & Coastal Parks			
				Net Impact Cost per Resident [2]	Calculated Impact Fee[3]	Current Adopted Fee[4]	% Change from Adopted[5]
RESIDENTIAL:							
210/215/ 220/221/ 222/241	1,200 sf & Under	du	1.67	**$315.65**	**$527**	$351	50%
	1,201 sf to 1,700 sf	du	1.92	**$315.65**	**$606**	$351	73%
	1,701 sf to 2,200 sf	du	2.04	**$315.65**	**$644**	$351	84%
	2,201 sf to 3,000 sf	du	2.14	**$315.65**	**$675**	$351	92%
	3,001 sf & Over	du	2.35	**$315.65**	**$742**	$351	111%

1) Source: Appendix A, Table A-2
2) Source: Table IV-10
3) Net impact cost per resident (Item 2) multiplied by residents per unit (Item 1) for each land use
4) Source: Volusia County
5) Percent change from the adopted impact fee (Item 4) to the calculated impact fee (Item 3)

Impact Fee Schedule Comparison of Select Land Uses

As part of the work effort in updating Volusia County's parks and recreation impact fee schedule, the County's calculated and adopted impact fee schedule was compared to the adopted fee schedules of select Florida counties. Table IV-13 presents this comparison

Table IV-13

Parks and Recreation Facilities Impact Fee Schedule Comparison of Select Land Uses

Land Use	Unit[2]	Volusia County						Citrus County[5]	Collier County[6]			Flagler County[7]	Lake County[8]
		Calculated[3]			Current Adopted[4]								
		Local	District & Coastal	Total	Local	District	Total		Community	Regional	Total		
Date of Last Update		2022			2001			2021	2016			2021	2003
Assessed Portion of Calculated[1]		N/A			N/A			100%	100%			100%	95%
Residential:													
Single Family (2,000 sq ft)	du	$384	$644	**$1,028**	$245	$351	**$596**	$661	$934	$2,694	**$3,628**	$304	$222
Multi-Family (1,300 sq ft)	du	$362	$606	**$968**	$245	$351	**$596**	$509	$455	$1,230	**$1,685**	$122	$171
Mobile Home (1,300 sq ft)	du	$362	$606	**$968**	$245	$351	**$596**	$628	$716	$2,145	**$2,861**	$284	$177

Land Use	Unit[2]	Volusia County						Orange County[9]	Osceola County[10]	Pasco County[11]	St. Johns County[12]
		Calculated[3]			Current Adopted[4]						
		Local	District & Coastal	Total	Local	District	Total				
Date of Last Update		2022			2001			2017	2019	2015	2018
Assessed Portion of Calculated[1]		N/A			N/A			100%	100%	56%	100%
Residential:											
Single Family (2,000 sq ft)	du	$384	$644	**$1,028**	$245	$351	**$596**	$1,785	$2,305	$892	$1,513
Multi-Family (1,300 sq ft)	du	$362	$606	**$968**	$245	$351	**$596**	$1,208	$1,118	$627	$1,215
Mobile Home (1,300 sq ft)	du	$362	$606	**$968**	$245	$351	**$596**	$1,330	$1,699	$627	$1,215

1) Represents the portion of the maximum calculated fee for each respective county that is actually charged. Fees may have been lowered/increased through annual indexing or policy discounts. Does not account for moratorium/suspensions.
2) du = dwelling unit
3) Source: Tables IV-11 and IV-12
4) Source: Volusia County Growth and Resource Management. Multi-family (2-3 units) used as a proxy for the multi-family category.
5) Source: Citrus County Land Development Division Impact Fees.
6) Source: Collier County Growth Management Impact Fees
7) Source: Flagler County Growth Management
8) Source: Lake County Planning and Zoning
9) Source: Orange County Permits and Licenses Impact Fees
10) Source: Osceola County Impact and Mobility Fees Office
11) Source: Pasco County Concurrency, Mobility, Impact, and Service Connection Fees
12) Source: St. Johns County's Schedule of Fees and Services

Parks and Recreation Impact Fee Benefit Zones

Currently, Volusia County has a countywide single benefit zone for district parks and four parks and recreation impact fee benefit zones for local parks, as outlined in Section 70-77 (Exhibit A) of the County's Code of Ordinances. These zones consist of the Northeast, Southeast, Southwest, and Northwest, as shown in Map IV-1.

As mentioned previously, benefit districts dictate where impact fee revenues can be spent to ensure that fee payers receive the associated benefit. Typically, these boundaries are based on land use patterns, growth rates, as well as man-made or geographical/environmental barriers. In addition, it is important to balance revenues generated with project needs.

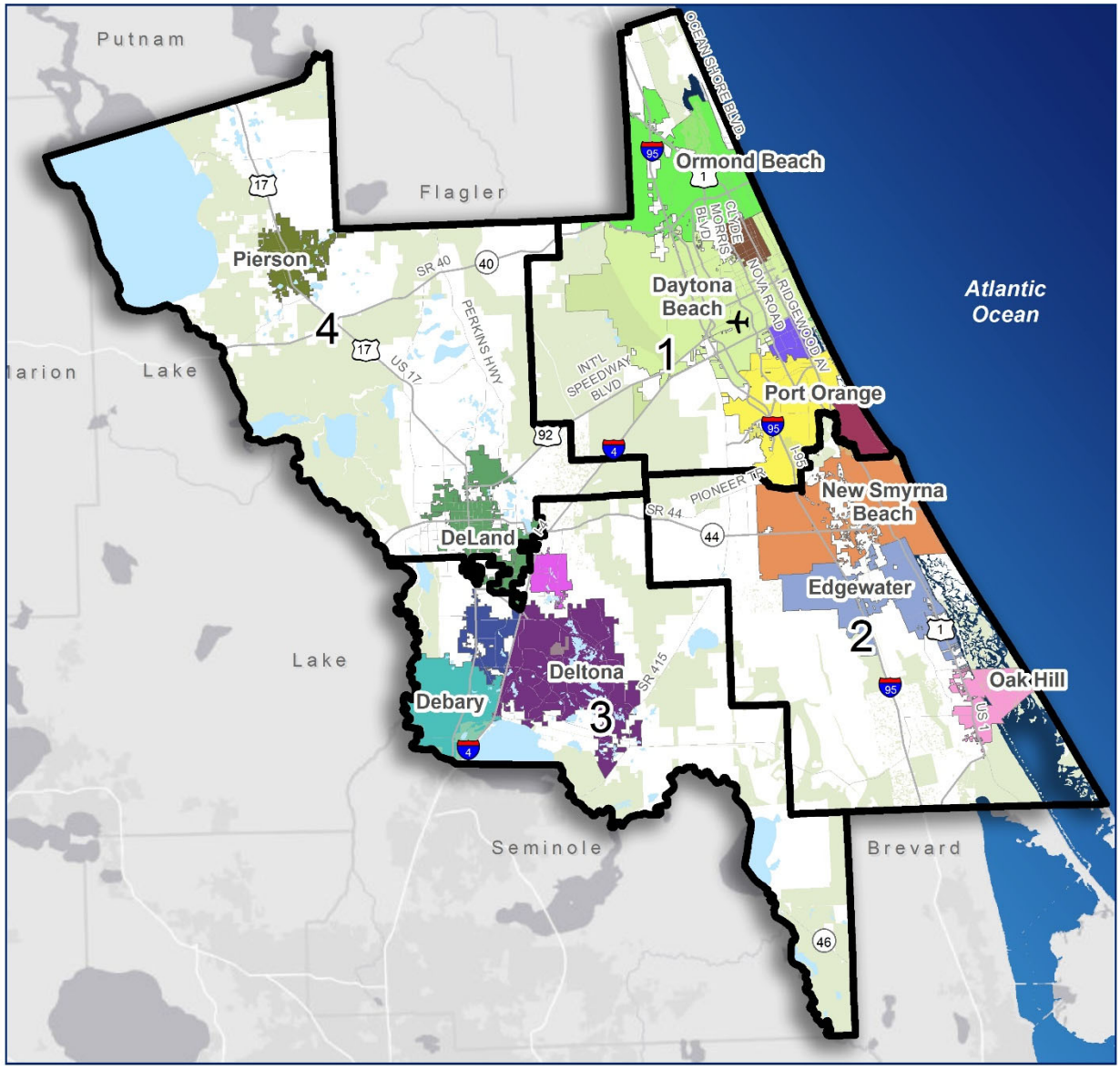
Given that district and coastal parks attract visitors throughout the county and even from other counties, it is appropriate to continue to have a single countywide district.

In the case of local parks, based on discussions with County staff, a proposed alteration to the Zone 2 boundary would expand this zone into Zone 1, which would better reflect the development patterns in the Port Orange area and capture additional potential revenues, intending to balance the future distribution. As proposed, the northern boundary of Zone 2 will be changed to Madeline Avenue, and then follow City boundaries (where possible) before aligning with I-4.

In addition to the re-alignment of Zones 1 and 2, slight adjustments are proposed for the boundary between Zones 3 and 4, around the city limits of DeLand. The current benefit zone boundaries follow the City limits at the time the zones were established and therefore do not reflect recent annexations. Based on discussions with County staff, the proposed boundary would run along I-4 and SR 472, consistent with the interlocal agreement between Orange City and DeLand regarding future annexation limits. Map IV-2 presents the current countywide benefit zone for district parks along with the location of district and coastal parks. The map also shows the proposed parks and recreation impact fee benefit zones for local parks along with the location of local parks.

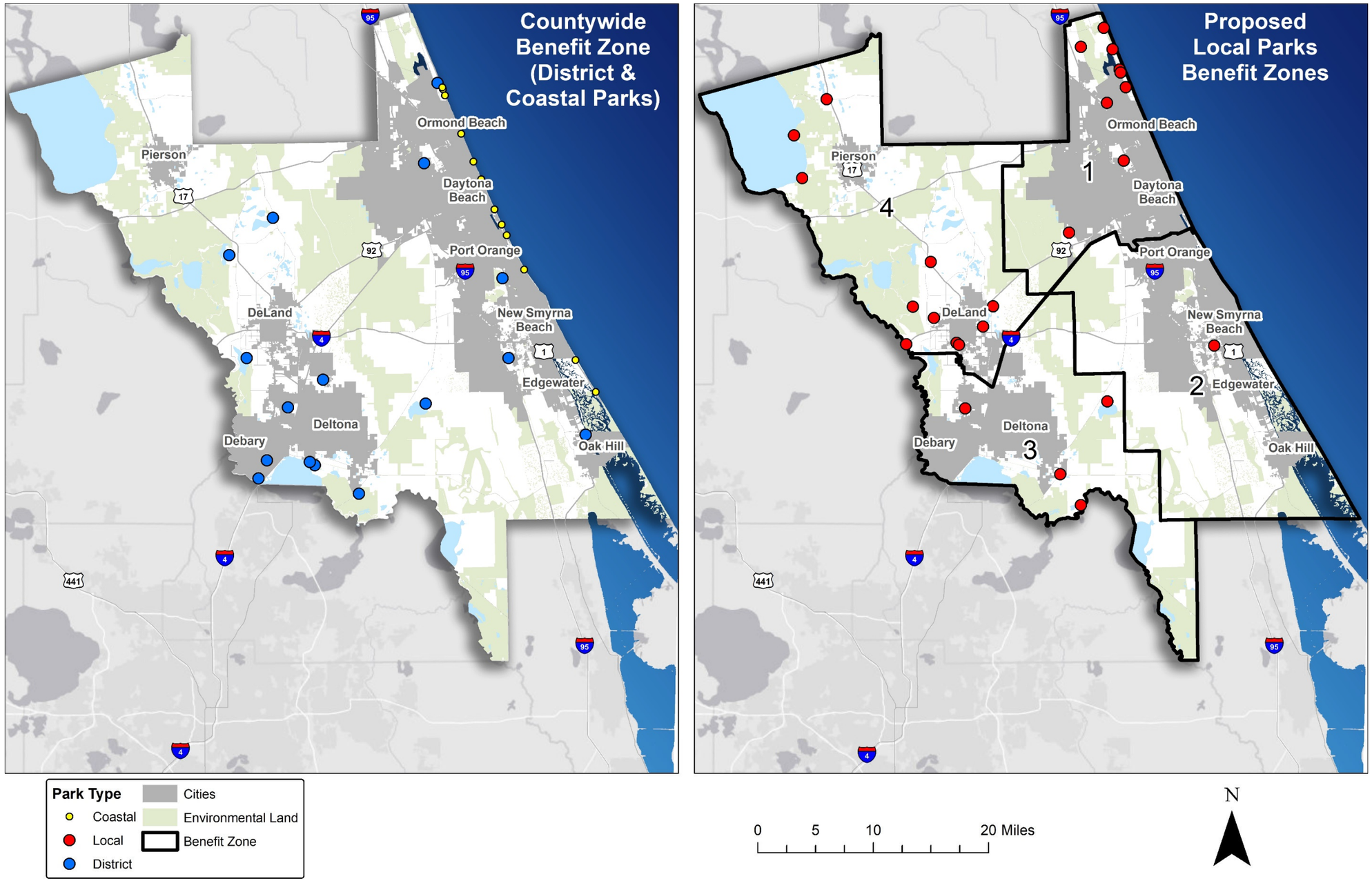
Map IV-1

Current Parks and Recreation Impact Fee Benefit Zones – Local Parks



Map IV-2

Proposed Parks and Recreation Impact Fee Benefit Zones – District, Coastal and Local Parks



V. Thoroughfare Roads

This section summarizes the analysis used to update Volusia County's thoroughfare road impact fee schedule and includes the following subsections:

- Demand Component
- Cost Component
- Credit Component
- Calculated Thoroughfare Road Impact Fee
- Thoroughfare Road Impact Fee Comparison
- Fee Variation by Geographic Area
- Thoroughfare Road Impact Fee Benefit Zones

Consistent with the County's current adopted methodology, the methodology used for the thoroughfare road impact fee study follows a consumption-based impact fee approach in which new development is charged based upon the proportion of vehicle-miles of travel (VMT) that each unit of new development is expected to consume of a lane mile of the transportation network.

Included in this section of the report is the necessary support material used in the calculation of the thoroughfare road impact fee. The general equation used to compute the impact fee for a given land use is:

[Demand x Cost] – Credit = Fee

The "demand" for travel placed on a roadway system is expressed in units of Vehicle-Miles of Travel (VMT) (daily vehicle-trip generation rate x the trip length x the percent new trips [of total trips]) for each land use contained in the impact fee schedule. Trip generation represents the average daily rates to provide a stable measure of new development's impact. The number of trips tends to vary significantly throughout the day, by time of day, depending on activity levels; however, overall daily trips tend to be stable.

The "cost" of building new capacity is typically expressed in units of dollars per vehicle-miles of transportation capacity. Consistent with the current adopted methodology, the cost is based on recent transportation costs for county facilities.

The "credit" is an estimate of future non-impact fee revenues generated by new development that are allocated to provide transportation capacity expansion. The impact fee is an "up front" payment for a portion of the cost of a lane-mile of capacity that is directly related to the amount of capacity consumed by each unit of land use contained in the impact fee schedule, that is not paid for by future tax revenues generated by the new development activity over the next 25 years. These credits are required under the supporting case law for the calculation of impact fees where a new development activity must be reasonably assured that they are not paying, or being charged, twice for the same level of service.

The input variables used in the fee equation are as follows:

Demand Variables:

- Trip generation rate
- Trip length
- Percent new trips
- Interstate and Toll Facility Adjustment Factor
- Trip Length Adjustment Factor
- City Road Adjustment Factor

Cost Variables:

- Cost per vehicle-mile
- Capacity added per lane-mile constructed

Credit Variables:

- Equivalent gas tax credit (pennies)
- Present worth
- Fuel efficiency
- Effective days per year

Demand Component

Travel Demand

Travel demand is the amount of a transportation system consumed by a unit of new land development activity. Demand is calculated using the following variables and is measured in terms of vehicle-miles of new travel (VMT) a unit of development places on the existing transportation system:

- Number of daily trips generated (Trip Generation Rate = TGR)
- Average length of those trips (Trip Length = TL)
- Proportion of travel that is new travel, rather than travel that is already traveling on the road system and is captured by new development (Percent New Trips = PNT)

As part of this update, the trip characteristics variables were primarily obtained from two sources: (1) trip characteristics studies previously conducted throughout Florida, including studies conducted in Volusia County (Florida Studies Database) and (2) the Institute of Transportation Engineers' (ITE) *Trip Generation Handbook* (11th Edition). The Florida Studies Database (included in Appendix C) was used to determine trip length, percent new trips, and the trip generation rate for several land uses.

Interstate and Toll Facility Adjustment Factor

This variable is used to recognize that interstate highway and toll facility improvements are funded using earmarked State and Federal funds. Typically, thoroughfare road impact fees are not used to pay for these improvements and the portion of travel occurring on the interstate/toll facility system is eliminated from the total travel for each use.

To calculate the interstate and toll (I/T) facility adjustment factor, the loaded highway network[1] file was generated using the Central Florida Regional Planning Model (CFRPM v7). A select zone analysis was run for all traffic analysis zones located within Volusia County in order to differentiate trips with an origin and/or destination within the county versus trips that simply passed through the county.

The analysis reviewed trips on all interstate and toll facilities within Volusia County, including, I-95 and I-4 (and associated on/off ramps). The limited access vehicle-miles of travel (Limited Access VMT) for trips with an origin and/or destination within the county was calculated for the identified limited access facilities. Next, the total VMT was calculated for all trips with an origin and/or destination within Volusia County for all thoroughfare roads, including limited access facilities.

[1] The "loaded highway network" refers to the final travel demand model roadway network with traffic volumes assigned (or loaded) to each model roadway link

The I/T adjustment factor of **32.5 percent** was determined by dividing the limited access VMT by the total countywide VMT for the 2045 Cost Feasible network[2]. By applying this factor to the VMT for each land use, the reduced VMT is then representative of only the thoroughfare roadways which can be funded by impact fees.

Trip Length Adjustment Factor

Trip lengths for several land uses were adjusted to account for differences between the average trip lengths included in the Florida Studies Database, the CFRPM v7, and other Florida Standard Urban Transportation Model Structure (FSUTMS) model results. The CFRPM v7 suggested that trip lengths are typically longer in Volusia County compared to other Florida counties. Therefore, residential, lodging, medical, office, and industrial land uses were increased by 25 percent, while recreational, institutional, retail, and service trip lengths were increased by five (5) percent.

City Road Adjustment Factor

This variable was used to adjust the vehicle-miles of travel (VMT) for each land use to reflect the portion of the VMT that occurs on non-city thoroughfare roadway facilities. To determine the adjustment factor, the 2045 VMT distribution was calculated using CFRPM v7 projections. Appendix C, Table C-2 provides further detail on this calculation.

Cost Component

Cost information from Volusia County and other counties in Florida was reviewed to develop a unit cost for all phases involved in the construction of one lane-mile of roadway capacity. Appendix D provides the data and other support information utilized in these analyses.

County Roadway Cost

This section examines the right-of-way (ROW), construction, and other cost components associated with county roads with respect to roadway capacity expansion improvements in Volusia County. In addition to local data, bid data for recently completed/ongoing projects throughout Florida were used to supplement the cost data for county roadway improvements. The cost for each roadway capacity project was separated into four components: design, right-of-way (ROW), construction, and construction engineering/inspection (CEI).

[2] The 2045 Cost Feasible network included in the River-to-Sea TPO's 2045 Long Range Transportation Plan (Connect 2045) includes the current Volusia County roadway network and projects listed in the County's 2045 Cost Feasible Plan that are expected to be completed by 2045.

Design and CEI

Design costs for county roads were estimated at **eight (8) percent** of construction phase costs based on a review of recent local cost data and cost data obtained from other Florida jurisdictions. Additional detail is provided in Appendix D, Tables D-2 and D-3.

CEI costs for county roads were estimated at **11 percent** of construction phase costs based on a review of recent local cost data and cost data from other jurisdictions throughout Florida. Additional detail is provided in Appendix D, Tables D-8 and D-9.

Right-of-Way

The ROW cost reflects the total cost of the acquisitions along a corridor that were necessary to have sufficient cross-section width to widen an existing road or, in the case of new construction, to build a new road. The right-of-way cost factor for county roads was estimated as a percentage of the construction cost per lane mile. This factor was determined based on a review of ROW-to-construction cost ratios from recent local improvements, future estimates, and ROW data obtained from other Florida jurisdictions.

As shown in Appendix D, Table D-4, six recent local improvements were identified with ROW-to-construction ratios ranging from 0 percent to 34 percent, with a weighted average of approximately 12 percent. The 2045 River-to-Sea TPO's Long Range Transportation Plan (LRTP) estimated ROW cost between six (6) and 80 percent of construction cost, with a weighted average of 39 percent for cost feasible state road improvements. A review of ROW costs in other Florida jurisdictions suggested that, for county roadways, the ROW factors range from 10 percent to 60 percent with an average of 39 percent (Appendix D, Table D-5).

Given this set of information, the ROW cost for county roads is estimated at **20 percent** of the construction cost per lane mile. While slightly higher than recent local costs, this estimate considers the higher costs estimated in the LRTP and costs observed throughout Florida.

Construction

The construction cost for county roads was based on recent local improvements in Volusia County and recently bid/completed improvements in other communities in Florida. A review of recent local cost data in Volusia County identified eight (8) capacity expansion projects:

- Howland Boulevard from Courtland Boulevard to North of SR 415
- LPGA Boulevard from Jimmy Ann Dr/Grand Reserve to Derbyshire Road
- Williamson Boulevard from LPGA Boulevard to Strickland Range Road

- Howland Boulevard from Providence Boulevard to Elkcam Boulevard
- Orange Camp Boulevard from MLK Boulevard to I-4
- 10th Street from Myrtle Avenue to US-1
- Blue Lake Avenue Extension from Blue Lake Avenue to SR 472
- Williamson Boulevard from Strickland Range Road to Hand Avenue

The construction cost for the recent local improvements averaged approximately $2.69 million per lane mile, as shown in Appendix D, Table D-6.

In addition to the local projects, recent improvements from multiple communities throughout the state were also reviewed. This review included 43 projects with more than 169 lane miles of curb & gutter (urban-design) roadway improvements from 15 counties and resulted in an average construction cost of approximately $3.14 million per lane mile. When improvements in counties with suburban/rural characteristics (like Volusia County) were reviewed, the data set included only 27 improvements, averaging $2.84 million per lane mile. Appendix D, Table D-7 provides further detail on the projects reviewed.

Based on a review of these data sets, a construction cost of **$2.70 million per lane mile** is used in the thoroughfare road impact fee calculation for curb & gutter (urban design) improvements.

To determine the cost per lane mile for county roads with open drainage (rural-design) characteristics, the relationship between urban-design and rural-design roadway costs from the FDOT District 7 Long Range Estimates (LRE)[3] was reviewed. Based on these cost estimates, the costs for roadways with open drainage characteristics were estimated at approximately 76 percent of the costs for roadways with curb & gutter characteristics. Additional detail is provided in Appendix D, Table D-1.

To determine the weighted average cost for county roadways, the cost for curb & gutter and open drainage roadways were weighted based on the distribution of roadways included in the Connect 2045 River-to-Sea TPO's Long Range Transportation Plan (Appendix D, Table D-10).

[3] Similar data for FDOT District 5 was not available

Table V-1

Estimated Total Cost per Lane Mile for County Roads

Cost Phase	Cost per Lane Mile		
	Curb & Gutter	Open Drainage[5]	Weighted Average[6]
Design[1]	$216,000	$164,000	$188,000
Right-of-Way[2]	$540,000	$410,000	$470,000
Construction[3]	$2,700,000	$2,052,000	$2,350,000
CEI[4]	$297,000	$226,000	$259,000
Total Cost	**$3,753,000**	**$2,852,000**	**$3,267,000**
Lane Mile Distribution[7]	46%	54%	100%

1) Design is estimated at 8% of construction costs
2) Right-of-Way is estimated at 20% of construction costs
3) Source: Appendix D, Table D-6
4) CEI is estimated at 11% of construction costs
5) Open drainage design is estimated at 76% of curb & gutter costs
6) Lane mile distribution (Item 7) multiplied by the design, ROW, construction, and CEI phase costs by improvement type to develop a weighted average cost per lane mile
7) Source: Appendix D, Table D-10

Note: All figures rounded to nearest $000

Vehicle-Miles of Capacity Added per Lane Mile

The thoroughfare road impact fee equation includes a vehicle-mile of capacity (VMC) component. The VMC is an estimate of capacity added per lane mile, for roadway improvements in the Connect 2045 River-to-Sea TPO's LRTP, Cost Feasible Plan. As shown in Table V-2, each lane mile will add approximately **10,100** vehicle-miles of capacity. Additional detail is provided in Appendix D, Table D-10.

Table V-2

Weighted Average Vehicle-Miles of Capacity per Lane Mile

Road Type	Lane Miles Added[1]	Vehicle-Miles of Capacity Added[2]	VMC Added per Lane Mile[3]
County Roads	68.70	695,827	**10,100**

1) Source: Appendix D, Table D-10
2) Source: Appendix D, Table D-10
3) Vehicle-miles of capacity added (Item 2) divided by lane miles added (Item 1)

Cost per Vehicle-Mile of Capacity

The roadway cost per unit of development is assessed based on the cost per vehicle-mile of capacity. As shown in Tables V-1 and V-2, the cost and capacity for thoroughfare roadways in Volusia County have been calculated based on recent and planned improvements. As shown in Table V-3, the cost per VMC for travel within the county is approximately **$323**.

The cost per VMC figure is used in the thoroughfare road impact fee calculation to determine the total cost per unit of development based on vehicle-miles of travel consumed. For each vehicle-mile of travel that is added to the thoroughfare roadway system, approximately $323 of capacity is consumed.

Table V-3

Weighted Average Cost per VMC Added

Road Type	Cost per Lane Mile[(1)]	Average VMC Added per Lane Mile[(2)]	Cost per VMC[(3)]
County Roads	$3,267,000	10,100	**$323.47**

1) Source: Table V-1
2) Source: Table V-2
3) Cost per Lane Mile (Item 1) divided by the average VMC added per lane mile (Item 2)

Credit Component

Capital Improvement Credit

The credit component of the impact fee accounts for the existing County funding sources that are being expended on roadway capacity expansion (excluding impact fee funds). This section summarizes the calculations utilized to develop the credit component to account for non-impact fee revenue contributions. Additional details are provided in Appendix E.

The present value of the average annual non-impact fee funding generated by new development over a 25-year period that is expected to fund capacity expansion projects was credited against the cost of the system consumed by travel associated with new development. To provide a connection to the demand component, which is measured in terms of travel, the non-impact fee dollars were converted to a fuel tax equivalency.

County Credit

In recent years and in the County's 5-year transportation construction program, most capacity expansion improvements are funded with gas tax and thoroughfare road impact fee revenues,

with contributions also coming from proportionate share and grant revenues. As shown in Table V-4, a total gas tax equivalent revenue credit of 2.0 pennies is calculated for the average annual non-impact fee funding of capacity expansion projects. In addition, the County allocates an equivalent non-impact fee funding credit of 2.3 pennies for debt service associated with transportation capacity improvements.

State Credit

As shown in Table V-4, State expenditures on state roads in Volusia County were reviewed and a credit for the capacity-expansion portion attributable to state projects was estimated (excluding expenditures on limited access facilities). This review, which included 10 years of historical expenditures, as well as five (5) years of planned expenditures, indicated that FDOT spending generates an equivalent credit of 7.4 pennies of gas tax revenue, annually. The use of a 15-year period for developing a state credit results in a reasonably stable credit for Volusia County, since it accounts for the volatility in FDOT spending in the county over short periods of time.

In summary, Volusia County allocates 4.3 pennies and FDOT allocated an additional 7.4 equivalent pennies for state projects in the county. These credit figures reflect the most recent available data for roadway expenditures from County and State sources.

Table V-4

Equivalent Pennies of Gas Tax Revenue

Credit	Average Annual Expenditures	Value per Penny[4]	Equivalent Pennies per Gallon[5]
County Revenues[1]	$4,763,404	$2,411,768	$0.020
County Debt Service[2]	$5,464,697	$2,411,768	$0.023
State Revenues[3]	$17,828,332	$2,411,768	$0.074
Total	**$29,849,618**		**$0.117**

1) Source: Appendix E, Table E-2
2) Source: Appendix E, Table E-3
3) Source: Appendix E, Table E-4
4) Source: Appendix E, Table E-1
5) Average annual expenditures divided by the value per penny (Item 4) divided by 100

Present Worth Variables

- Facility Life: The roadway facility life used in the impact fee analysis is 25 years, which represents the reasonable life of a roadway. This variable is used to calculate the present worth of the capital improvement credit.

- Interest Rate: This is the discount rate at which gasoline tax revenues might be bonded. It is used to compute the present value of the gasoline taxes generated by new development. The discount rate of 2.5 percent was used in the impact fee calculation based on estimates provided by the Volusia County Finance Department.

Fuel Efficiency

The fuel efficiency (i.e., the average miles traveled per gallon of fuel consumed) of the fleet of motor vehicles was estimated using the quantity of gasoline consumed annually (over 25 years) by travel associated with a particular land use.

Appendix E, Table E-9 documents the calculation of fuel efficiency value based on the following equation, where "VMT" is vehicle miles of travel and "MPG" is fuel efficiency in terms of miles per gallon.

$$Fuel\ Efficiency = \sum VMT_{Roadway\ Type} \div \sum \left(\frac{VMT_{Vehicle\ Type}}{MPG_{Vehicle\ Type}} \right)_{Roadway\ Type}$$

The methodology uses non-interstate VMT and average fuel efficiency data for passenger vehicles (i.e., passenger cars and other 2-axle, 4-tire vehicles, such as vans, pickups, and SUVs) and large trucks (i.e., single-unit, 2-axle, 6-tire or more trucks and combination trucks) to calculate the total gallons of fuel used by each of these vehicle types.

The combined total VMT for the vehicle types is then divided by the combined total gallons of fuel consumed to calculate, in effect, a "weighted" fuel efficiency value that reflects the existing fleet mix of traffic on non-interstate roadways. The VMT and average fuel efficiency data were obtained from the most recent Federal Highway Administration's *Highway Statistics 2020*. Based on the calculation completed in Appendix E, Table E-9, the fuel efficiency rate used in the updated impact fee equation is 19.23 miles per gallon. The fuel efficiency has been increasing over time, which may be partially due to alternative fuels. However, this estimate is based on historical data and does not attempt to estimate future impact of alternative fuels.

Effective Days per Year

An effective 365 days per year of operations was assumed for all land uses in the proposed fee. However, this will not be the case for all land uses since some uses operate only on weekdays

(e.g., office buildings) and/or only seasonally (e.g., schools). The use of 365 days per year, therefore, ensures that non-impact fee contributions are adequately credited against the fee.

Calculated Thoroughfare Road Impact Fee

Detailed impact fee calculations for each land use are included in Appendix F, which includes the major land use categories and the impact fees for the individual land uses contained in each of the major categories. For each land use, Appendix F illustrates the following:

- Demand component variables (trip rate, trip length, and percent of new trips)
- Total thoroughfare road impact fee cost
- Annual capital improvement credit
- Present value of the capital improvement credit
- Net thoroughfare road impact fee
- Current adopted Volusia County impact fee rates
- Percent difference between the calculated impact fee and the current adopted impact fee

For clarification purposes, it may be useful to walk through the calculation of an impact fee for one of the land use categories. In the following example, the net impact fee is calculated for the single-family residential detached (2,000 sq ft) land use category (ITE LUC 210) using information from the impact fee schedules included in Appendix F. For each land use category, the following equations are utilized to calculate the net impact fee:

Net Impact Fee = Total Impact Cost – Capital Improvement Credit

Where:

Net VMT= ([Trip Rate × Trip Length × % New Trips] /2) × (1 - Interstate/Toll Facility Adjustment Factor) x (1 – City Road Adjustment Factor)

Total Impact Cost = Net VMT × (Cost per Vehicle-Mile of Capacity)

Capital Improvement Credit = Present Value (Annual Capital Improvement Credit), given 2.5% interest rate and a 25-year facility life

Annual Capital Improvement Credit = ([Trip Rate × Total Trip Length × % New Trips] /2) × (Effective Days per Year × $/Gallon to Capital) / Fuel Efficiency

Each of the inputs has been discussed previously in this document; however, for purposes of this example, brief definitions for each input are provided in the following paragraphs, along with the actual inputs used in the calculation of the fee for the single-family detached (2,000 sq ft) residential land use category:

- *Trip Rate* = the average daily trip generation rate, in vehicle-trips/day (7.81)
- *Assessable Trip Length* = the average trip length on collector roads or above, for the category, in vehicle-miles (8.28)
- *Total Trip Length* = the network trip length plus an adjustment factor of half a mile, which is added to the trip length to account for the fact that gas taxes are collected for travel on all roads including local roads (8.28 + 0.50 = 8.78)
- *Percent New Trips* = adjustment factor to account for trips that are already on the roadway (100 percent)
- *Divide by 2* = the total daily miles of travel generated by a particular category (i.e., rate*length*percent new trips) is divided by two to prevent the double-counting of travel generated between two land use codes since every trip has an origin and a destination
- *Interstate/Toll Facility Adjustment Factor* = adjustment factor to account for travel demand occurring on interstate highways and/or toll facilities (32.5 percent)
- *City Road Adjustment Factor* = used to adjust the VMT for each land use to account for the portion of the VMT that occurs on non-county/state roadway facilities (2.8 percent)
- *Cost per Lane* Mile = unit cost to construct one lane-mile of roadway, in $/lane-mile ($3,267,000)
- *Average Vehicle-Capacity Added per Lane* Mile = represents the average daily traffic on one travel lane at capacity for one lane-mile of roadway, in vehicles/lane-mile/day (10,100)
- *Cost per Vehicle-Mile of Capacity* = unit of vehicle-miles of capacity consumed per unit of development. Cost per lane mile divided by average capacity added per lane-mile ($3,267,000 / 10,100 = $323.47)
- *Present Value* = calculation of the present value of a uniform series of cash flows, gas tax payments in this case, given an interest rate, “i,” and a number of periods, “n;” for 2.5 percent interest and a 25-year facility life, the uniform series present worth factor is 18.4244
- *Effective Days per Year* = 365 days
- *$/Gallon to Capital* = the amount of equivalent gas tax revenue per gallon of fuel that is used for capital improvements, in $/gallon ($0.117)

- *Fuel Efficiency* = average fuel efficiency of vehicles, in vehicle-miles/gallon (19.23)

Thoroughfare Road Impact Fee Calculation

Using these inputs, a net thoroughfare road impact fee can be calculated for the single-family residential detached (2,000 sq ft) land use category as follows:

Net VMT = ([7.81 * 8.28 * 1.0] /2) * (1 - 0.325) * (1 – 0.028) = 21.22
Total Impact Cost = 21.22 * $323.47 = **$6,864**
Annual Cap. Improv. Credit = ([7.81 * 8.78 * 1.0] /2) * 365 * ($0.117/19.23) = $76
Capital Improvement Credit = $76 * 18.4244 = $1,400
Net Impact Fee = $6,864 – $1,400 = **$5,464**

Calculated fee rates are presented in Table V-5 and additional detail is provided in **Appendix F**.

Thoroughfare Road Impact Fee Comparison

As part of the work effort in updating Volusia County's Thoroughfare Road Impact Fee program, a comparison of calculated fees to road/multi-modal transportation impact fees adopted in other jurisdictions was completed, as shown in Table V-6.

Note that differences in fee levels for a given land use can be caused by several factors, including the year of the technical study, adoption percentage, study methodology including variation in costs, credits, and travel demand, land use categories included in the fee schedule, etc.

Table V-5

Calculated Thoroughfare Road Impact Fee Rates

ITE LUC	Land Use	Unit	Calculated Road IF Rate
	RESIDENTIAL:		
210	Single Family (Detached) 1,200 sf or less	du	$4,864
	Single Family (Detached) 1,201 to 1,700 sf	du	$5,097
	Single Family (Detached) 1,701 to 2,200 sf	du	$5,464
	Single Family (Detached) 2,201 to 3,000 sf	du	$5,835
	Single Family (Detached) greater than 3,000 sf	du	$6,215
215	Single Family (Attached)	du	$4,733
220	Multi-Family (Low-Rise) 1-3 Stories	du	$3,700
221/222	Multi-Family (Mid/High Rise) 4 Stories or more	du	$2,489
240	Mobile Home/RV Unit (Park Only)	du	$1,903
	TRANSIENT, ASSISTED, GROUP:		
310	Hotel	room	$2,387
320	Motel	room	$1,175
620	Nursing Home	1,000 sf	$1,606
	RECREATION:		
411	Public Park	acre	$309
430	Golf Course	hole	$15,998
445	Movie Theater	1,000 sf	$13,673
	INSTITUTIONS:		
560	Church	1,000 sf	$2,350
565	Day Care Center	1,000 sf	$6,234
	MEDICAL:		
610	Hospital	1,000 sf	$5,717
	OFFICE:		
710	General Office	1,000 sf	$5,396
714	Corporate Headquarters Bldg	1,000 sf	$3,966
720	Medical Office 10,000 sf & Under	1,000 sf	$11,114
	Medical Office greater than 10,000 sf	1,000 sf	$15,999
	RETAIL:		
822	Retail/Shopping Center less than 40,000 sfgla	1,000 sfgla	$3,212
821	Retail/Shopping Center 40,000 to 150,000 sfgla	1,000 sfgla	$6,324
820	Retail/Shopping Center greater than 150,000 sfgla	1,000 sfgla	$6,706
840/841	New/Used Automobile Sales	1,000 sf	$7,831
849	Tire Superstore/Auto Repair	bay	$4,336
850	Supermarket	1,000 sf	$9,347
862	Home Improvement Superstore	1,000 sf	$3,935
880/881	Pharmacy/Drug Store with and w/out Drive-Thru	1,000 sf	$5,865
890	Furniture Store	1,000 sf	$1,827
	SERVICE:		
911	Bank/Savings w/out Drive-Thru	1,000 sf	$5,620
912	Bank/Savings w/Drive-Thru	1,000 sf	$10,062
931	Fine Dining/Quality Restaurant	1,000 sf	$18,037
932	High-Turnover (Sit-Down) Restaurant	1,000 sf	$18,441
934	Fast Food Resturant w/Drive-Thru	1,000 sf	$52,410
941	Quick Lubrication Vehicle Shop	bay	$5,224
943	Automobile Parts and Service Center	1,000 sf	$3,770
944	Gas Station w/Convenience Store less than 2,000 sf	fuel pos.	$6,367
945	Gas Station w/Convenience Store 2,000 to 5,499 sf	fuel pos.	$9,789
	Gas Station w/Convenience Store 5,500+ sf	fuel pos.	$12,806
	INDUSTRIAL:		
110	General Industrial	1,000 sf	$2,418
140	Manufacturing	1,000 sf	$2,360
150	Warehouse	1,000 sf	$853
151	Mini-Warehouse	1,000 sf	$495

Source: Appendix F, Table F-1

Table V-6

Thoroughfare Road Impact Fee Comparison

Land Use	Unit[2]	Volusia County		Brevard County[5]	Citrus County[6]	Collier County[7]	Flagler County[8]	Lake County[9]		Marion County[10]	Orange County[11]		
		Calculated[3]	Current Adopted[4]					Central, N/C	South, NE/W		Urban	Non-Urban/ Suburban	Rural
Date of Last Update		**2022**	2018	2000	2021	2019	2021	2019	2019	2015	2020	2020	2020
Assessed Portion of Calculated[1]		**n/a**	100%	100%	50%	100%	62%	26%	70%	20%/11%	100%	100%	100%
Residential:													
Single Family Detached (2,000 sq ft)	du	**$5,464**	$5,432	$4,353	$1,932	$8,090	$1,502	$1,000	$2,706	$1,397	$8,218	$10,138	$11,586
Multi-Family; Low-Rise (1,300 sq ft)	du	**$3,700**	$3,245	$2,677	$728	$6,950	$691	$494	$1,336	$903	$5,937	$7,303	$8,349
Mobile Home Park (1,500 sq ft)	du	**$1,903**	$2,002	$1,642	$604	$3,576	$554	$1,000	$2,706	$514	$3,054	$3,755	$4,292
Non-Residential:													
Light Industrial	1,000 sf	**$2,418**	$2,040	n/a	$429	$4,584	$617	$638	$1,728	$428	$3,117	$3,857	$4,410
Office (50,000 sq ft)	1,000 sf	**$5,396**	$4,020	$5,058	$1,184	$8,605	$1,491	$935	$2,531	$676	$8,132	$10,037	$11,473
Retail/Shopping Center (125,000 sq ft)	1,000 sfgla	**$6,324**	$6,450	$5,270	$1,160	$13,774	$1,949	$1,095	$2,964	$1,014	$11,052	$11,763	$12,569
Bank/Savings w/Drive-Thru	1,000 sf	**$10,062**	$9,850	$23,331	$1,160	$21,254	$3,070	$7,589	$20,537	$2,260	$14,868	$17,571	$18,719
Fast Food Restaurant w/Drive-Thru	1,000 sf	**$52,410**	$47,840	$35,791	$1,160	$104,272	$14,833	$7,589	$20,537	$2,803	$74,592	$86,876	$92,547

1) Represents the portion of the maximum calculated fee for each respective county that is actually charged. Fees may have been lowered/raised through indexing or policy discounts. Does not account for moratoriums/suspensions
2) Du = dwelling unit
3) Source: Appendix F, Table F-1
4) Source: Volusia County Growth and Resource Management
5) Source: Brevard County Planning and Development Department
6) Source: Citrus County Planning and Development Department; County-wide rates, effective 6/23/2022
7) Source: Collier County Growth Management Division, Planning and Regulation
8) Source: Flagler County Growth Management
9) Source: Lake County Planning and Zoning Department
10) Source: Marion County Growth Services Department
11) Source: Orange County Planning and Development Department

Table V-6 (continued)

Thoroughfare Road Impact Fee Comparison

Land Use	Unit[2]	Volusia County		Osceola County[5]		Pasco County[6]			Seminole County[7]			St. Johns County[8]	Sumter County[9]
		Calculated[3]	Current Adopted[4]	Urban	Rural	Urban	Suburban	Rural	Core	Suburb	Rural		
Date of Last Update		**2022**	2018	2020	2020	2018	2018	2018	2020	2020	2020	2018	2019
Assessed Portion of Calculated[1]		**n/a**	100%	100%	100%	n/a	n/a	n/a	100%	100%	100%	100%	40%
Residential:													
Single Family Detached (2,000 sq ft)	du	**$5,464**	$5,432	$9,999	$15,941	$6,018	$8,839	$10,107	$1,811	$2,714	$7,312	$9,454	$2,666
Multi-Family; Low-Rise (1,300 sq ft)	du	**$3,700**	$3,245	$7,754	$7,754	$4,427	$7,391	$9,832	$1,048	$1,665	n/a	$7,588	$1,911
Mobile Home Park (1,500 sq ft)	du	**$1,903**	$2,002	$5,296	$5,296	$2,276	$3,359	$3,848	$537	$875	$2,456	$7,588	$979
Non-Residential:													
Light Industrial	1,000 sf	**$2,418**	$2,040	$2,274	$2,274	$0	$0	$0	$761	$1,024	$2,027	$1,549	$1,204
Office (50,000 sq ft)	1,000 sf	**$5,396**	$4,020	$6,025	$6,025	$0	$0	$0	$1,470	$1,840	$3,614	$2,923	$2,367
Retail/Shopping Center (125,000 sq ft)	1,000 sfgla	**$6,324**	$6,450	$25,943	$25,943	$5,641	$7,051	$8,813	$2,523	$3,819	$7,369	$4,727	$3,774
Bank/Savings w/Drive-Thru	1,000 sf	**$10,062**	$9,850	$10,718	$10,718	$12,730	$14,384	$15,582	$2,483	$3,655	$7,226	$9,029	$5,805
Fast Food Restaurant w/Drive-Thru	1,000 sf	**$52,410**	$47,840	$14,802	$14,802	$40,950	$46,712	$50,978	$5,261	$9,031	$17,783	$12,209	$28,394

1) Represents the portion of the maximum calculated fee for each respective county that is actually charged. Fees may have been lowered/raised through indexing or policy discounts. Does not account for moratoriums/suspensions
2) Du = dwelling unit
3) Source: Appendix F, Table F-1
4) Source: Volusia County Growth and Resource Management
5) Source: Osceola County Community Development Department. Non-mixed use fees are shown. Back with drive-thru is measured "per lane". Warehouse rate is shown for light industrial
6) Source: Pasco County Land Development Code, Section 1302.2
7) Source: Seminole County Development Services Department
8) Source: St. Johns County Growth Management Department
9) Source: Sumter County Zoning Division

Thoroughfare Road Impact Fee Benefit Zones

Currently, Volusia County has four thoroughfare road impact fee benefit districts, as outlined in Section 70-77 (Exhibit A) of the County's Code of Ordinances. These zones consist of the Northeast, Southeast, Southwest, and Northwest, as shown in Map V-1.

Benefit districts dictate where impact fee revenues can be spent to ensure that fee payers receive the associated benefit. Typically, these boundaries are based on land use patterns, growth rates, major man-made or geographical/environmental barriers. In addition, it is important to balance revenues generated with project needs.

As shown in Table V-7, revenue generation across districts is fairly consistent, with Zone 2 being the lowest generator. Through discussions with County staff, a proposed alteration to the Zone 2 boundary would expand this zone into Zone 1, which would better reflect the development patterns in the Port Orange area and capture additional potential revenues, intending to balance the future distribution. As proposed, the northern boundary of Zone 2 will be changed to Madeline Ave, and then follow City boundaries (where possible) before aligning with I-4.

Table V-7
Historical Thoroughfare Road Impact Fee Revenue Distribution

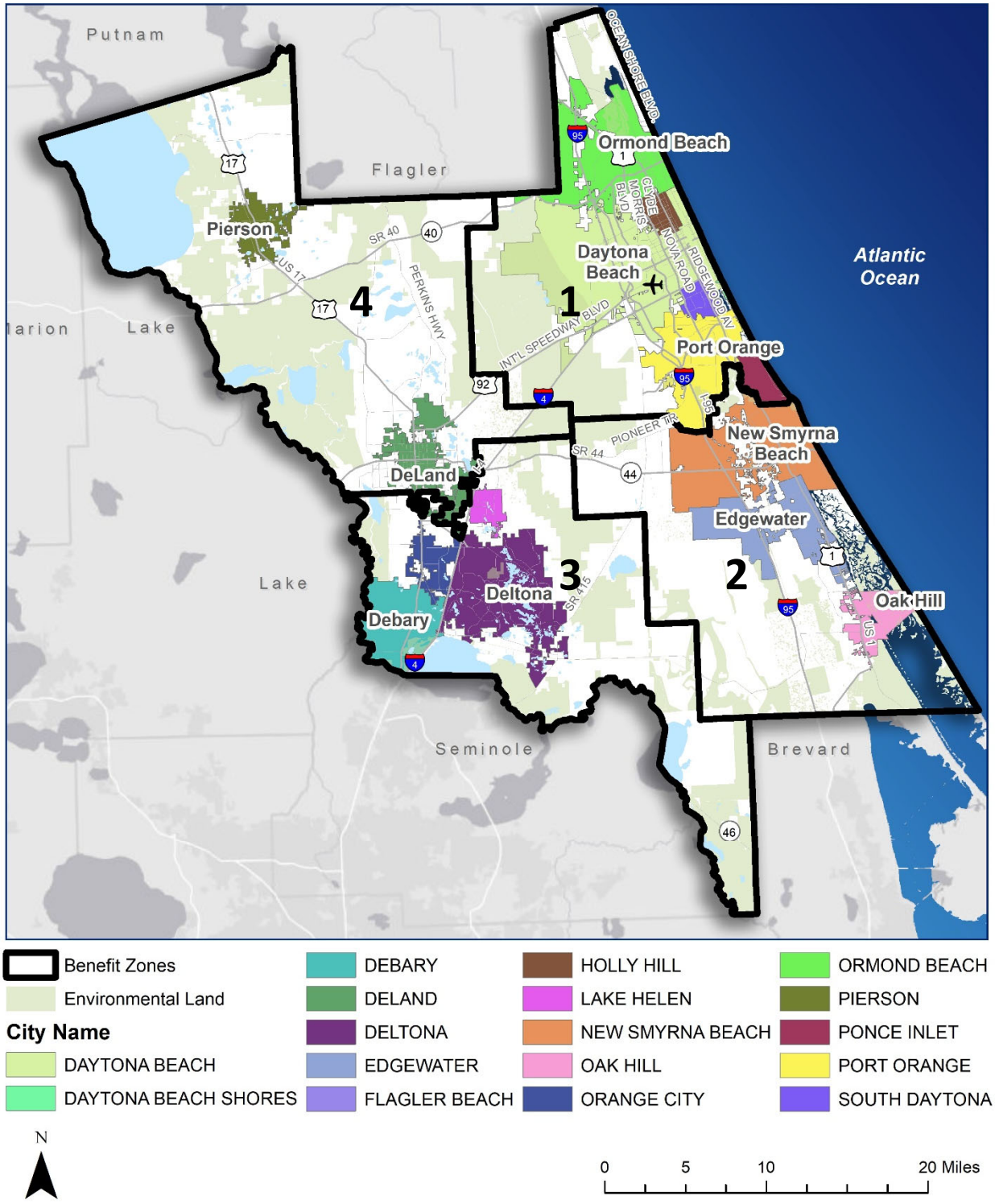
Zone	Collections 2011-2021	Percent of Total
Zone 1 (NE)	$20,228,000	31%
Zone 2 (SE)	$10,260,000	16%
Zone 3 (SW)	$19,065,000	30%
Zone 4 (NW)	$14,817,000	23%
Total	**$64,370,000**	-

In addition to the re-alignment of Zones 1 and 2, slight adjustments are proposed for the boundary between Zones 3 and 4, around the city limits of DeLand. The current benefit zone boundaries follow the City limits at the time the zones were established and therefore do not reflect recent annexations. Based on discussions with County staff, the proposed boundary would run along I-4 and SR 472, consistent with the interlocal agreement between Orange City and DeLand in regard to future annexation limits. Map V-2 presents the proposed thoroughfare road impact fee benefit zones.

Additionally, Map V-3 presents the location of roadway capacity expansion improvements from the Connect 2045 River-to-Sea MPO's LRTP Cost Feasible Plan. As shown, each proposed district has substantial needs, with no great imbalance between the revenue distribution and the availability of projects eligible for impact fee funding.

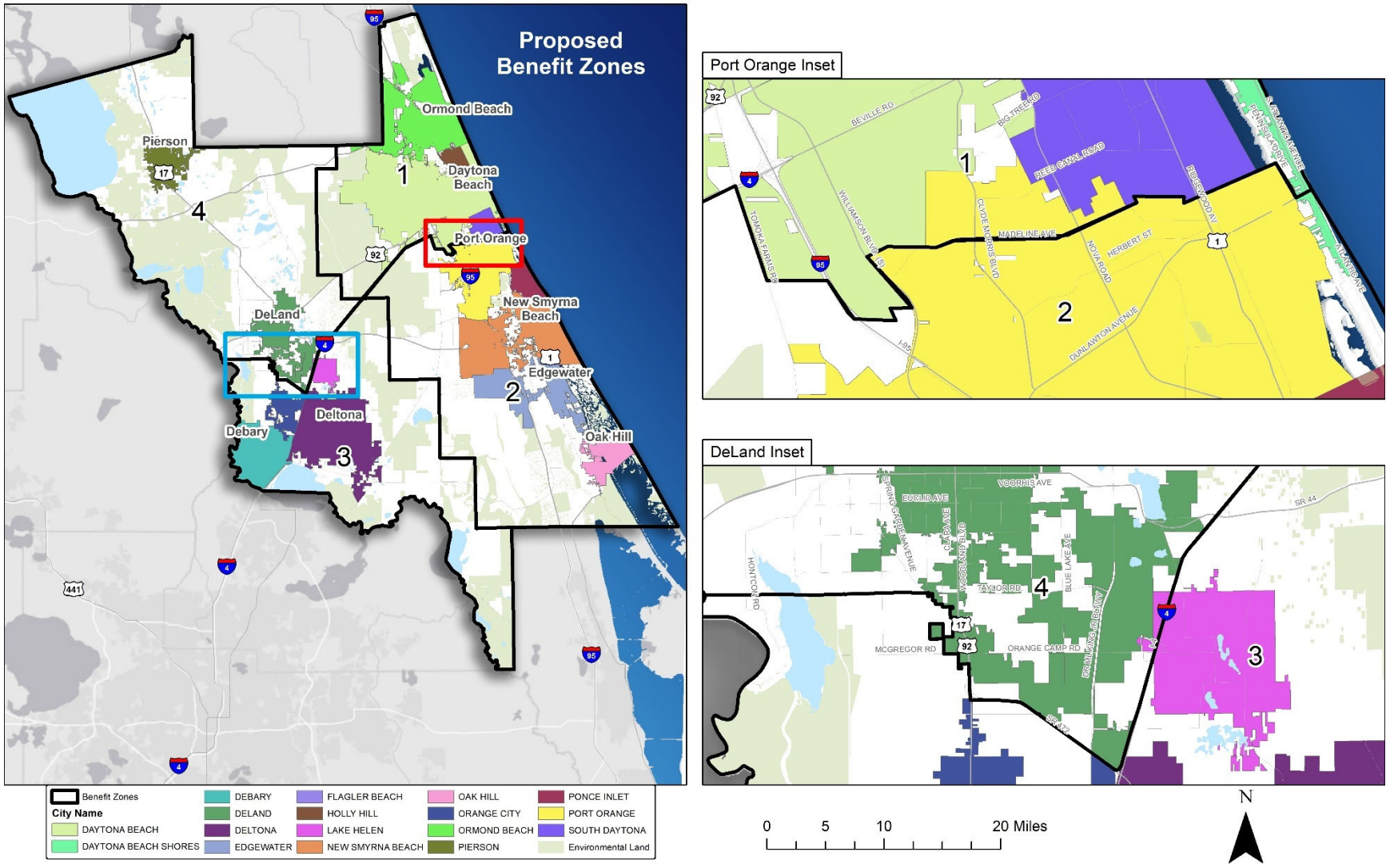
Map V-1

Current Thoroughfare Road Impact Fee Benefit Zones



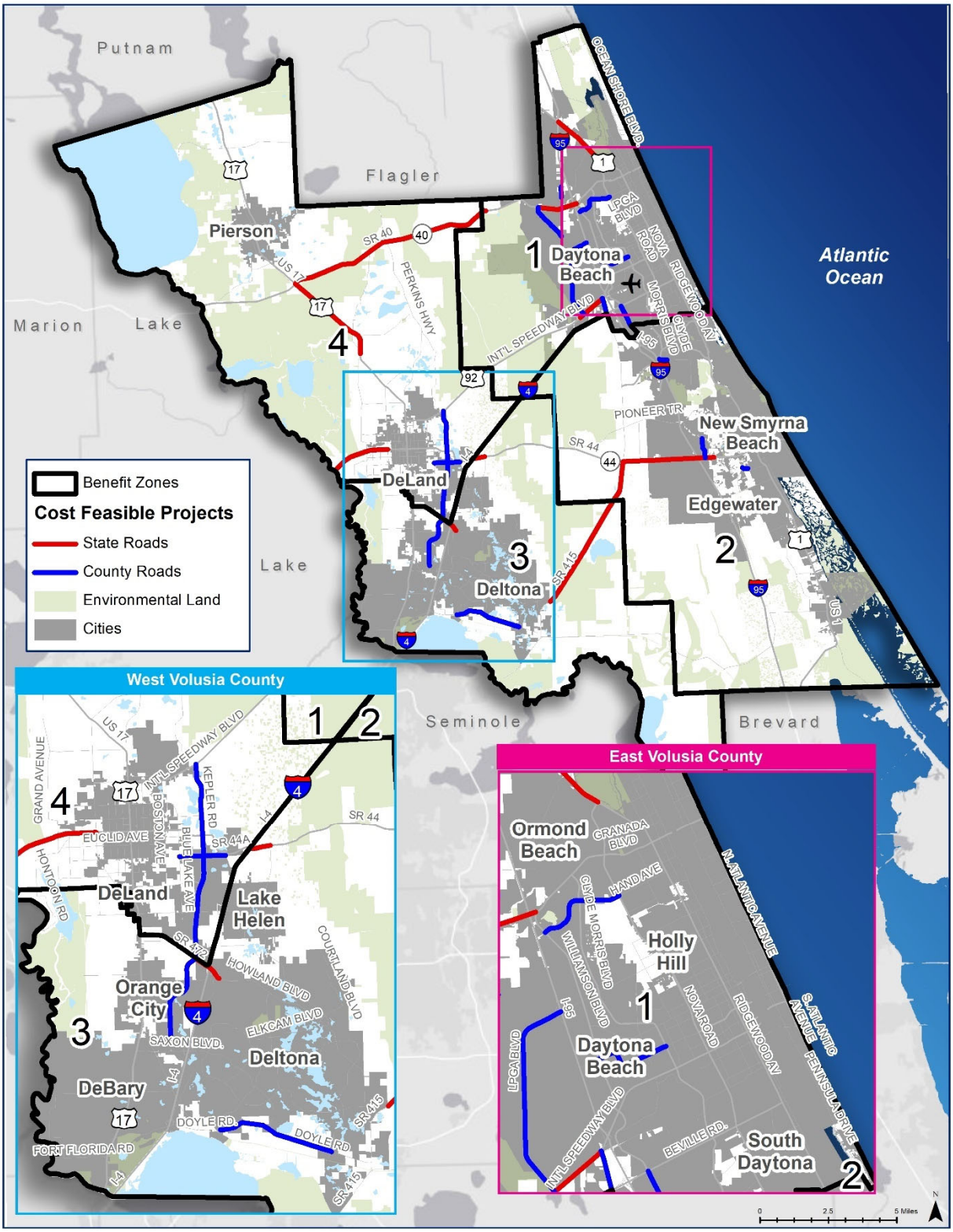
Map V-2

Proposed Thoroughfare Road Impact Fee Benefit Zones



Map V-3

Connect 2045 River-To-Sea MPO's LRTP Cost Feasible Plan



VI. Impact Fee Discounts in Community Redevelopment Areas

To encourage development in the Community Redevelopment Areas (CRAs), Volusia County is interested in exploring options to lower impact fees. This section provides an approach to discount impact fees in the CRAs to support the County's economic development goals. In terms of discounting the fees, it is important to note the following:

- Florida impact fee case law and legislation require that the fee be proportional to the impact and that the fee payer receives the associated benefit. Given this, although local governments have been able to discount the fees for all land use categories equally, there are some concerns when only a select few land uses or subareas receive a discount. More specifically, this approach creates concerns because those who pay their full share or a larger portion of their share than incentivized uses/areas do not necessarily receive an equivalent benefit. There is also a concern that this discount will not allow the community to achieve the LOS that many land uses are being charged for. To address this concern, the following approach has been used in Florida:

    - Discounting land uses/geographic areas that are de-minimis in terms of impact fee revenue generation. For example, development activity within the CRAs tends to be limited. As long as revenue generation is below a 5-percent threshold, the fees for these land uses are considered to have a de-minimis impact on the revenues and can be discounted. This approach ensures that the discounts do not significantly affect the County's ability to fund projects with impact fee revenues and that the level of service that is being charged for can be achieved even with these discounts.

    - As shown in Table V-8, development in the CRAs has accounted for approximately 11 percent of total countywide development since 2015. However, by excluding three of the largest CRA's (Daytona Beach Downtown CRA, Spring Hill CRA, and US 1 CRA), the remaining CRA's would fall into the "de minimus" classification and impact fees in these areas could be discounted.

Table VI-1

Development Levels in CRAs since 2015

Community Redevelopment Area	Residential Units	% of CRA Total	Non-Res Sq Ft	% of CRA Total
Daytona Beach Ballough Rd CRA	0	0.0%	0	0.0%
Daytona Beach Downtown CRA	5	1.1%	217,746	22.4%
Daytona Beach Main Street CRA	4	0.9%	2,234	0.2%
Daytona Beach Westside (Midtown) CRA	95	21.3%	45,502	4.7%
Downtown DeLand CRA	23	5.2%	66,967	6.9%
Edgewater CRA 2014-159	0	0.0%	76,837	7.9%
Holly Hill CRA	0	0.0%	65,780	6.8%
North Mainland/Ormond Crossing CRA	n/a	n/a	n/a	n/a
Orange City CRA 2014-95	2	0.4%	7,188	0.7%
Ormond Beach CRA	1	0.2%	6,712	0.7%
Port Orange CRA	0	0.0%	36,021	3.7%
Port Orange Town Center CRA	0	0.0%	21,301	2.2%
South Atlantic Redevelopment Area	0	0.0%	13,025	1.3%
South Daytona CRA	83	18.7%	9,334	1.0%
Southwest Deltona CRA	3	0.7%	16,730	1.7%
Spring Hill CRA	101	22.7%	193,687	19.9%
US 1 CRA District	128	28.8%	192,645	19.8%
Total	**445**		**971,709**	
Community Redevelopment Area	**Residential Units**	**% of County Total**	**Non-Res Sq Ft**	**% of County Total**
Total (CRA)	445	2.6%	971,709	11.2%
Total (CRA; excl. DBD, SH, US 1)	211	1.2%	367,631	4.2%
Total (Countywide)	17,003	-	8,655,055	-

Source: Volusia County 2021 NAL TaxRoll

Note: North Mainland/Ormond Crossing CRA excluded from analysis per discussion with County staff

- In the case of CRAs that generate more than 5 percent of the revenues, an acceptable practice is for the County to "buy down" the fees using tax or other non-impact fee revenues. This type of buy-down needs to be supported by Comprehensive Plan language in terms of the community goals and initiatives related to economic development, growth management, sustainability, and other similar goals/policies.

- Finally, the County can also use the economic growth strategy approach developed by Benesch, which considers the existing development's ability to

absorb new growth and calculates the levels of possible policy discounts without reducing the level of service used in the calculation of the impact fees.

- As presented throughout this report, in addition to impact fees, other revenue sources such as ad valorem tax, fuel tax, sales tax, grants and other revenue sources are also being used to fund each type of infrastructure. These future contributions for non-debt payments could be used to buy down fees in subareas.

Appendix A
Population

Appendix A: Population

With the exception of the thoroughfare roads impact fee, all impact fee programs included in this report require the use of population data in calculating levels of service, demand and credit calculations. With this in mind, a consistent approach to developing population estimates and projections is an important component of the data compilation process. To accurately determine demand for services, not only the residents, or permanent population of the county, but also the seasonal residents and visitors were considered. Seasonal residents include visitors and part-time residents, which are defined as living in Volusia County for less than six months each year. Therefore, for purposes of calculating future demand for capital facilities for the fire rescue and emergency medical services impact fees, the weighted seasonal population is used in the population estimates and projections. The parks and recreation impact fee is calculated using the permanent population.

Service area for each infrastructure type is as follows:

- Fire rescue: Unincorporated county, Cities of Lake Helen and Oak Hill, and Town of Pierson
- EMS: Countywide
- Parks: District parks are provided countywide while local parks are provided to the unincorporated area. In the case of parks, permanent population figures are utilized based on input from County staff.

Given the differences in services areas, population estimates are provided separately for each impact fee service area.

Table A-1 presents the weighted seasonal and permanent population trends. The projections indicate that the current weighted seasonal population of Volusia County is approximately 632,400 countywide and 137,500 for the fire rescue service area. With regards to parks, the current permanent service area population for district parks is 570,400 and for local parks is 116,700.

Table A-1

Volusia County Weighted Population Trends and Projections

Year	Weighted Seasonal Population Figure		Permanent Population Figures[3]	
	Volusia Countywide[1]	Fire Rescue Service Area[2]	Volusia Countywide	Volusia Unincorporated
2000	486,595	125,471	443,343	106,880
2001	494,091	128,407	450,254	109,706
2002	501,758	130,128	457,241	111,358
2003	510,536	131,349	465,240	112,531
2004	521,841	132,296	475,542	113,441
2005	531,797	133,069	484,615	114,184
2006	540,965	133,722	492,969	114,813
2007	547,012	134,290	498,480	115,357
2008	547,883	134,789	499,273	115,837
2009	544,791	135,236	496,456	116,266
2010	544,108	135,898	494,593	116,655
2011	546,469	135,896	496,655	116,580
2012	549,721	135,885	499,610	116,537
2013	553,205	135,878	502,777	116,506
2014	558,947	135,873	507,995	116,482
2015	566,335	135,868	514,710	116,462
2016	574,227	135,865	521,882	116,446
2017	581,441	135,863	528,438	116,431
2018	589,718	135,859	535,961	116,419
2019	593,308	134,826	543,369	116,407
2020	599,252	133,678	553,543	116,397
2021	624,602	137,193	563,358	116,557
2022	**632,409**	**137,495**	**570,400**	**116,720**
2023	640,314	137,798	577,530	116,883
2024	648,319	138,101	584,749	117,047
2025	656,469	138,405	592,100	117,211
2026	662,575	138,709	597,607	117,375
2027	668,736	139,014	603,165	117,539
2028	674,955	139,319	608,774	117,704
2029	681,233	139,626	614,436	117,869
2030	687,512	139,932	620,100	118,034

1) Source: Appendix A, Tables A-14
2) Source: Appendix A, Tables A-15
3) Source: Appendix A, Tables A-16

Apportionment of Demand by Residential Unit Type and Size

Tables A-2, A-3, and A-4 present the residents per housing unit for the residential land by size for each service area. The tables present the residents per housing unit for combined residential land use based on weighted seasonal population for emergency medical services and fire rescue impact fee. In the case of parks impact fee, residents per housing unit is based on permanent population. This analysis includes all housing units, both occupied and vacant.

To estimate the residents per housing unit by square footage tiers, an additional analysis was undertaken. This analysis utilizes the persons per household (PPH) figures by home size obtained from the American Community Survey (ACS) to develop a ratio. This ratio is then multiplied by the weighted average residents per housing unit in Volusia County to obtain the residents per housing unit for the square footage tiers.

Table A-2

Population per Household by Housing Type, Countywide

Housing Type	Population	Housing Units[3]	Ratio[4]	Residents / Housing Units[5]	Residents / Housing Units with Seasonal Adjustment[6]
1,200 sf & Under			82%	1.67	1.85
1,201 sf to 1,700 sf			94%	1.92	2.12
1,701 sf to 2,200 sf			100%	2.04	2.26
2,201 sf to 3,000 sf			105%	2.14	2.37
3,001 sf & Over			115%	2.35	2.60
Residential: Population[1]	**535,280**	**262,224**		**2.04**	
Residential: Population with Seasonal Adjustment	**593,626**				**2.26**

1) Source: 2020 ACS 5-Yr Estimates, Table B2503
2) Source: Population (Item 1) adjusted for peak seasonal population
3) Source: 2020 ACS 5-Yr Estimates, Table DP04
4) Ratios developed based on national persons per housing unit data derived from the 2019 American Housing Survey
5) Population (Item 1) divided by housing units (Item 3) multiplied by ratio (Item 4)
6) Population with seasonal adjustment (Item 2) divided by housing units (Item 3) multiplied by ratio (Item 4)

Table A-3

Population per Household by Housing Type, Fire Rescue Service Area

Housing Type	Population[1]	Housing Units[2]	Ratio[3]	Residents / Housing Units[4]
1,200 sf & Under			82%	1.90
1,201 sf to 1,700 sf			94%	2.18
1,701 sf to 2,200 sf			100%	2.32
2,201 sf to 3,000 sf			105%	2.44
3,001 sf & Over			115%	2.67
Residential:	**139,091**	**59,911**		**2.32**

1) Source: 2020 ACS 5-Yr Estimates, Table B25033 (adjusted for peak seasonal population)
2) Source: 2020 ACS 5-Yr Estimates, Table DP04
3) Ratios developed based on national PPH data derived from the 2019 American Housing Survey
4) Population (Item 1) divided by housing units (Item 2)

Table A-4

Population per Household by Housing Type, Unincorporated County

Housing Type	Population[1]	Housing Units[2]	Ratio[3]	Residents / Housing Units[4]
1,200 sf & Under			82%	1.70
1,201 sf to 1,700 sf			94%	1.95
1,701 sf to 2,200 sf			100%	2.07
2,201 sf to 3,000 sf			105%	2.17
3,001 sf & Over			115%	2.38
Residential:	**118,478**	**57,226**		**2.07**

1) Source: 2020 ACS 5-Yr Estimates, Table B2503
2) Source: 2020 ACS 5-Yr Estimates, Table DP04
3) Ratios developed based on national PPH data derived from the 2019 American Housing Survey
4) Population (Item 1) divided by housing units (Item 2)

Functional Population

Functional population, as used in the impact fee analysis, is a generally accepted methodology for several impact fee areas, such as fire rescue and EMS, and is based on the assumption that demand for certain facilities is generally proportional to the presence of people at a land use, including residents, employees, and visitors. It is not enough to simply add resident population to the number of employees, since the service demand characteristics can vary considerably by type of industry.

Functional population is the equivalent number of people occupying space within a community on a 24-hour-day, 7-days-a-week basis. A person living and working in the community will have the functional population coefficient of 1.0. A person living in the community but working elsewhere may spend only 16 hours per day in the community on weekdays and 24 hours per day on weekends for a functional population coefficient of 0.76 (128-hour presence divided by 168 hours in one week). A person commuting into the county to work five days per week would have a functional population coefficient of 0.30 (50-hour presence divided by 168 hours in one week). Similarly, a person traveling into the community to shop at stores, perhaps averaging 8 hours per week, would have a functional population coefficient of 0.05.

Functional population thus tries to capture the presence of all people within the community, whether residents, workers, or visitors, to arrive at a total estimate of effective population needed to be served.

This form of adjusting population to help measure real facility needs replaces the population approach of merely weighting residents two-thirds and workers one-third (Nelson and Nicholas 1992)[4]. By estimating the functional and weighted population per unit of land use across all major land uses in a community, an estimate of the demand for certain facilities and services in the present and future years can be calculated. The following paragraphs explain how functional population is calculated for residential and non-residential land uses.

Residential Functional Population

Developing the residential component of functional population is simpler than developing the non-residential component. It is generally estimated that people spend one-half to three-fourths of their time at home and the rest of each 24-hour day away from their place of residence. In developing the residential component of Volusia County's functional population, an analysis of the County's population and employment characteristics was conducted. Tables A-5 and A-6 present this analysis for the County. Based on this analysis, Volusia residents, on average, spend 16.6 hours each day at their place of residence. This corresponds to approximately 69 percent of each 24-hour day at their place of residence and the other 31 percent away from home.

It is important to note that these calculations were reviewed on a countywide basis as well as for the fire rescue service area. There was no significant difference between the estimated residential

[4] Arthur C. Nelson and James C. Nicholas, "Estimating Functional Population for Facility Planning," *Journal of Urban Planning and Development* 118(2): 45-58 (1992)

functional population coefficient. As such, the countywide figure is utilized for the fire rescue service area.

Table A-5
Population and Employment Characteristics

Item/Calculation Step	Figure
Total workers living in Volusia County[1]	202,380
Volusia County Population (2016)[2]	521,882
Total workers as a percent of population[3]	**38.8%**
School age population (5-17 years) (2016)[4]	67,933
School age population as a percent of population[5]	**13.0%**
Population net of workers and school age population[6]	251,569
Other population as a percent of total population[7]	**48.2%**

1) Source: Census Transportation Planning Package (CTPP) 2016
2) Source: Appendix A, Table A-14
3) Total workers (Item 1) divided by population (Item 2)
4) Source: 2016 ACS 5-Yr Estimates, Table S01001
5) Total school age population (Item 4) divided by 2016 population (Item 2)
6) Volusia County population (Item 2) less total workers (Item 1) and school age population (Item 4)
7) Population net of workers and school age population (Item 6) divided by 2016 population (Item 2)

Table A-6
Residential Coefficient for 24-Hour Functional Population

Population Group	Hours at Residence[1]	Percent of Population[2]	Effective Hours[3]
Workers	13	38.8%	5.0
Students	15	13.0%	2.0
Other	20	48.2%	9.6
Total Hours at Residence[4]			16.6
Residential Functional Population Coefficient[5]			**69.2%**

1) Estimated
2) Source: Appendix A, Table A-5
3) Hours at residence (Item 1) multiplied by percent of population (Item 2)
4) Sum of effective hours
5) Sum of effective hours (Item 4) divided by 24

The resulting percentage from Table A-6 is used in Table A-7 in the calculation of the residential coefficient for the 24-hour functional population. The final calculations are presented in Tables A-8 and A-9.

Non-Residential Functional Population

Given the varying characteristics of non-residential land uses, developing the estimates of functional residents for non-residential land uses is more complicated than developing estimated functional residents for residential land uses. Nelson and Nicholas originally introduced a method for estimating functional resident population, which is now widely used in the industry. This method uses trip generation data from the Institute of Transportation Engineers' (ITE) Trip Generation Manual and Benesch's Trip Characteristics Database, information of passengers per vehicle, workers per vehicle, length of time spent at the land use, and other variables.

Specific calculations include:

- Total one-way trips per employee (ITE trips multiplied by 50 percent to avoid double counting entering and exiting trips as two trips).
- Visitors per impact unit based on occupants per vehicle (trips multiplied by occupants per vehicle less employees).
- Worker hours per week per impact unit (such as nine worker-hours per day multiplied by five days in a work week).
- Visitor hours per week per impact unit (visitors multiplied by number of hours per day times relevant days in a week, such as five for offices and seven for retail shopping).
- Functional population coefficients per employee developed by estimating time spent by employees and visitors at each land use.

Table A-7 shows the functional population coefficients for residential and non-residential uses in Volusia County, which are used to estimate the 2022 functional population for the countywide and fire rescue service area in Tables A-8 and A-9.

Table A-7

General Functional Population Coefficients

Population/ Employment Category	ITE LUC	Employee Hours In-Place[1]	Trips per Employee[2]	One-Way Trips per Employee[3]	Journey-to-Work Occupants per Trip[4]	Daily Occupants per Trip[5]	Visitors per Employee[6]	Visitor Hours per Trip[1]	Days per Week[7]	Functional Population Coefficient[8]
Population									7.00	0.692
Natural Resources	n/a	9.00	3.10	1.55	1.32	1.38	0.09	1.00	7.00	0.379
Construction	110	9.00	3.10	1.55	1.32	1.38	0.09	1.00	5.00	0.271
Manufacturing	140	9.00	2.51	1.26	1.32	1.38	0.08	1.00	5.00	0.270
Transportation, Communication, Utilities	110	9.00	3.10	1.55	1.32	1.38	0.09	1.00	5.00	0.271
Wholesale Trade	150	9.00	5.05	2.53	1.32	1.38	0.15	1.00	5.00	0.272
Retail Trade	820	9.00	50.50	25.25	1.24	1.73	12.37	1.50	7.00	1.148
Finance, Insurance, Real Estate	710	9.00	3.33	1.67	1.24	1.73	0.82	1.00	5.00	0.292
Services[9]	n/a	9.00	20.32	10.16	1.24	1.73	4.98	1.00	6.00	0.499
Government[10]	730	9.00	7.45	3.73	1.24	1.73	1.83	1.00	7.00	0.451

(1) Estimated

(2) Trips per employee represents all trips divided by the number of employees and is based on Trip Generation 11th Edition (Institute of Transportation Engineers 2021) as follows:

ITE Code 110 at 3.10 weekday trips per employee, Volume 2 - Industrial Land Uses, page 39

ITE Code 140 at 2.51 weekday trips per employee, Volume 2 - Industrial Land Uses, page 76

ITE Code 150 at 5.05 weekday trips per employee, Volume 2 - Industrial Land Uses, page 104

ITE Code 710 at 3.33 weekday trips per employee, Volume 2 Office Land Uses, page 716

ITE Code 730 at 7.45 weekday trips per employee, Volume 2 Office Land Uses, page 795

ITE Code 820 (page 186) based on blended average of trips by retail center size calculated below.

Trips per retail employee from the following table:

Retail Scale	*Trip Rate*	*Sq Ft per Employee*[11]	*Trips per Employee*	*Share*	*Weighted Trips*
Retail (Less than 40k sq. ft.)	54.45	802	44	50.0%	22.00
Retail (40k to 150k sq. ft.)	67.52	975	66	35.0%	23.10
Retail (greater than 150k sq. ft.	37.01	963	36	15.0%	5.40
Sum of Weighted Trips/1k sq.ft.					50.50

(3) Trip per employee (Item 2) multiplied by 0.5.

(4) Journey-to-Work Occupants per Trip from 2001 Nationwide Household Travel Survey (FHWA 2001) as follows:

1.32 occupants per Construction, Manufacturing, TCU, and Wholesale trip

1.24 occupants per Retail Trade, FIRE, and Services trip

(5) Daily Occupants per Trip from 2001 Nationwide Household Travel Survey (FHWA 2001) as follows:

1.38 occupants per Construction, Manufacturing, TCU, and Wholesale trip

1.73 occupants per Retail Trade, FIRE, and Services trip

(6) [Daily occupants per trip (Item 5) multiplied by one-way trips per employee (Item 3)] - [(Journey-to-Work occupants per trip (Item 4) multiplied by one-way trips per employee (Item 3)]

(7) Typical number of days per week that indicated industries provide services and relevant government services are available.

(8) Table A-6 for residential and the equation below to determine the Functional Population Coefficient per Employee for all land-use categories except residential includes the following:

$$\frac{(\text{Days per Week} \times \text{Employee Hours in Place}) + (\text{Visitors per Employee} \times \text{Visitor Hours per Trip} \times \text{Days per Week})}{(24 \text{ Hours per Day} \times 7 \text{ Days per Week})}$$

(9) Trips per employee for the services category is the average trips per employee for the following service related land use categories: quality restaurant, high-turnover restaurant, supermarket, hotel, motel, elementary school, middle school, high school, hospital, medical office, and church. Source for the trips per employee figure from ITE, 11th ed., when available, or else derived from the square feet per employee for the appropriate land use category from the Energy Information Administration from Table B-1 of the Commercial Energy Building Survey, 2003.

(10) Includes Federal Civilian Government, Federal Military Government, and State and Local Government categories.

(11) Square feet per retail employee from the Energy Information Administration from Table B-1 of the Commercial Energy Building Survey, 2003

Table A-8

Functional Population, Countywide

Population Category	Volusia County Baseline Data[1]	Functional Resident Coefficient[2]	Functional Population[3]
2022 Weighted Population	632,409	0.692	437,627
Employment Category			
Natural Resources	3,202	0.379	1,214
Construction	17,858	0.271	4,840
Manufacturing	12,043	0.270	3,252
Transportation, Communication, and Utilities	9,857	0.271	2,671
Wholesale Trade	5,937	0.272	1,615
Retail Trade	33,479	1.148	38,434
Finance, Insurance, and Real Estate	28,318	0.292	8,269
Services	138,126	0.499	68,925
Government Services	20,755	0.451	9,361
Total Employment by Category Population[4]			138,581
2022 Total Functional Population[5]			**576,208**

1) Source: Table A-1 for population and Woods & Poole for employment data
2) Source: Table A-7
3) The functional population is Volusia County baseline data (Item 1) multiplied by the functional resident coefficient (Item 2)
4) The total employment population by category is the sum of the employment figures from the nine employment categories (e.g., natural resources, construction, etc.)
5) The total functional population is the sum of the residential functional population and the employment functional population

Table A-9
Functional Population, Fire Rescue Service Area

Population Category	Volusia County Baseline Data[1]	Functional Resident Coefficient[2]	Functional Population[3]
2022 Weighted Population	137,495	0.692	95,147
Employment Category			
Natural Resources	2,036	0.379	772
Construction	3,768	0.271	1,021
Manufacturing	2,421	0.270	654
Transportation, Communication, and Utilities	1,370	0.271	371
Wholesale Trade	796	0.272	217
Retail Trade	4,185	1.148	4,804
Finance, Insurance, and Real Estate	3,058	0.292	893
Services	16,437	0.499	8,202
Government Services	2,947	0.451	1,329
Total Employment by Category Population[4]			18,263
2022 Total Functional Population[5]			**113,410**

1) Source: Table A-1 for population and Woods & Poole for employment data
2) Source: Table A-7
3) The functional population is Volusia County baseline data (Item 1) multiplied by the functional resident coefficient (Item 2)
4) The total employment population by category is the sum of the employment figures from the nine employment categories (e.g., natural resources, construction, etc.)
5) The total functional population is the sum of the residential functional population and the employment functional population

Table A-10 presents the County's annual functional population figures for both countywide and the fire rescue service area from 2000 through 2030, based on the 2022 functional population figures from Tables A-8 and A-9, and the annual population growth rates from the population figures previously presented in Table A-1.

Table A-10

Functional Population (2000 - 2030)

Year	Functional Population	
	Volusia Countywide[(1)]	Service Area for Fire[(1)]
2000	443,402	103,492
2001	450,230	105,914
2002	457,209	107,333
2003	465,210	108,342
2004	475,491	109,122
2005	484,573	109,755
2006	492,908	110,293
2007	498,429	110,756
2008	499,226	111,166
2009	496,430	111,533
2010	495,785	112,080
2011	497,917	112,080
2012	500,905	112,069
2013	504,061	112,058
2014	509,303	112,058
2015	516,026	112,058
2016	523,199	112,058
2017	529,791	112,058
2018	537,314	112,058
2019	540,592	111,206
2020	545,998	110,261
2021	569,094	113,161
2022	**576,208**	**113,410**
2023	583,411	113,660
2024	590,704	113,910
2025	598,147	114,161
2026	603,710	114,412
2027	609,325	114,664
2028	614,992	114,916
2029	620,711	115,169
2030	626,422	115,422

Source: Tables A-8 (Countywide) and A-9 (Fire Rescue) for 2021. Other years are based on growth rates for Volusia County weighted seasonal population; Table A-1

Functional Residents by Specific Land Use Category

When a wide range of land uses impact services, an estimate of that impact is needed for each land use. This section presents functional population coefficient estimates by residential and non-residential land uses.

Residential and Transient Land Uses

As mentioned previously, different functional population coefficients need to be developed for each impact fee service area to be analyzed. For residential and transient land uses, these coefficients are displayed in Tables A-11 and A-12. The average number of persons per housing unit was calculated for the residential categories by size of home. The analysis is based on information obtained from the 2020 ACS. Besides the residential land uses, Tables A-11 and A-12 also include transient land uses, such as hotels, motels, congregate care facilities (CCF), and nursing homes. Secondary sources, such as the New Smyrna Beach Area Visitors Bureau, Daytona Beach Area Convention and Visitors Bureau, West Volusia Tourism Advertising Authority and the Florida Department of Elderly Affairs, are used to determine the occupancy rate for hotels, motels, congregate living facilities, and nursing homes.

Non-Residential Land Uses

A similar approach is used to estimate functional residents for non-residential land uses. Table A-13 presents basic assumptions and calculations, such as trips per unit, trips per employee, employees per impact unit, one-way trips per impact unit, worker hours, occupants per vehicle trip, visitors (patrons, etc.) per impact unit, visitor hours per trip, and days per week for non-residential land uses. The final column shows the estimated functional resident coefficients by land use. These coefficients by land use create the demand component for the select impact fee programs and will be used in the calculation of the impact fee per unit for each land use category in the select impact fee schedules.

Table A-11

24-Hour Functional Residents for Residential and Transient Land Uses, Countywide

Land Use	Impact Unit	ITE LUC[1]	Residents/ Visitors Per Unit[2]	Occupancy Rate[3]	Adjusted Residents per Unit[4]	Peak Visitor Hours at Place[5]	Workers per Unit[6]	Work Day Hours[7]	Days per Week[8]	Functional Residents per Unit[9]
Residential										
1,200 sf & Under	du	210/215/ 220/221/ 222/240	1.85	-	-	-	-	-	-	1.28
1,201 sf to 1,700 sf	du		2.12	-	-	-	-	-	-	1.47
1,701 sf to 2,200 sf	du		2.26	-	-	-	-	-	-	1.56
2,201 sf to 3,000 sf	du		2.37	-	-	-	-	-	-	1.64
3,001 sf & Over	du		2.60	-	-	-	-	-	-	1.80
Transient, Assisted, Group										
Hotel	room	310	3.35	70%	2.35	12	0.56	9	7	1.39
Motel	room	320	3.35	70%	2.35	12	0.13	9	7	1.22
Nursing Home	1,000 sf	620	2.76	71%	1.96	20	2.04	9	7	2.40

(1) Land use code from the Institute of Transportation Engineers (ITE) Trip Generation Handbook, 11th Edition

(2) Estimates for the residential land uses from Table A-2; estimates for the hotel/motel land use is based on data obtained from New Smyrna Beach Area Visitors Bureau, Daytona Beach Area Convention and Visitors Bureau, and West Volusia Tourism Advertising Authority. Nursing home estimate is based on ITE 11th Edition data and assumption of 1 person per bed.

(3) Source for hotel/motel occupancy: New Smyrna Beach Area Visitors Bureau, Daytona Beach Area Convention and Visitors Bureau, and West Volusia Tourism Advertising Authority. Hotel/motel occupancy rate based on estimated 2021 hotel/motel occupancy rate. Source for nursing home/CLF occupancy rate is the Florida Department of Elderly Affairs, Volusia County Profile. Nursing home/CLF occupancy rate shows occupancy rate in 2021.

(4) Residents per unit times occupancy rate

(5), (7), (8) Estimated

(6) Adapted from ITE Trip Generation Handbook, 11th Edition

(9) For residential this is Residents Per Unit times 0.692. For Transient, Assisted, and Group it is:

$$\frac{[(\text{Adjusted Residents per Unit} \times \text{Hours at Place} \times \text{Days per Week}) + (\text{Workers Per Unit} \times \text{Work Hours Per Day} \times \text{Days per Week})]}{(24 \text{ Hours per Day} \times 7 \text{ Days per Week})}$$

Table A-12

24-Hour Functional Residents for Residential Land and Transient Land Uses

Fire Rescue Service Area

Land Use	Impact Unit	ITE LUC[1]	Residents/ Visitors Per Unit[2]	Occupancy Rate[3]	Adjusted Residents per Unit[4]	Peak Visitor Hours at Place[5]	Workers per Unit[6]	Work Day Hours[7]	Days per Week[8]	Functional Residents per Unit[9]
Residential										
1,200 sf & Under	du	210/215/ 220/221/ 222/240	1.90	-	-	-	-	-	-	1.31
1,201 sf to 1,700 sf	du		2.18	-	-	-	-	-	-	1.51
1,701 sf to 2,200 sf	du		2.32	-	-	-	-	-	-	1.61
2,201 sf to 3,000 sf	du		2.44	-	-	-	-	-	-	1.69
3,001 sf & Over	du		2.67	-	-	-	-	-	-	1.85
Transient, Assisted, Group										
Hotel	room	310	3.35	70%	2.35	12	0.56	9	7	1.39
Motel	room	320	3.35	70%	2.35	12	0.13	9	7	1.22
Nursing Home	1,000 sf	620	2.76	71%	1.96	20	2.04	9	7	2.40

(1) Land use code from the Institute of Transportation Engineers (ITE) Trip Generation Handbook, 11th Edition

(2) Estimates for the residential land uses from Table A-2; estimates for the hotel/motel land use is based on data obtained from New Smyrna Beach Area Visitors Bureau, Daytona Beach Area Convention and Visitors Bureau, and West Volusia Tourism Advertising Authority. Nursing home estimate is based on ITE 11th Edition data and assumption of 1 person per bed.

(3) Source for hotel/motel occupancy: New Smyrna Beach Area Visitors Bureau, Daytona Beach Area Convention and Visitors Bureau, and West Volusia Tourism Advertising Authority. Hotel/motel occupancy rate based on estimated 2021 hotel/motel occupancy rate. Source for nursing home/CLF occupancy rate is the Florida Department of Elderly Affairs, Volusia County Profile. Nursing home/CLF occupancy rate shows occupancy rate in 2021.

(4) Residents per unit times occupancy rate

(5), (7), (8) Estimated

(6) Adapted from ITE Trip Generation Handbook, 11th Edition

(9) For residential this is Residents Per Unit times 0.692. For Transient, Assisted, and Group it is:

$$\frac{[(\text{Adjusted Residents per Unit} \times \text{Hours at Place} \times \text{Days per Week}) + (\text{Workers Per Unit} \times \text{Work Hours Per Day} \times \text{Days per Week})]}{(24 \text{ Hours per Day} \times 7 \text{ Days per Week})}$$

Table A-13 (Continued)

24-Hour Functional Population Estimates for Non-Residential Land Uses

ITE LUC[1]	Land Use	Impact Unit	Trips per Unit[2]	Trips per Employee[3]	Employees per Unit[4]	One-Way Factor @ 50%[5]	Worker Hours[6]	Occupants per Trip[7]	Visitors[8]	Visitor Hours per Trip[9]	Days per Week[10]	Functional Residents per Unit[11]
	RECREATIONAL:											
411	Public Park	acre	0.78	59.53	0.01	0.39	9	2.01	0.77	1.50	7	0.05
430	Golf Course	hole	30.38	20.52	1.48	15.19	9	2.01	29.05	0.25	7	0.86
445	Movie Theater	1,000 sf	82.30	53.12	1.55	41.15	9	2.01	81.16	1.00	7	3.96
	INSTITUTIONS:											
560	Church	1,000 sf	7.60	20.64	0.37	3.80	9	1.80	6.47	1.00	7	0.41
565	Day Care Center	1,000 sf	49.63	21.38	2.32	24.82	9	1.80	42.36	0.15	5	0.81
	MEDICAL:											
610	Hospital	1,000 sf	10.77	3.77	2.86	5.39	9	1.60	5.76	1.00	7	1.31
	OFFICE:											
710	General Office	1,000 sf	10.84	3.33	3.26	5.42	9	1.23	3.41	1.00	5	0.97
714	Corporate Headquarters Bldg	1,000 sf	7.95	2.31	3.44	3.98	9	1.23	1.46	1.00	5	0.96
720	Medical Office 10,000 sf & Under	1,000 sf	23.83	8.71	2.74	11.92	9	1.60	16.33	1.00	5	1.22
	Medical Office greater than 10,000 sf	1,000 sf	34.21	8.71	3.93	17.11	9	1.60	23.45	1.00	5	1.75
	RETAIL:											
822	Retail/Shopping Center less than 40,000 sfgla	1,000 sfgla	54.45	17.42	3.13	27.23	9	1.73	43.98	0.50	7	2.09
821	Retail/Shopping Center 40,000 to 150,000 sfgla	1,000 sfgla	67.52	17.42	3.88	33.76	9	1.73	54.52	0.50	7	2.59
820	Retail/Shopping Center greater than 150,000 sfgla	1,000 sfgla	37.01	17.42	2.12	18.51	9	1.73	29.90	0.50	7	1.42
840/841	New/Used Automobile Sales	1,000 sf	24.58	11.84	2.08	12.29	9	1.73	19.18	1.00	7	1.58
849	Tire Superstore/Auto Repair	bay	30.55	16.78	1.82	15.28	9	1.73	24.61	1.00	7	1.71
850	Supermarket	1,000 sf	94.48	43.86	2.15	47.24	9	1.73	79.58	0.50	7	2.46
862	Home Improvement Superstore	1,000 sf	30.74	n/a	2.50	15.37	9	1.73	24.09	1.00	7	1.94
880/881	Pharmacy/Drug Store with and w/out Drive-Thru	1,000 sf	103.86	69.17	1.50	51.93	9	1.73	88.34	0.35	7	1.85
890	Furniture Store	1,000 sf	6.30	10.93	0.58	3.15	9	1.73	4.87	0.50	7	0.32
	SERVICES:											
911	Bank/Savings w/out Drive-Thru	1,000 sf	57.94	32.73	1.77	28.97	9	1.73	48.35	0.35	6	1.17
912	Bank/Savings w/Drive-Thru	1,000 sf	103.73	32.73	3.17	51.87	9	1.73	86.57	0.15	6	1.48
931	Fine Dining/Quality Restaurant	1,000 sf	86.03	17.90	4.81	43.02	9	2.10	85.53	1.00	7	5.37
932	High-Turnover (Sit-Down) Restaurant	1,000 sf	103.46	21.26	4.87	51.73	9	2.10	103.76	0.75	7	5.07
934	Fast Food Resturant w/Drive-Thru	1,000 sf	479.17	44.52	10.76	239.59	9	2.10	492.38	0.25	7	9.16
941	Quick Lubrication Vehicle Shop	bay	40.00	16.00	2.50	20.00	9	1.73	32.10	0.50	7	1.61
943	Automobile Parts and Service Center	1,000 sf	16.60	11.44	1.45	8.30	9	1.73	12.91	1.00	7	1.08
944	Gas Station w/Convenience Store less than 2,000 sf	fuel pos.	172.01	275.78	0.62	86.01	9	1.73	148.18	0.20	7	1.47
945	Gas Station w/Convenience Store 2,000 to 5,499 sf	fuel pos.	264.38	241.21	1.10	132.19	9	1.73	227.59	0.20	7	2.31
	Gas Station w/Convenience Store 5,500+ sf	fuel pos.	345.75	241.21	1.43	172.88	9	1.73	297.65	0.20	7	3.02

Table A-13 Continued

24-Hour Functional Population Estimates for Non-Residential Land Uses

ITE LUC[1]	Land Use	Impact Unit	Trips per Unit[2]	Trips per Employee[3]	Employees per Unit[4]	One-Way Factor @ 50%[5]	Worker Hours[6]	Occupants per Trip[7]	Visitors[8]	Visitor Hours per Trip[9]	Days per Week[10]	Functional Residents per Unit [11]
	INDUSTRIAL:											
110	General Industrial	1,000 sf	4.87	3.10	1.57	2.44	9	1.78	2.77	1.00	5	0.50
140	Manufacturing	1,000 sf	4.75	2.51	1.89	2.38	9	1.78	2.35	1.00	5	0.58
150	Warehouse	1,000 sf	1.71	5.05	0.34	0.86	9	1.78	1.19	0.75	5	0.12
151	Mini-Warehouse	1,000 sf	1.46	61.90	0.02	0.73	9	1.78	1.28	0.75	7	0.05

Sources:

(1) Land use code found in the Institute of Transportation Engineers (ITE) Trip Generation Handbook, 11th Edition

(2) Land uses and trip generation rates consistent with those included in the Transportation Impact Fee Update Study

(3) Trips per employee from ITE Trip Generation Handbook, 11th Edition, when available

(4) Trips per impact unit divided by trips per person (usually employee). When trips per person are not available, the employees per unit is estimated.

(5) Trips per unit (Item 2) multiplied by 50 percent

(6), (9), (10) Estimated

(7) Nationwide Personal Transportation Survey 2017

(8) [(One-way Trips/Unit X Occupants/Trip) - Employees].

(11) [(Workers X Hours/Day X Days/Week) + (Visitors X Hours/Visit X Days/Week)]/(24 Hours x 7 Days)

Table A-14

Weighted Seasonal Population Estimates, Countywide

Year	Permanent Population[1]	Seasonal Population[2]	Total Weighted Season Pop.[3]
2000	443,343	43,252	486,595
2001	450,254	43,837	494,091
2002	457,241	44,517	501,758
2003	465,240	45,296	510,536
2004	475,542	46,299	521,841
2005	484,615	47,182	531,797
2006	492,969	47,996	540,965
2007	498,480	48,532	547,012
2008	499,273	48,610	547,883
2009	496,456	48,335	544,791
2010	494,593	49,515	544,108
2011	496,655	49,814	546,469
2012	499,610	50,111	549,721
2013	502,777	50,428	553,205
2014	507,995	50,952	558,947
2015	514,710	51,625	566,335
2016	521,882	52,345	574,227
2017	528,438	53,003	581,441
2018	535,961	53,757	589,718
2019	543,369	49,939	593,308
2020	553,543	45,709	599,252
2021	563,358	61,244	624,602
2022	**570,400**	**62,009**	**632,409**
2023	577,530	62,784	640,314
2024	584,749	63,570	648,319
2025	592,100	64,369	656,469
2026	597,607	64,968	662,575
2027	603,165	65,571	668,736
2028	608,774	66,181	674,955
2029	614,436	66,797	681,233
2030	620,100	67,412	687,512

1) BEBR-Medium projection for 2050. Interim years were interpolated to smooth out annual population growth rates
2) Seasonal, occasional, and recreational population is estimated by multiplying permanent population (Item 1) by the ratio of seasonal to permanent population from the 2000 and 2010 U.S. Census. The figures are weighed by 0.42 to account for seasonal residents only residing in Volusia County for a portion of the year (assume 5 months; 5 months divided by 12 months = 0.42).
3) Sum of permanent population (Item 1) and seasonal population (Item 4).

Table A-15

Weighted Seasonal Population Estimates, Fire Rescue Service Area

Year	Permanent Population[(1)]	Seasonal Population[(2)]	Total Weighted Season Pop.[(3)]
2000	113,597	11,874	125,471
2001	116,259	12,148	128,407
2002	117,817	12,311	130,128
2003	118,922	12,427	131,349
2004	119,779	12,517	132,296
2005	120,479	12,590	133,069
2006	121,071	12,651	133,722
2007	121,584	12,706	134,290
2008	122,036	12,753	134,789
2009	122,441	12,795	135,236
2010	122,807	13,091	135,898
2011	122,805	13,091	135,896
2012	122,795	13,090	135,885
2013	122,789	13,089	135,878
2014	122,784	13,089	135,873
2015	122,780	13,088	135,868
2016	122,777	13,088	135,865
2017	122,775	13,088	135,863
2018	122,772	13,087	135,859
2019	122,770	12,056	134,826
2020	122,767	10,911	133,678
2021	123,042	14,151	137,193
2022	**123,313**	**14,182**	**137,495**
2023	123,584	14,214	137,798
2024	123,856	14,245	138,101
2025	124,128	14,277	138,405
2026	124,401	14,308	138,709
2027	124,675	14,339	139,014
2028	124,949	14,370	139,319
2029	125,224	14,402	139,626
2030	125,499	14,433	139,932

1) BEBR-Medium projection for 2050. Interim years were interpolated to smooth out annual population growth rates.
2) Seasonal, occasional, and recreational population is estimated by multiplying permanent population (Item 1) by the ratio of seasonal to permanent population from the 2000 and 2010 U.S. Census. The figures are weighed by 0.42 to account for seasonal residents only residing in Volusia County for a portion of the year (assume 5 months; 5 months divided by 12 months = 0.42).
3) Sum of permanent population (Item 1) and seasonal population (Item 4)

Table A-16

Volusia County Permanent Population Estimates

Year	Permanent Population	
	Countywide Population	Unincorporated Population
2000	443,343	106,880
2001	450,254	109,706
2002	457,241	111,358
2003	465,240	112,531
2004	475,542	113,441
2005	484,615	114,184
2006	492,969	114,813
2007	498,480	115,357
2008	499,273	115,837
2009	496,456	116,266
2010	494,593	116,655
2011	496,655	116,580
2012	499,610	116,537
2013	502,777	116,506
2014	507,995	116,482
2015	514,710	116,462
2016	521,882	116,446
2017	528,438	116,431
2018	535,961	116,419
2019	543,369	116,407
2020	553,543	116,397
2021	563,358	116,557
2022	**570,400**	**116,720**
2023	577,530	116,883
2024	584,749	117,047
2025	592,100	117,211
2026	597,607	117,375
2027	603,165	117,539
2028	608,774	117,704
2029	614,436	117,869
2030	620,100	118,034

Source: BEBR-Medium projection for 2050. Interim years were interpolated to smooth out annual population growth rates.

Table A-17
Volusia County Service Areas

Volusia County/ Cities	Road	Emergency Medical Services	Fire Rescue	Community Parks	Regional Parks
City of Daytona Beach	Y	Y	N	N	Y
City of Daytona Beach Shores	Y	Y	N	N	Y
City of DeBary city	Y	Y	N	N	Y
City of DeLand	Y	Y	N	N	Y
City of Deltona	Y	Y	N	N	Y
City of Edgewater	Y	Y	N	N	Y
City of Holly Hill	Y	Y	N	N	Y
City of Lake Helen	Y	Y	Y	N	Y
City of New Smyrna Beach	Y	Y	N	N	Y
City of Oak Hill	Y	Y	Y	N	Y
City of Orange City	Y	Y	N	N	Y
City of Ormond Beach	Y	Y	N	N	Y
Town of Pierson	Y	Y	Y	N	Y
Town of Ponce Inlet	Y	Y	N	N	Y
City of Port Orange	Y	Y	N	N	Y
City of South Daytona	Y	Y	N	N	Y
Volusia Unincorporated	Y	Y	Y	Y	Y

Note: Y indicates services are provided in the area
Note: N indicates services are not provided in the area

Appendix B
Building and Land Values

Appendix B: Building and Land Values

This Appendix provides a summary of building and land value estimates for fire rescue, emergency medical services, and parks and recreation impact fees. Information related to cost estimates for transportation is included in Appendix D.

Building Values

To estimate building and recreational facility value, the following information was reviewed:

- Recent construction by Volusia County, as applicable;
- Cost estimates for future facilities, as applicable;
- Insurance values of existing facilities;
- Data from other jurisdictions; and
- Discussions with the representatives from Volusia County.

The following paragraphs provide a summary for each service area**.**

Fire Rescue Facilities

For fire rescue station/building cost estimates, the following analysis was used.

- The 2007 study used an estimated building value of $275 per square foot. Indexing this value to current dollars results in $403 per square foot.
- Construction projects completed by Volusia Fire Rescue in 2020 and 2021 include additions to Stations 36 and 23 with building cost ranging from $210 per square foot to $280 per square foot.
- Cost of future stations is estimated at $450 per square foot to $500 per square foot.
- The insurance values average $89 per square foot. Insurance values are considered to be conservative estimates since not all building components are insured. For example, the value of the foundation and other more permanent parts of the structure are typically excluded since they would not have to be rebuilt if the structure was damaged or lost.
- Benesch supplemented the local data with cost estimates utilized in recently completed fire rescue impact fee studies. This analysis reviewed data from studies conducted in 2021, which suggested that station costs ranged from $300 per square foot to $525 per square foot.

Given this information, building cost is estimated at $400 per square foot for fire stations.

Emergency Medical Services

The following analysis was conducted for emergency medical services cost estimates:

- The insurance values of the existing emergency medical services facilities averaged $270 per square foot for office space and $61 per square foot for warehouse/support space. Insurance values tend to be conservative estimates since not all components a building is insured.
- Benesch supplemented the local data with cost estimates utilized in recently completed EMS impact fee studies. This analysis reviewed data from studies conducted between 2016 and 2020, which ranged from $260 per square foot to $300 per square foot for building construction only.

Given this information, EMS station cost is estimated at $300 per square foot. In addition, cost of warehouse/support facilities is estimated at $100 per square foot for impact fee calculation purposes.

Parks and Recreation

Recreational facility values are based on the following:

- Between 2020 and 2022, the County built recreational facilities at local parks a cost of $420,000 per developed acre.
- The cost of building facilities at coastal parks averaged $1.2 million per acre, with a range of $925,000 per acre to $1.9 million per acre.
- Insurance values of existing facilities averaged $170,000 per developed acre for local parks, $35,000 per developed acre for district parks, and $185,000 per acre for coastal parks. As mentioned previously, insurance values are considered to be conservative estimates.
- Facility values obtained from other jurisdictions ranged from $60,000 per acre to $260,000 per acre for local parks and $4,000 per acre to $142,000 per acre for district parks.

Given these figures, recreational facility costs were estimated at $400,000 per developed acre for local parks and $1 million per developed acre for coastal parks. Because there were no recent district park construction, the value of recreational facilities were estimated at $80,000 per acre based on the ratio of insurance values.

Finally, facility value estimates per acre based on total acres were calculated based on the ratio of developed to total acreage for each park type. This conversion resulted in cost estimates of

$165,000 per acre for local parks, $12,000 per acre for district parks and $1 million per acre for coastal parks.

Land Values

For each impact fee program area, land values were determined based on the following analysis, as data available:

- Recent land purchases or appraisals for the related infrastructure (if any);
- Land value of current inventory as reported by the Volusia County Property Appraiser;
- Value of vacant land by size and by land use;
- Vacant land sales between 2017 and 2021 by size and by land use; and
- Discussions with the County representatives.

Fire Rescue

The land value estimate for fire rescue facilities is based on the following:

- The County did not purchase land for fire rescue facilities over the past five years. However, there are plans to purchase land in the future, which is estimated to cost up to $60,000 per acre.
- The value of parcels where current fire stations are located averages $62,600 per acre, with a range of $13,700 per acre to $265,100 per acre. Property Appraiser land value estimates for governmental entities tend to be on the low end since these properties are not subject to property tax and the values are not always updated to reflect the market conditions.
- Vacant land sales of similarly sized parcels (from 0.5 acres to 5 acres) within the fire rescue service area between 2017 and 2021 averaged $39,800 per acre with a median value of $31,000 per acre. These prices are higher for commercial properties, with an average of $105,600 per acre and a median value of $76,600 per acre.
- Similarly, the value of vacant land estimated by the Property Appraiser within the fire rescue service area averaged $29,200 per acre with a median value of $22,500 per acre for all vacant properties. For commercial properties, the average value is estimated at $54,900 per acre with a median value of $44,600 per acre.

Given this information and based on discussions with representatives from Volusia County, an average land value of **$60,000 per acre** is determined to be a reasonable estimate for fire rescue impact fee calculation purposes.

Emergency Medical Services

The land value estimate for emergency medical services facilities is based on the following:

- The value of parcels where current emergency medical service stations are located averages $86,000 per acre. Property Appraiser land value estimates for governmental entities tend to be on the low end since these properties are not subject to property tax and the values are not always updated to reflect the market conditions.
- Vacant land sales of similarly sized parcels (from 0.5 acres to 5 acres) countywide between 2017 and 2021 is $68,000 per acre with a median value of $39,000 per acre. These prices are higher for commercial properties, with an average of $197,000 per acre and a median value of $125,000 per acre.
- Similarly, the value of vacant land reported by the Property Appraiser averaged $52,000 per acre with a median value of $29,000 per acre for all vacant properties. For commercial properties, the average value is estimated at $120,000 per acre with a median value of $87,000 per acre.

Given this information and based on discussions with representatives from Volusia County, an average land value of **$60,000 per acre** is determined to be a reasonable, if not conservative, estimate for EMS impact fee calculation purposes.

Parks

The park land value estimate is based on the following:

- The County purchased land for three coastal parks in 2014-2015 at an average cost of $2.2 million per acre. The County also purchased land for a district park at a cost of $28,000 per acre.
- The value of parcels where current parks are located averages $21,300 per acre for local parks, $16,800 for district parks, and $1.1 million per acre for coastal parks. Property Appraiser land value estimates for governmental entities tend to be on the low end since these properties are not subject to property tax and the values are not always updated to reflect the market conditions.
- Vacant residential land sales of similarly sized parcels between 2017 and 2021 ranged depending on the service area:
    - Countywide vacant land sales averaged $58,000 per acre with a median value of $35,000 per acre.
    - Vacant land sales in the unincorporated county averaged $31,000 per acre with a median value of $27,000 per acre.

- Vacant land sales of parcels located on the coast ranging from 0.5 to 5 acres averaged $1.9 million per acre.

Given this information, an average land value of **$30,000 per acre for Local Parks, $40,000 per acre for District Parks, and $1 million per acre for Coastal Parks** are determined to be reasonable, if not conservative, estimates for parks land for impact fee calculation purposes.

Appendix C
Thoroughfare Road Impact Fee:
Demand Component

Appendix C: Thoroughfare Road Impact Fee: Demand Component

This appendix presents the detailed calculations for the demand component of the thoroughfare road impact fee study.

Interstate and Toll Facility Adjustment Factor

Table C-1 presents the interstate and toll facility adjustment factor used in the calculation of the thoroughfare road impact fee. This variable is based on data from the Central Florida Regional Planning Model v7, specifically the 2045 projected vehicle-miles of travel of all county-generated trips on all in-county roadways. It should be noted that the adjustment factor excludes all external-to-external trips, which represent traffic that goes through Volusia County, but does not necessarily stop in the county. This traffic is excluded from the analysis since it does not come from development within the county. The I/T adjustment factor is used to reduce the VMT that the impact fee charges for each land use.

Table C-1
Interstate/Toll Facility Adjustment Factor

Roadway	VMT (2045)	% VMT
Interstate/Toll Facilities	5,923,553	**32.5%**
Other Roads	12,322,999	67.5%
Total (All Roads)	**18,246,552**	**100.0%**

Source: CFRPM v7, 2045

City Road Adjustment Factor

Table C-2 presents the VMT adjustment factor for non-city roads used in the calculation of the road impact fee. This variable is based on data from the Central Florida Regional Planning Model v7, specifically the 2045 projected vehicle-miles of travel of all county-generated trips on all in-county roadways, excluding interstate and toll facilities. The city road adjustment factor is used to reduce the VMT that the impact fee charges for each land use.

Table C-2

City Road Adjustment Factor

Roadway	VMT (2045)	% VMT
State (Classified)	7,441,477	60.4%
County (Classified)	3,912,912	31.8%
Other (Classified)	328,811	2.7%
Non-Classified	639,799	5.2%
Total	**12,322,999**	**-**
Total (Classified Only)	**11,683,200**	**-**
Total County & State[(1)]	**11,354,389**	**97.2%**

Source: CFRPM v7, 2045

1) Total county and state VMT over the total (classified only) VMT

Single Family Residential Trip Generation Rate Tiering

As part of this study, the single family residential category is tiered to differentiate the thoroughfare road impact fees for different home sizes. To facilitate this, an analysis is completed on the comparative relationship between housing size and household travel behavior. This analysis utilizes data from the 2017 National Household Travel Survey (NHTS) and the 2019 American Housing Survey (AHS) to examine overall trip-making characteristics of households in the United States, which include the most recent data available.

Table C-3 presents the trip characteristics being utilized in the thoroughfare road fee schedule for the single family (detached) land use. The 2017 NHTS database is used to assess average annual household vehicle miles of travel (VMT) for various annual household income levels. In addition, the 2019 AHS database is used to compare median annual family/household incomes with housing unit size. It is important to recognize that the use of the income variable in each of these databases is completed simply to provide a convenient linking mechanism between household VMT from the NHTS and housing unit size from the AHS.

Table C-3

Calculated Single Family Trip Characteristics

Calculated Values Excluding Tiering	Trip Rate	Assessable Trip Length	Daily VMT
Single Family (Detached)	7.81	6.62	51.70

Source: Table C-9

Trip generation rate corresponds to average home size of 1,701 to 2,200 sq ft

The results of the NHTS and AHS analyses are included in Tables C-4 and C-5. First, the data shown in Table C-4 presents the average income in the U.S. for families/households living in the three housing tiers. As shown, the average income for housing units between 1,201 square feet and 2,200 square feet in size ($73,114) is higher than the overall average income for the U.S. ($63,008).

Table C-4

Annual Income by Housing Size

2019 AHS Average Income Data by Housing Size (Single Family, detached)	Annual Income[(1)]
1,200 sf or less	$50,304
1,201 to 1,700 sf	$62,408
1,701 to 2,200 sf	$73,114
2,201 to 3,000 sf	$81,847
Greater than 3,000 sf	$92,164
Average of All Houses	$63,008

Source: American Housing Survey for the United States in 2019

1) Weighted average of annual income for each tier

Next, as shown in Table C-5, annual average household VMT is calculated from the NHTS database for several different income levels and ranges related to the resulting AHS income data from Table C-4.

To calculate a corresponding trip rate for the new tiers it is necessary to rely on comparative ratios. As an example, consider the $50,304 annual income category. First, it is determined that the average annual household VMT for this income level is 17,850 miles. This figure is compared to the overall average annual VMT per household in the U.S. and normalized to the average of the $63,008 (18,754 miles) category to derive a ratio of 0.952 as shown in Table C-5. This figure is then normalized to the $73,114 (19,713 miles) category, as this tier corresponds to the average trip generation rate of 7.81 presented in Table C-3, resulting in a ratio of 0.891.

Table C-5

NHTS Annual VMT by Income Category

2017 NHTS Travel Data by Annual HH Income	Annual VMT/HH	Days	Daily VMT	Ratio to Mean	Normalized to 1.068
Average of $50,304	17,850	365	48.90	0.952	0.891
Average of $62,408	18,683	365	51.19	0.996	0.933
Total (All Homes)	18,754	365	51.38	1.000	-
Average 0f $73,114	20,027	365	54.87	1.068	1.000
Average of $81,847	21,428	365	58.71	1.143	1.070
Average of $92,164	22,823	365	62.53	1.217	1.140

Source: 2017 National Household Travel Survey Database, Federal Highway Administration

Next, the normalized ratio is applied to the daily VMT for the average single family housing unit size (1,200 sf or less) to generate a daily VMT of 46.06 for the new tier. As shown in Table C-6, this daily VMT figure is then divided by the proposed network trip length of 6.62 miles to obtain a typical trip rate of 6.96 trips per day.

Table C-6

Trip Generation Rate by Single Family Land Use Tier

Estimation of Trip Rate by Tier	Trip Rate[1]	Assessable Trip Length[2]	Daily VMT[3]	Ratio to Mean[4]
Single Family (Detached)				
1,200 sf or less	**6.96**	6.62	46.06	0.891
1,201 to 1,700 sf	**7.29**	6.62	48.24	0.933
1,701 to 2,200 sf	**7.81**	6.62	51.70	1.000
2,201 to 3,000 sf	**8.36**	6.62	55.32	1.070
Greater than 3,000 sf	**8.90**	6.62	58.94	1.140

1) Daily VMT (Item 3) divided by network trip length (Item 2) for each tiered single family land use category
2) Source: Table C-3
3) Ratio to the mean (Item 4) multiplied by total daily VMT for the 1,701 to 2,200 sf tier for each tiered single family land use category (Table C-3)
4) Source: Table C-5

Table C-7 illustrates the tiered thoroughfare road impact fee schedule.

Table C-7

Net Thoroughfare Road Impact Fee by Single Family Land Use Tier

Impact of Tiering on Fee Schedule	Trip Rate[1]	Assessable Trip Length	Daily VMT	Net Fee[2]
Single Family (Detached)				
1,200 sf or less	**6.96**	6.62	46.06	**$4,864**
1,201 to 1,700 sf	**7.29**	6.62	48.24	**$5,097**
1,701 to 2,200 sf	**7.81**	6.62	51.70	**$5,464**
2,201 to 3,000 sf	**8.36**	6.62	55.32	**$5,835**
Greater than 3,000 sf	**8.90**	6.62	58.94	**$6,215**

1) Source: Table C-6
2) Source: Appendix F, Table F-1

Florida Studies Trip Characteristics Database

The Florida Studies Trip Characteristics Database includes 340 studies on 42 different residential and non-residential land uses collected over the last 30 years, including studies conducted in Volusia County. Data from these studies include trip generation, trip length, and percent new trips for each land use. This information has been used in the development of impact fees and the creation of land use plan category trip characteristics for communities throughout Florida and the U.S.

Benesch estimates trip generation rates for all land uses in a road impact fee schedule using data from studies in the Florida Studies Database and the Institute of Transportation Engineers' (ITE) *Trip Generation* reference report (11th edition). In instances, when both ITE *Trip Generation* reference report and Florida Studies trip generation rate (TGR) data are available for a particular land use, the data is typically blended to increase the sample size and provide a more valid estimate of the average number of trips generated per unit of development. If no Florida Studies data is available, only TGR data from the ITE reference report is used in the fee calculation.

The trip generation rate for each respective land use is calculated using machine counts that record daily traffic into and out of the site studied. The traffic count hoses are set at entrances to residential subdivisions for the residential land uses and at all access points for non-residential land uses.

The trip length information is obtained through origin-destination surveys that ask respondents where they came from prior to arriving at the site and where they intended to go after leaving the site. The results of these surveys were used to estimate average trip length by land use.

The percent new trip variable is based on assigning each trip collected through the origin-destination survey process a trip type (primary, secondary, diverted, and captured). The percent new trip variable is then calculated as 1 minus the percentage of trips that are captured.

Table C-8

Land Use 151: Mini-Warehouse

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Orange Co, FL	89.6	2006	-	-	1.23	-	-	-	-	Orange County
Orange Co, FL	84.7	2006	-	-	1.39	-	-	-	-	Orange County
Orange Co, FL	93.0	2006	-	-	1.51	-	-	-	-	Orange County
Orange Co, FL	107.0	2007	-	-	1.45	-	-	-	-	Orange County
Orange Co, FL	77.0	2009	-	-	2.18	-	-	-	-	Tindale Oliver
Orange Co, FL	93.7	2012	-	-	1.15	-	-	-	-	Tindale Oliver
Total Size	545.0	6					Average Trip Length:	n/a		
ITE	880.0	16					Weighted Average Trip Length:	n/a		
Blended total	1,425.0									

Weighted Percent New Trip Average: -

Weighted Average Trip Generation Rate: 1.47

ITE Average Trip Generation Rate: 1.45

Blend of FL Studies and ITE Average Trip Generation Rate: 1.46

Table C-9

Land Use 210: Single Family - Detached

Location	Size / Units	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Sarasota Co, FL	76	Jun-93	70	70	10.03	-	6.00	-	60.18	Sarasota County
Sarasota Co, FL	79	Jun-93	86	86	9.77	-	4.40	-	42.99	Sarasota County
Sarasota Co, FL	135	Jun-93	75	75	8.05	-	5.90	-	47.50	Sarasota County
Sarasota Co, FL	152	Jun-93	63	63	8.55	-	7.30	-	62.42	Sarasota County
Sarasota Co, FL	193	Jun-93	123	123	6.85	-	4.60	-	31.51	Sarasota County
Sarasota Co, FL	97	Jun-93	33	33	13.20	-	3.00	-	39.60	Sarasota County
Sarasota Co, FL	282	Jun-93	146	146	6.61	-	8.40	-	55.52	Sarasota County
Sarasota Co, FL	393	Jun-93	207	207	7.76	-	5.40	-	41.90	Sarasota County
Hernando Co, FL	76	May-96	148	148	10.01	9a-6p	4.85	-	48.55	Tindale Oliver
Hernando Co, FL	128	May-96	205	205	8.17	9a-6p	6.03	-	49.27	Tindale Oliver
Hernando Co, FL	232	May-96	182	182	7.24	9a-6p	5.04	-	36.49	Tindale Oliver
Hernando Co, FL	301	May-96	264	264	8.93	9a-6p	3.28	-	29.29	Tindale Oliver
Charlotte Co, FL	135	Oct-97	230	-	5.30	9a-5p	7.90	-	41.87	Tindale Oliver
Charlotte Co, FL	142	Oct-97	245	-	5.20	9a-5p	4.10	-	21.32	Tindale Oliver
Charlotte Co, FL	150	Oct-97	160	-	5.00	9a-5p	10.80	-	54.00	Tindale Oliver
Charlotte Co, FL	215	Oct-97	158	-	7.60	9a-5p	4.60	-	34.96	Tindale Oliver
Charlotte Co, FL	257	Oct-97	225	-	7.60	9a-5p	7.40	-	56.24	Tindale Oliver
Charlotte Co, FL	345	Oct-97	161	-	7.00	9a-5p	6.60	-	46.20	Tindale Oliver
Charlotte Co, FL	368	Oct-97	152	-	6.60	9a-5p	5.70	-	37.62	Tindale Oliver
Charlotte Co, FL	383	Oct-97	516	-	8.40	9a-5p	5.00	-	42.00	Tindale Oliver
Charlotte Co, FL	441	Oct-97	195	-	8.20	9a-5p	4.70	-	38.54	Tindale Oliver
Charlotte Co, FL	1,169	Oct-97	348	-	6.10	9a-5p	8.00	-	48.80	Tindale Oliver
Collier Co, FL	90	Dec-99	91	-	12.80	8a-6p	11.40	-	145.92	Tindale Oliver
Collier Co, FL	400	Dec-99	389	-	7.80	8a-6p	6.40	-	49.92	Tindale Oliver
Lake Co, FL	49	Apr-02	170	-	6.70	7a-6p	10.20	-	68.34	Tindale Oliver
Lake Co, FL	52	Apr-02	212	-	10.00	7a-6p	7.60	-	76.00	Tindale Oliver
Lake Co, FL	126	Apr-02	217	-	8.50	7a-6p	8.30	-	70.55	Tindale Oliver
Pasco Co, FL	55	Apr-02	133	-	6.80	8a-6p	8.12	-	55.22	Tindale Oliver
Pasco Co, FL	60	Apr-02	106	-	7.73	8a-6p	8.75	-	67.64	Tindale Oliver
Pasco Co, FL	70	Apr-02	188	-	7.80	8a-6p	6.03	-	47.03	Tindale Oliver
Pasco Co, FL	74	Apr-02	188	-	8.18	8a-6p	5.95	-	48.67	Tindale Oliver
Pasco Co, FL	189	Apr-02	261	-	7.46	8a-6p	8.99	-	67.07	Tindale Oliver
Marion Co, FL	102	Apr-02	167	-	8.02	7a-6p	5.10	-	40.90	Kimley-Horn & Associates
Marion Co, FL	105	Apr-02	169	-	7.23	7a-6p	7.22	-	52.20	Kimley-Horn & Associates
Marion Co, FL	124	Apr-02	170	-	6.04	7a-6p	7.29	-	44.03	Kimley-Horn & Associates
Marion Co, FL	132	Apr-02	171	-	7.87	7a-6p	7.00	-	55.09	Kimley-Horn & Associates
Marion Co, FL	133	Apr-02	209	-	8.04	7a-6p	4.92	-	39.56	Kimley-Horn & Associates
Citrus Co, FL	111	Oct-03	273	-	8.66	7a-6p	7.70	-	66.68	Tindale Oliver
Citrus Co, FL	231	Oct-03	155	-	5.71	7a-6p	4.82	-	27.52	Tindale Oliver
Citrus Co, FL	306	Oct-03	146	-	8.40	7a-6p	3.94	-	33.10	Tindale Oliver
Citrus Co, FL	364	Oct-03	345	-	7.20	7a-6p	9.14	-	65.81	Tindale Oliver
Citrus Co, FL	374	Oct-03	248	-	12.30	7a-6p	6.88	-	84.62	Tindale Oliver
Lake Co, FL	42	Dec-06	122	-	11.26	-	5.56	-	62.61	Tindale Oliver
Lake Co, FL	51	Dec-06	346	-	18.22	-	9.46	-	172.36	Tindale Oliver
Lake Co, FL	59	Dec-06	144	-	12.07	-	10.79	-	130.24	Tindale Oliver
Lake Co, FL	90	Dec-06	194	-	9.12	-	5.78	-	52.71	Tindale Oliver
Lake Co, FL	239	Dec-06	385	-	7.58	-	8.93	-	67.69	Tindale Oliver
Hernando Co, FL	232	Apr-07	516	-	8.02	7a-6p	8.16	-	65.44	Tindale Oliver
Hernando Co, FL	95	Apr-07	256	-	8.08	7a-6p	5.88	-	47.51	Tindale Oliver
Hernando Co, FL	90	Apr-07	338	-	7.13	7a-6p	5.86	-	41.78	Tindale Oliver
Hernando Co, FL	58	Apr-07	153	-	6.16	7a-6p	8.39	-	51.68	Tindale Oliver
Collier Co, FL	74	Mar-08	503	-	12.81	7a-6p	3.05	-	39.07	Tindale Oliver
Collier Co, FL	97	Mar-08	512	-	8.78	7a-6p	11.29	-	99.13	Tindale Oliver
Collier Co, FL	315	Mar-08	1,347	-	6.97	7a-6p	6.55	-	45.65	Tindale Oliver
Collier Co, FL	42	Mar-08	314	-	9.55	7a-6p	10.98	-	104.86	Tindale Oliver
Total Size	10,380	55	13,130				**Average Trip Length:**	**6.83**		
							Weighted Average Trip Length:	**6.62**		

Weighted Average Trip Generation Rate: **7.81**

Table C-10

LUC 215: Single Family Attached Housing

Location	Size / Units	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Hernando Co, FL	31	May-96	31	31	6.12	9a-6p	-	-	-	Tindale Oliver
Hernando Co, FL	128	May-96	198	198	6.47	9a-6p	-	-	-	Tindale Oliver
Pasco Co, FL	229	Apr-02	198	198	4.77	9a-6p	-	-	-	Tindale Oliver
Pasco Co, FL	248	Apr-02	353	353	4.24	9a-6p	-	-	-	Tindale Oliver
Total Size	636	4	780				**Average Trip Length:**	**-**		
ITE	2,640	22					**Weighted Average Trip Length:**	**-**		
Blended total	3,276									

Weighted Average Trip Generation Rate: 4.97

ITE Average Trip Generation Rate: 7.20

Blend of FL Studies and ITE Average Trip Generation Rate: **6.77**

Table C-11

LUC 220/221/222: Multi-Family/Apartment

Location	Size / Units	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Sarasota Co, FL	212	Jun-93	42	42	5.78	-	5.20	-	30.06	Sarasota County
Sarasota Co, FL	243	Jun-93	36	36	5.84	-	-	-	-	Sarasota County
Marion Co, FL	214	Apr-02	175	175	6.84	-	4.61	-	31.53	Kimley-Horn & Associates
Marion Co, FL	240	Apr-02	174	174	6.96	-	3.43	-	23.87	Kimley-Horn & Associates
Marion Co, FL	288	Apr-02	175	175	5.66	-	5.55	-	31.41	Kimley-Horn & Associates
Marion Co, FL	480	Apr-02	175	175	5.73	-	6.88	-	39.42	Kimley-Horn & Associates
Marion Co, FL	500	Apr-02	170	170	5.46	-	5.94	-	32.43	Kimley-Horn & Associates
Lake Co, FL	250	Dec-06	135	135	6.71	-	5.33	-	35.76	Tindale Oliver
Lake Co, FL	157	Dec-06	265	265	13.97	-	2.62	-	36.60	Tindale Oliver
Lake Co, FL	169	Dec-06	212	-	8.09	-	6.00	-	48.54	Tindale Oliver
Lake Co, FL	226	Dec-06	301	-	6.74	-	2.17	-	14.63	Tindale Oliver
Hernando Co, FL	312	Apr-07	456	-	4.09	-	5.95	-	24.34	Tindale Oliver
Hernando Co, FL	176	Apr-07	332	-	5.38	-	5.24	-	28.19	Tindale Oliver
Total Size	3,467	13	2,648			**Average Trip Length:**	**4.91**			
						Weighted Average Trip Length:	**5.21**			

Table C-12

Land Use 240: Mobile Home Park

Location	Size / Units	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Marion Co, FL	67	Jul-91	22	22	5.40	48hrs.	2.29	-	12.37	Tindale Oliver
Marion Co, FL	82	Jul-91	58	58	10.80	24hr.	3.72	-	40.18	Tindale Oliver
Marion Co, FL	137	Jul-91	22	22	3.10	24hr.	4.88	-	15.13	Tindale Oliver
Sarasota Co, FL	996	Jun-93	181	181	4.19	-	4.40	-	18.44	Sarasota County
Sarasota Co, FL	235	Jun-93	100	100	3.51	-	5.10	-	17.90	Sarasota County
Volusia Co, FL	482	Sep-97	174	-	3.01	-	4.21	-	12.67	Tindale Oliver
Volusia Co, FL	599	Sep-97	70	-	3.81	-	3.03	-	11.54	Tindale Oliver
Volusia Co, FL	400	Sep-97	48	-	6.74	-	3.03	-	20.42	Tindale Oliver
Marion Co, FL	188	Apr-02	147	-	3.51	24hr.	5.48	-	19.23	Kimley-Horn & Associates
Marion Co, FL	227	Apr-02	173	-	2.76	24hr.	8.80	-	24.29	Kimley-Horn & Associates
Marion Co, FL	297	Apr-02	175	-	4.78	24hr.	4.76	-	22.75	Kimley-Horn & Associates
Hernando Co, FL	1,892	May-96	425	425	4.13	9a-6p	4.13	-	17.06	Tindale Oliver
Total Size	5,602	12	1,595			**Average Trip Length:**	**4.49**			
						Weighted Average Trip Length:	**4.29**			
								Weighted Average Trip Generation Rate:		**4.22**

Table C-13

Land Use 310: Hotel

Location	Size (Rooms)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Pinellas Co, FL	174	Aug-89	134	106	12.50	7-11a/3-7p	6.30	79.0	62.21	Tindale Oliver
Pinellas Co, FL	114	Oct-89	30	14	7.30	12-7p	6.20	47.0	21.27	Tindale Oliver
Volusia Co, FL	40	Sep-97	-	-	8.71	-	5.30	-	-	Tindale Oliver
Orange Co, FL	123	1997	-	-	6.32	-	-	-	-	Orange County
Orange Co, FL	120	1997	-	-	5.27	-	-	-	-	Orange County
Orange Co, FL	146	1997	-	-	7.61	-	-	-	-	Orange County
Orange Co, FL	252	1997	-	-	5.63	-	-	-	-	Orange County
Orange Co, FL	172	1997	-	-	6.36	-	-	-	-	Orange County
Orange Co, FL	170	1997	-	-	6.06	-	-	-	-	Orange County
Orange Co, FL	128	1997	-	-	6.10	-	-	-	-	Orange County
Orange Co, FL	200	1997	-	-	4.56	-	-	-	-	Orange County
Orange Co, FL	112	1998	-	-	2.78	-	-	-	-	Orange County
Orange Co, FL	130	1998	-	-	9.12	-	-	-	-	Orange County
Orange Co, FL	106	1998	-	-	7.34	-	-	-	-	Orange County
Orange Co, FL	98	1998	-	-	7.32	-	-	-	-	Orange County
Orange Co, FL	120	1998	-	-	5.57	-	-	-	-	Orange County
Orange Co, FL	70	1999	-	-	1.85	-	-	-	-	Orange County
Orange Co, FL	123	1999	-	-	4.81	-	-	-	-	Orange County
Orange Co, FL	123	1999	-	-	3.70	-	-	-	-	Orange County
Orange Co, FL	211	2000	-	-	2.23	-	-	-	-	Orange County
Orange Co, FL	144	2000	-	-	7.32	-	-	-	-	Orange County
Orange Co, FL	105	2001	-	-	5.25	-	-	-	-	Orange County
Orange Co, FL	891	2005	-	-	5.69	-	-	-	-	Orange County
Orange Co, FL	1,584	2005	-	-	5.88	-	-	-	-	Orange County
Orange Co, FL	210	2006	-	-	4.88	-	-	-	-	Orange County
Orange Co, FL	1,499	2006	-	-	4.69	-	-	-	-	Orange County
Orange Co, FL	144	-	-	-	4.74	-	-	-	-	Orange County
Orange Co, FL	148	-	-	-	7.61	-	-	-	-	Orange County
Orange Co, FL	160	-	-	-	6.19	-	-	-	-	Orange County
Orange Co, FL	130	-	-	-	4.29	-	-	-	-	Orange County
Orange Co, FL	130	-	-	-	3.40	-	-	-	-	Orange County
Orange Co, FL	144	-	-	-	7.66	-	-	-	-	Orange County
Orange Co, FL	100	-	-	-	7.37	-	-	-	-	Orange County
Orange Co, FL	190	-	-	-	4.71	-	-	-	-	Orange County
Orange Co, FL	1,501	2011	-	-	3.50	-	-	-	-	Tindale Oliver
Orange Co, FL	174	2011	-	-	7.03	-	-	-	-	Tindale Oliver
Orange Co, FL	238	2014	-	-	4.05	-	-	-	-	Tindale Oliver
Total Size	10,224	37	164			**Average Trip Length:**	**5.93**			
ITE	1,036	7				**Weighted Average Trip Length:**	**6.14**			
Blended total	11,260					Weighted Percent New Trip Average:	66.3			
								Weighted Average Trip Generation Rate:		5.32
								ITE Average Trip Generation Rate:		7.99
								Blend of FL Studies and ITE Average Trip Generation Rate:		**5.57**

Table C-14

Land Use 320: Motel

Location	Size (Rooms)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Pinellas Co, FL	48	Oct-89	46	24	-	10a-2p	2.80	65.0	-	Tindale Oliver
Pinellas Co, FL	54	Oct-89	32	22	-	12p-7p	3.80	69.0	-	Tindale Oliver
Pinellas Co, FL	120	Oct-89	26	22	-	2p-7p	5.20	84.6	-	Tindale Oliver
Total Size	222	3	104			**Average Trip Length:**	**3.93**			
ITE	654	6				**Weighted Average Trip Length:**	**4.34**			
						Weighted Percent New Trip Average:		76.6		

Table C-15

Land Use 445: Movie Theater

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Pinellas Co, FL	24.7	Oct-89	151	116	113.10	2p-8p	2.70	77.0	235.13	Tindale Oliver
Pinellas Co, FL	34.0	Sep-89	122	116	63.40	2p-8p	1.90	95.0	114.44	Tindale Oliver
Total Size	58.7	2	273			**Average Trip Length:**	**2.30**			
ITE	28.0	1				**Weighted Average Trip Length:**	**2.24**			
Blended total	86.7					Weighted Percent New Trip Average:		87.4		
							Weighted Average Trip Generation Rate:			84.31
							ITE Average Trip Generation Rate:			78.09
							Blend of FL Studies and ITE Average Trip Generation Rate:			**82.30**

Table C-16

Land Use 565: Day Care Center

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Pinellas Co, FL	5.6	Aug-89	94	66	66.99	7a-6p	1.90	70.0	89.10	Tindale Oliver
Pinellas Co, FL	10.0	Sep-89	179	134	66.99	7a-6p	2.10	75.0	105.51	Tindale Oliver
Tampa, FL	-	Mar-86	28	25	-	-	2.60	89.0	-	Kimley-Horn & Associates
Total Size	15.6	3	301			**Average Trip Length:**	**2.20**			
ITE	135.0	27				**Weighted Average Trip Length:**	**2.03**			
Blended total	150.6					Weighted Percent New Trip Average:		73.2		
							Weighted Average Trip Generation Rate:			66.99
							ITE Average Trip Generation Rate:			47.62
							Blend of FL Studies and ITE Average Trip Generation Rate:			**49.63**

Table C-17

Land Use 620: Nursing Home

Location	Size (Beds)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Lakeland, FL	120	Mar-90	74	66	2.86	11a-4p	2.59	89.0	6.59	Tindale Oliver
		1	74			**Average Trip Length:**	**2.59**			
						Weighted Average Trip Length:	**2.59**			
						Weighted Percent New Trip Average:		89.0		

Table C-18

Land Use 710: General Office Building

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Sarasota Co, FL	14.3	Jun-93	14	14	46.85	-	11.30	-	529.41	Sarasota County
Gwinnett Co, GA	98.0	Dec-92	-	-	4.30	-	5.40	-	-	Street Smarts
Gwinnett Co, GA	180.0	Dec-92	-	-	3.60	-	5.90	-	-	Street Smarts
Pinellas Co, FL	187.0	Oct-89	431	388	18.49	7a-5p	6.30	90.0	104.84	Tindale Oliver
St. Petersburg, FL	262.8	Sep-89	291	274	-	7a-5p	3.40	94.0	-	Tindale Oliver
		5	736			**Average Trip Length:**	**6.46**			
						Weighted Average Trip Length:	**5.15**			
						Weighted Percent New Trip Average:		92.3		

Table C-19

LUC 720: Small Medical/Dental Office Building: 10,000 sf & Under

Site	Size (1,000 sf)	Tues., Jan 11		Wedn., Jan 12		Thur., Jan 13		TOTAL		AVERAGE		AVERAGE (per 1,000 sf)		
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	TOTAL
Site 1	2.100	35	35	22	22	13	13	70	70	23.33	23.33	**11.11**	**11.11**	**22.22**
Site 2	3.000	40	40	52	52	53	53	145	145	48.33	48.33	**16.11**	**16.11**	**32.22**
Site 3	2.000	28	28	19	21	24	26	71	75	23.67	25.00	**11.84**	**12.50**	**24.34**
Site 4	1.000	30	30	52	52	57	57	139	139	46.33	46.33	**46.33**	**46.33**	**92.66**
Site 5	3.024	31	32	43	43	24	24	98	99	32.67	33.00	**10.80**	**10.91**	**21.71**
Site 6	1.860	22	24	19	17	11	11	52	52	17.33	17.33	**9.32**	**9.32**	**18.64**
Average												**17.59**	**17.71**	**35.30**
Average (excluding Site 4)												**11.84**	**11.99**	**23.83**

Table C-20

Land Use 720: Medical-Dental Office Building

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Tampa, FL	-	Mar-86	33	26	-	-	6.00	79.0	-	Kimley-Horn & Associates
Palm Harbor, FL	14.6	Oct-89	104	76	33.98	9a-5p	6.30	73.0	156.27	Tindale Oliver
St. Petersburg, FL	-	Nov-89	34	30	57.20	9a-4p	1.20	88.0	-	Tindale Oliver
Hernando Co, FL	58.4	May-96	390	349	28.52	9a-6p	6.47	89.5	165.09	Tindale Oliver
Hernando Co, FL	28.0	May-96	202	189	49.75	9a-6p	6.06	93.8	282.64	Tindale Oliver
Volusia Co, FL	15.1	Sep-97	53	-	38.30	-	5.70	75.0	163.73	Tindale Oliver
Volusia Co, FL	74.0	Sep-97	48	-	-	-	3.90	79.0	-	Tindale Oliver
Charlotte Co, FL	11.0	Oct-97	-	186	49.50	9a-5p	4.60	92.1	209.67	Tindale Oliver
Charlotte Co, FL	28.0	Oct-97	-	186	31.00	9a-5p	3.60	81.6	91.04	Tindale Oliver
Charlotte Co, FL	30.4	Oct-97	-	324	39.80	9a-5p	3.30	83.5	109.68	Tindale Oliver
Citrus Co, FL	38.9	Oct-03	-	168	32.26	8-6p	6.80	97.1	213.03	Tindale Oliver
Citrus Co, FL	10.0	Nov-03	-	340	40.56	8-630p	6.20	92.4	232.33	Tindale Oliver
Citrus Co, FL	5.3	Dec-03	-	20	29.36	8-5p	5.25	95.2	146.78	Tindale Oliver
Orange Co, FL	50.6	2009	-	-	26.72	-	-	-	-	Orange County
Orange Co, FL	23.5	2010	-	-	16.58	-	-	-	-	Tindale Oliver
			15	864			**Average Trip Length:**	**5.03**		
							Weighted Average Trip Length:	**5.16**		

Weighted Percent New Trip Average: 85.9

Average Trip Generation Rate: 32.87

ITE Average Trip Generation Rate: 36.00

Blend of FL Studies and ITE Average Trip Generation Rate: 34.32

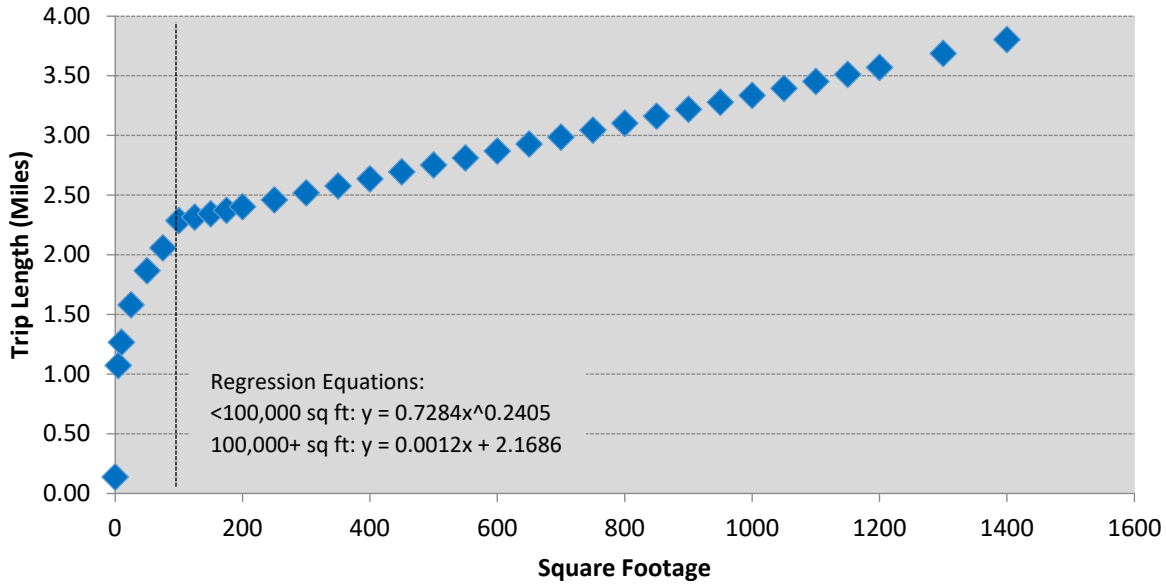
Table C-21

Land Use 820/821/822: Retail/Shopping Center

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Tampa, FL	-	Mar-86	527	348	-	-	-	66.0	-	Kimley-Horn & Associates
Tampa, FL	-	Mar-86	170	-	-	-	1.70	-	-	Kimley-Horn & Associates
Tampa, FL	-	Mar-86	354	269	-	-	-	76.0	-	Kimley-Horn & Associates
Tampa, FL	-	Mar-86	144	-	-	-	2.50	-	-	Kimley-Horn & Associates
St. Petersburg, FL	1,192.0	Aug-89	384	298	-	11a-7p	3.60	78.0	-	Tindale Oliver
St. Petersburg, FL	132.3	Sep-89	400	368	77.00	10a-7p	1.80	92.0	127.51	Tindale Oliver
Largo, FL	425.0	Aug-89	160	120	26.73	10a-6p	2.30	75.0	46.11	Tindale Oliver
Dunedin, FL	80.5	Sep-89	276	210	81.48	9a-5p	1.40	76.0	86.69	Tindale Oliver
Pinellas Park, FL	696.0	Sep-89	485	388	-	9a-6p	3.20	80.0	-	Tindale Oliver
Seminole, FL	425.0	Oct-89	674	586	-	-	-	87.0	-	Tindale Oliver
Hillsborough Co, FL	134.0	Jul-91	-	-	-	-	1.30	74.0	-	Tindale Oliver
Hillsborough Co, FL	151.0	Jul-91	-	-	-	-	1.30	73.0	-	Tindale Oliver
Collier Co, FL	-	Aug-91	68	64	-	-	3.33	94.1	-	Tindale Oliver
Collier Co, FL	-	Aug-91	208	154	-	-	2.64	74.0	-	Tindale Oliver
Sarasota/Bradenton, FL	109.0	Sep-92	300	185	-	12a-6p	-	61.6	-	King Engineering Associates, Inc.
Ocala, FL	133.4	Sep-92	300	192	-	12a-6p	-	64.0	-	King Engineering Associates, Inc.
Sarasota Co, FL	110.0	Jun-93	58	58	122.14	-	3.20	-	-	Sarasota County
Sarasota Co, FL	146.1	Jun-93	65	65	51.53	-	2.80	-	-	Sarasota County
Sarasota Co, FL	157.5	Jun-93	57	57	79.79	-	3.40	-	-	Sarasota County
Sarasota Co, FL	191.0	Jun-93	62	62	66.79	-	5.90	-	-	Sarasota County
Hernando Co, FL	107.8	May-96	608	331	77.60	9a-6p	4.68	54.5	197.85	Tindale Oliver
Charlotte Co, FL	88.0	Oct-97	-	-	73.50	9a-5p	1.80	57.1	75.56	Tindale Oliver
Charlotte Co, FL	191.9	Oct-97	-	-	72.00	9a-5p	2.40	50.9	87.97	Tindale Oliver
Charlotte Co, FL	51.3	Oct-97	-	-	43.00	9a-5p	2.70	51.8	60.08	Tindale Oliver
Lake Co, FL	67.8	Apr-01	246	177	102.60	-	3.40	71.2	248.37	Tindale Oliver
Lake Co, FL	72.3	Apr-01	444	376	65.30	-	4.50	59.0	173.37	Tindale Oliver
Pasco Co, FL	65.6	Apr-02	222	-	145.64	9a-5p	1.46	46.9	99.62	Tindale Oliver
Pasco Co, FL	75.8	Apr-02	134	-	38.23	9a-5p	2.36	58.2	52.52	Tindale Oliver
Citrus Co, FL	185.0	Oct-03	-	784	55.84	8a-6p	2.40	88.1	118.05	Tindale Oliver
Citrus Co, FL	91.3	Nov-03	-	390	54.50	8a-6p	1.60	88.0	76.77	Tindale Oliver
			30	6,346			**Average Trip Length:**	**2.71**		

Figure C-1

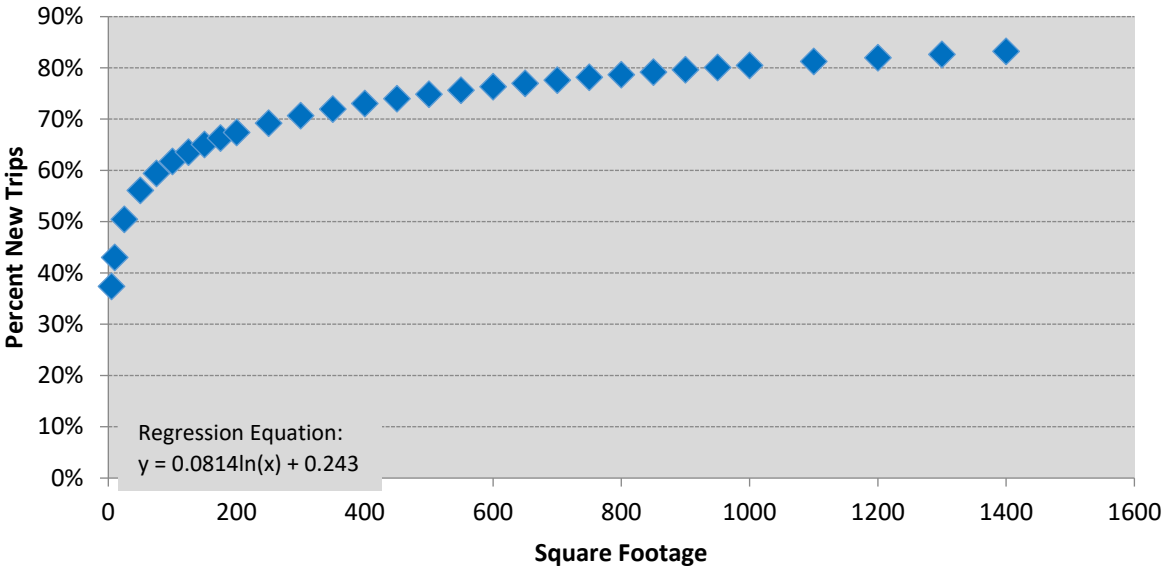
LUC 820/821/822: Retail/Shopping Center – Florida Curve Trip Length Regression



Source: Regression analysis based on FL Studies data for LUC 820-822

Figure C-2

LUC 820/821/822: Retail/Shopping Center – Florida Curve Percent New Trips Regression



Source: Regression analysis based on FL Studies data for LUC 820-822

Table C-22

Land Use 840/841: New/Used Automobile Sales

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
St.Petersburg, FL	43.0	Oct-89	152	120	-	9a-5p	4.70	79.0	-	Tindale Oliver
Clearwater, FL	43.0	Oct-89	136	106	29.40	9a-5p	4.50	78.0	103.19	Tindale Oliver
Orange Co, FL	13.8	1997	-	-	35.75	-	-	-	-	Orange County
Orange Co, FL	34.4	1998	-	-	23.45	-	-	-	-	Orange County
Orange Co, FL	66.3	2001	-	-	28.50	-	-	-	-	Orange County
Orange Co, FL	39.1	2002	-	-	10.48	-	-	-	-	Orange County
Orange Co, FL	116.7	2003	-	-	22.18	-	-	-	-	Orange County
Orange Co, FL	51.7	2007	-	-	40.34	-	-	-	-	L-TEC
Orange Co, FL	36.6	-	-	-	15.17	-	-	-	-	Orange County
Orange Co, FL	216.4	2008	-	-	13.45	-	-	-	-	Orange County

Total Size	618.0	10	288	**Average Trip Length:**	**4.60**	
ITE (840)	648.0	18		**Weighted Average Trip Length:**	**4.60**	
ITE (841)	28.0	14		Weighted Percent New Trip Average:	78.5	
Blended total	1,294.0					

Weighted Average Trip Generation Rate:	21.04
ITE Average Trip Generation Rate (LUC 840):	27.84
ITE Average Trip Generation Rate (LUC 841):	27.06
Blend of FL Studies and ITE Average Trip Generation Rate:	**24.58**

Table C-23

Land Use 848: Tire Store

Location	Size (bays)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Volusia Co, FL	8.0	Sep-97	-	-	42.10	-	-	-	-	Tindale Oliver
Volusia Co, FL	10.0	Sep-97	19	-	20.20	-	2.44	68.0	33.52	Tindale Oliver

Total Size	18.0	2	19	**Average Trip Length:**	**2.44**	
ITE	8.0	10		**Weighted Average Trip Length:**	**2.44**	
Blended total	26.0			Weighted Percent New Trip Average:	68.0	

Table C-24

Land Use 850: Supermarket

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Palm Harbor, FL	62.0	Aug-89	163	62	106.26	9a-4p	2.08	56.0	123.77	Tindale Oliver

Total Size	62.0	1	163	**Average Trip Length:**	**2.08**	
ITE	1,144.0	22		**Weighted Average Trip Length:**	**2.08**	
Blended total	1,206.0			Weighted Percent New Trip Average:	56.0	

Weighted Average Trip Generation Rate:	106.26
ITE Average Trip Generation Rate:	93.84
Blend of FL Studies and ITE Average Trip Generation Rate:	**94.48**

Table C-25

Land Use 880/881: Pharmacy with and without Drive-Through Window

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Pasco Co, FL	11.1	Apr-02	138	38	88.97	-	2.05	27.5	50.23	Tindale Oliver
Pasco Co, FL	12.0	Apr-02	212	90	122.16	-	2.04	42.5	105.79	Tindale Oliver
Pasco Co, FL	15.1	Apr-02	1192	54	97.96	-	2.13	28.1	58.69	Tindale Oliver

Total Size	38.2	3	1,542	**Average Trip Length:**	**2.07**	
ITE (LUC 880)	66.0	6		**Weighted Average Trip Length:**	**2.08**	
ITE (LUC 881)	208.0	16		Weighted Percent New Trip Average:	32.4	
Blended total	312.2					

Average Trip Generation Rate:	103.03
ITE Average Trip Generation Rate (LUC 880):	90.08
ITE Average Trip Generation Rate (LUC 881):	108.40
Blend of FL Studies and ITE Average Trip Generation Rate:	**103.86**

Table C-26

Land Use 890: Furniture Store

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Largo, FL	15.0	7/28-30/92	64	34	-	-	4.63	52.5	-	Tindale Oliver
Tampa, FL	16.9	Jul-92	68	39	-	-	7.38	55.7	-	Tindale Oliver

Total Size	31.90	2	132	**Average Trip Length:**	**6.01**	
ITE	779.0	19		**Weighted Average Trip Length:**	**6.09**	
Blended total	810.90			Weighted Percent New Trip Average:	54.2	

Table C-27

Land Use 912: Drive-In Bank

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Tampa, FL	-	Mar-86	77	-	-	-	2.40	-	-	Kimley-Horn & Associates
Tampa, FL	-	Mar-86	211	-	-	-	-	54.0	-	Kimley-Horn & Associates
Clearwater, FL	0.4	Aug-89	113	52	-	9a-6p	5.20	46.0	-	Tindale Oliver
Largo, FL	2.0	Sep-89	129	94	-	-	1.60	73.0	-	Tindale Oliver
Seminole, FL	4.5	Oct-89	-	-	-	-	-	-	-	Tindale Oliver
Marion Co, FL	2.3	Jun-91	69	29	-	24hr.	1.33	42.0	-	Tindale Oliver
Marion Co, FL	3.1	Jun-91	47	32	-	24hr.	1.75	68.1	-	Tindale Oliver
Marion Co, FL	2.5	Jul-91	57	26	-	48hrs.	2.70	45.6	-	Tindale Oliver
Collier Co, FL	-	Aug-91	162	96	-	24hr.	0.88	59.3	-	Tindale Oliver
Collier Co, FL	-	Aug-91	116	54	-	-	1.58	46.6	-	Tindale Oliver
Collier Co, FL	-	Aug-91	142	68	-	-	2.08	47.9	-	Tindale Oliver
Hernando Co, FL	5.4	May-96	164	41	-	9a-6p	2.77	24.7	-	Tindale Oliver
Marion Co, FL	2.4	Apr-02	70	-	-	24hr.	3.55	54.6	-	Kimley-Horn & Associates
Marion Co, FL	2.7	May-02	50	-	246.66	24hr.	2.66	40.5	265.44	Kimley-Horn & Associates
Total Size	25.2	14	1,407				**Average Trip Length:**	**2.38**		
ITE	114.0	19					**Weighted Average Trip Length:**	**2.46**		
Blended total	139.2						Weighted Percent New Trip Average:	46.2		
	116.7							Weighted Average Trip Generation Rate:		246.66
								ITE Average Trip Generation Rate:		100.35
								Blend of FL Studies and ITE Average Trip Generation Rate:		**103.73**

Table C-28

Land Use 931: Fine Dining Restaurant

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Tampa, FL	-	Mar-86	76	62	-	-	2.10	82.0	-	Kimley-Horn & Associates
St. Petersburg, FL	7.5	Oct-89	177	154	-	11a-2p/4-8p	3.50	87.0	-	Tindale Oliver
Clearwater, FL	8.0	Oct-89	60	40	110.63	10a-2p/5-9p	2.80	67.0	207.54	Tindale Oliver
Total Size	15.5	3	313				**Average Trip Length:**	**2.80**		
ITE	90.0	10					**Weighted Average Trip Length:**	**3.14**		
Blended total	105.5						Weighted Percent New Trip Average:	76.7		
	98.0							Weighted Average Trip Generation Rate:		110.63
								ITE Average Trip Generation Rate:		83.84
								Blend of FL Studies and ITE Average Trip Generation Rate:		**86.03**

Table C-29

Land Use 932: High-Turnover (Sit-Down) Restaurant

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Hernando Co, FL	6.2	1996	242	175	187.51	9a-6p	2.76	72.5	375.00	Tindale Oliver
Hernando Co, FL	8.2	1996	154	93	102.71	9a-6p	4.15	60.2	256.43	Tindale Oliver
St. Petersburg, FL	5.0	1989	74	68	132.60	1130-7p	2.00	92.0	243.98	Tindale Oliver
Kenneth City, FL	5.2	1989	236	176	127.88	4p-730p	2.30	75.0	220.59	Tindale Oliver
Volusia Co, FL	6.0	Sep-97	-	-	110.02	-	1.83	60.0	120.80	Tindale Oliver
Volusia Co, FL	6.0	Oct-97	-	-	105.62	-	3.29	64.0	222.39	Tindale Oliver
Volusia Co, FL	5.6	Nov-97	-	-	-	-	3.29	79.0	-	Tindale Oliver
Volusia Co, FL	5.6	Dec-97	-	-	-	-	1.54	79.0	-	Tindale Oliver
Volusia Co, FL	5.9	Jan-98	-	-	98.14	-	-	-	-	Tindale Oliver
Pasco Co, FL	5.2	2002	114	88	82.47	9a-6p	3.72	77.2	236.81	Tindale Oliver
Pasco Co, FL	5.8	2002	182	102	116.97	9a-6p	3.49	56.0	228.77	Tindale Oliver
Orange Co, FL	5.0	1996	-	-	135.68	-	-	-	-	Orange County
Orange Co, FL	9.7	1996	-	-	132.32	-	-	-	-	Orange County
Orange Co, FL	11.2	1998	-	-	18.76	-	-	-	-	Orange County
Orange Co, FL	7.0	1998	-	-	126.40	-	-	-	-	Orange County
Orange Co, FL	4.6	1998	-	-	129.23	-	-	-	-	Orange County
Orange Co, FL	7.4	1998	-	-	147.44	-	-	-	-	Orange County
Orange Co, FL	6.7	1998	-	-	82.58	-	-	-	-	Orange County
Orange Co, FL	11.3	2000	-	-	95.33	-	-	-	-	Orange County
Orange Co, FL	7.2	2000	-	-	98.06	-	-	-	-	Orange County
Orange Co, FL	11.4	2001	-	-	91.67	-	-	-	-	Orange County
Orange Co, FL	5.6	2001	-	-	145.59	-	-	-	-	Orange County
Orange Co, FL	5.5	-	-	-	100.18	-	-	-	-	Orange County
Orange Co, FL	11.3	-	-	-	62.12	-	-	-	-	Orange County
Orange Co, FL	10.4	-	-	-	31.77	-	-	-	-	Orange County
Orange Co, FL	5.9	-	-	-	147.74	-	-	-	-	Orange County
Orange Co, FL	8.9	2008	-	-	52.69	-	-	-	-	Orange County
Orange Co, FL	9.7	2010	-	-	105.84	-	-	-	-	Orange County
Orange Co, FL	9.5	2013	-	-	40.46	-	-	-	-	Orange County
Orange Co, FL	11.0	2015	-	-	138.39	-	-	-	-	Orange County
Total Size	212.8	30	1,102				**Average Trip Length:**	**2.84**		
ITE	250.0	50					**Weighted Average Trip Length:**	**2.90**		
Blended total	462.8						Weighted Percent New Trip Average:	70.5		
								Weighted Average Trip Generation Rate:		99.17
								ITE Average Trip Generation Rate:		107.20
								Blend of FL Studies and ITE Average Trip Generation Rate:		**103.51**

Table C-30

Land Use 934: Fast Food Restaurant with Drive-Through Window

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Tampa, FL	-	Mar-86	61	-	-	-	2.70	-	-	Kimley-Horn & Associates
Tampa, FL	-	Mar-86	306	-	-	-	-	65.0	-	Kimley-Horn & Associates
Pinellas Co, FL	2.20	Aug-89	81	48	502.80	11a-2p	1.70	59.0	504.31	Tindale Oliver
Pinellas Co, FL	4.30	Oct-89	456	260	660.40	1 day	2.30	57.0	865.78	Tindale Oliver
Tarpon Springs, FL	-	Oct-89	233	114	-	7a-7p	3.60	49.0	-	Tindale Oliver
Marion Co, FL	1.60	Jun-91	60	32	962.50	48hrs.	0.91	53.3	466.84	Tindale Oliver
Marion Co, FL	4.00	Jun-91	75	46	625.00	48hrs.	1.54	61.3	590.01	Tindale Oliver
Collier Co, FL	-	Aug-91	66	44	-	-	1.91	66.7	-	Tindale Oliver
Collier Co, FL	-	Aug-91	118	40	-	-	1.17	33.9	-	Tindale Oliver
Hernando Co, FL	5.43	May-96	136	82	311.83	9a-6p	1.68	60.2	315.27	Tindale Oliver
Hernando Co, FL	3.13	May-96	168	82	547.34	9a-6p	1.59	48.8	425.04	Tindale Oliver
Orange Co, FL	8.93	1996	-	-	377.00	-	-	-	-	Orange County
Volusia Co, FL	3.20	Sep-97	108	-	497.00	-	3.30	60.0	984.06	Tindale Oliver
Volusia Co, FL	2.60	Oct-97	-	-	486.10	-	2.50	50.0	607.63	Tindale Oliver
Volusia Co, FL	2.90	Nov-97	14	-	466.60	-	2.60	70.0	849.21	Tindale Oliver
Lake Co, FL	2.20	Apr-01	376	252	934.30	-	2.50	74.6	1742.47	Tindale Oliver
Lake Co, FL	3.20	Apr-01	171	182	654.90	-	-	47.8	-	Tindale Oliver
Lake Co, FL	3.80	Apr-01	188	137	353.70	-	3.30	70.8	826.38	Tindale Oliver
Pasco Co, FL	2.66	Apr-02	100	46	283.12	9a-6p	-	46.0	-	Tindale Oliver
Pasco Co, FL	2.96	Apr-02	486	164	515.32	9a-6p	2.72	33.7	472.92	Tindale Oliver
Pasco Co, FL	4.42	Apr-02	168	120	759.24	9a-6p	1.89	71.4	1024.99	Tindale Oliver
Total Size	57.5	21	4,585			**Average Trip Length:**	**2.23**			
ITE	213.0	71				**Weighted Average Trip Length:**	**2.21**			
Blended total	270.5					Weighted Percent New Trip Average:		58.3		
	42.7							Weighted Average Trip Generation Rate:		523.14
								ITE Average Trip Generation Rate:		467.48
								Blend of FL Studies and ITE Average Trip Generation Rate:		**479.31**

Table C-31

Land Use 941: Quick Lubrication Vehicle Shop

Location	Size (bays)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Volusia Co, FL	4.0	Sep-97	10	-	45.08	-	1.97	-	-	Tindale Oliver
Total Size	4.0	1	10			**Average Trip Length:**	**1.97**			
ITE	2.0					**Weighted Average Trip Length:**	**1.97**			
Blended total	6.0					Weighted Percent New Trip Average:		-		
								Weighted Average Trip Generation Rate:		45.08
								ITE Average Trip Generation Rate:		40.00
								Blend of FL Studies and ITE Average Trip Generation Rate:		**43.39**

Table C-32

Land Use 942: Automobile Care Center

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Largo, FL	5.5	Sep-89	34	30	37.64	9a-5p	2.40	88.0	79.50	Tindale Oliver
Jacksonville, FL	2.3	2/3-4/90	124	94	-	9a-5p	3.07	76.0	-	Tindale Oliver
Jacksonville, FL	2.3	2/3-4/90	110	74	-	9a-5p	2.96	67.0	-	Tindale Oliver
Jacksonville, FL	2.4	2/3-4/90	132	87	-	9a-5p	2.32	66.0	-	Tindale Oliver
Lakeland, FL	5.2	Mar-90	24	14	-	9a-4p	1.36	59.0	-	Tindale Oliver
Lakeland, FL	-	Mar-90	54	42	-	9a-4p	2.44	78.0	-	Tindale Oliver
Orange Co, FL	25.0	Nov-92	41	39	-	2-6p	4.60	-	-	LCE, Inc.
Orange Co, FL	36.6	-	-	-	15.17	-	-	-	-	Orange County
Orange Co, FL	7.0	-	-	-	46.43	-	-	-	-	Orange County
Total Size	86.2	9	519			**Average Trip Length:**	**2.74**			
ITE	102.0	6				**Weighted Average Trip Length:**	**3.62**			
Blended total	188.2					Weighted Percent New Trip Average:		72.2		

Table C-33

Land Use 944/945: Convenience Store/Gas Station

Location	Size (1,000 sf)	Date	Total # Interviews	# Trip Length Interviews	Trip Gen Rate	Time Period	Trip Length	Percent New Trips	VMT	Source
Largo, FL	0.6	Nov-89	70	14	-	8am-5pm	1.90	23.0	-	Tindale Oliver
Collier Co, FL	-	Aug-91	168	40	-	-	1.01	23.8	-	Tindale Oliver
Total Size	0.6	2	238			**Average Trip Length:**	**1.46**			
						Weighted Average Trip Length:	**1.90**			
						Weighted Percent New Trip Average:		23.0		

Convenience Store/Gas Station (ITE LUC 945) - Mid-Size Blend

ITE	48	Conv. Store 2,000 to 3,999 sf:	265.12
ITE	5	Conv. Store 4,000 to 5,499 sf:	257.13
	53	**Blend of ITE Average Trip Generation Rates for Convenience Store/Gas Station 2,000 to 5,499 sf:**	**264.38**

Appendix D
Thoroughfare Road Impact Fee:
Cost Component

Appendix D: Thoroughfare Road Impact Fee: Cost Component

This appendix presents the detailed calculations for the cost component of the thoroughfare road impact fee update. Supporting data and estimates are provided for all cost variables, including:

- Design
- Right-of-Way
- Construction
- Construction Engineering/Inspection
- Roadway Capacity

Curb & Gutter vs. Open Drainage

Due to limited construction data for roadways with open drainage/rural-design characteristics, the cost per lane mile for these types of roads was calculated using an adjustment factor. This factor was based on the rural-to-urban design cost ratio from the most recent District 7 Long Range Estimates (LRE) provided by FDOT[5]. Based on the LRE, the costs for open drainage/rural-design roadway capacity expansion (new road construction or lane addition) is approximately 76 percent of the construction costs for curb & gutter/urban-design roadway improvements.

Table D-1

Curb & Gutter/Open Drainage Cost Factor

Improvement	Construction Cost per Lane Mile		
	Open Drainage Rural Design	Curb & Gutter Urban Design	Ratio
0-2 Lanes	$4,154,560	$6,452,541	64%
0-4 Lanes	$3,436,336	$4,522,773	76%
0-6 Lanes	$2,908,194	$3,656,522	80%
2-4 Lanes	$4,672,853	$5,700,393	82%
4-6 Lanes	$5,076,988	$6,269,771	81%
Average	**$4,049,786**	**$5,320,400**	**76%**

Source: FDOT District 7 Long Range Estimates, 2021

[5] Similar data for FDOT District 5 was not available

Design

The design cost factor for county roads was estimated as a percentage of the construction cost per lane mile. This factor was determined based on a review of design-to-construction cost ratios from recent local improvements and information obtained from other jurisdictions throughout Florida. As shown in Table D-2, local improvements ranged from three (3) to 21 percent with a weighted average of eight (8) percent. In the case of other Florida jurisdictions, design factors ranged from six (6) percent to 13 percent with a weighted average of 10 percent (Table D-3).

For purposes of this study, the design cost for county roads was calculated at eight (8) percent of the construction cost per lane mile.

Table D-2

Design-to-Construction Cost Ratio – Local Projects

Description	From	To	Year	Design	Construction Cost	Design-to-Constr. Ratio
Williamson Blvd	LPGA Blvd	Strickland Range Rd	2019	$305,755	$4,951,165	6%
Howland Blvd	Providence Blvd	Elkcam Blvd	2020	$1,072,620	$11,290,456	10%
Orange Camp Blvd	MLK Blvd	I-4	2020	$909,870	$8,741,920	10%
10th St	Myrtle Ave	US-1	2020	$610,908	$9,456,399	6%
Blue Lake Ave Ext.	Blue Lake Ave	SR 472	-	$339,889	$1,605,000	21%
Williamson Blvd	Strickland Range Rd	Hand Ave	-	$232,745	$7,000,000	3%
Total				**$3,471,787**	**$43,044,940**	**8%**

Source: Volusia County

Table D-3

Design Cost Factor for County Roads – Other Florida Jurisdictions

Year	County	County Roadways (Cost per Lane Mile)		
		Design	Constr.	Design Ratio
2013	Hernando	$198,000	$1,980,000	10%
2013	Charlotte	$220,000	$2,200,000	10%
2014	Indian River	$159,000	$1,598,000	10%
2015	Collier	$270,000	$2,700,000	10%
2015	Brevard	$242,000	$2,023,000	12%
2015	Sumter	$210,000	$2,100,000	10%
2015	Marion	$167,000	$2,668,000	6%
2015	Palm Beach	$224,000	$1,759,000	13%
2017	St. Lucie	$220,000	$2,200,000	10%
2017	Clay	$239,000	$2,385,000	10%
2019	Collier	$385,000	$3,500,000	11%
2019	Sumter	$315,000	$2,862,000	11%
2020	Indian River	$291,000	$2,647,000	11%
2020	Hillsborough	$484,000	$4,036,000	12%
2020	Hernando	$232,000	$2,108,000	11%
2021	Manatee	$308,000	$2,800,000	11%
2021	Flagler	$258,000	$2,582,000	10%
2022	Lake	$215,000	$2,145,000	10%
Average		**$258,000**	**$2,461,000**	**10%**

Source: Recent impact fee studies conducted throughout Florida

Right-of-Way

The ROW cost reflects the total cost of the acquisitions along a corridor that are necessary to have sufficient cross-section width to widen an existing road or, in the case of new construction, build a new road.

The ROW cost factor for county roads was estimated as a percentage of the construction cost per lane mile. This factor was determined based on a review of ROW-to-construction cost ratios from recent local improvements, estimates in the 2045 LRTP, and information obtained from other jurisdictions throughout Florida. As shown in Table D-4, recent local improvements ranged from 0 to 34 percent with a weighted average of 12 percent. A review of the estimates in the 2045 LRTP ranged from six (6) to 80 percent with a weighted average of 39 percent, however, these estimates were for state road improvements. In the case of other Florida jurisdictions, as shown in Table D-5, ROW factors ranged from 10 percent to 60 percent with a weighted average of 39 percent.

For purposes of the thoroughfare road impact fee calculation, the ROW cost for county roads was calculated at 20 percent of the construction cost per lane mile. This estimate is slightly higher than recent local costs due to the higher cost ratio observed in the LRTP estimates and data from other jurisdictions.

Table D-4

ROW-to-Construction Cost Ratio – Local Projects

Description	From	To	Year	ROW	Construction Cost	ROW-to-Constr. Ratio
Williamson Blvd	LPGA Blvd	Strickland Range Rd	2019	$0	$4,951,165	0%
Howland Blvd	Providence Blvd	Elkcam Blvd	2020	$667,985	$11,290,456	6%
Orange Camp Blvd	MLK Blvd	I-4	2020	$857,747	$8,741,920	10%
10th St	Myrtle Ave	US-1	2020	$1,191,739	$9,456,399	13%
Blue Lake Ave Ext.	Blue Lake Ave	SR 472	-	$550,000	$1,605,000	34%
Williamson Blvd	Strickland Range Rd	Hand Ave	-	$2,000,000	$7,000,000	29%
Total				**$5,267,471**	**$43,044,940**	**12%**

Source: Volusia County

Table D-5

Right-of-Way Cost Factor for County Roads – Other Florida Jurisdictions

Year	County	County Roadways (Cost per Lane Mile)		
		ROW	Constr.	ROW Ratio
2013	Hernando	$811,800	$1,980,000	41%
2013	Charlotte	$1,034,000	$2,200,000	47%
2014	Indian River	$656,000	$1,598,000	41%
2015	Collier	$863,000	$2,700,000	32%
2015	Brevard	$708,000	$2,023,000	35%
2015	Sumter	$945,000	$2,100,000	45%
2015	Marion	$1,001,000	$1,668,000	60%
2015	Palm Beach	$721,000	$1,759,000	41%
2017	St. Lucie	$990,000	$2,200,000	45%
2017	Clay	$954,000	$2,385,000	40%
2018	Collier	$1,208,000	$3,500,000	35%
2019	Sumter	$1,202,000	$2,862,000	42%
2020	Indian River	$529,000	$2,647,000	20%
2020	Hillsborough	$1,448,000	$2,897,000	50%
2020	Hernando	$844,000	$2,108,000	40%
2021	Manatee	$1,120,000	$2,800,000	40%
2021	Flagler	$258,000	$2,582,000	10%
2022	Lake	$1,073,000	$2,145,000	50%
Average		**$909,211**	**$2,341,889**	**39%**

Source: Recent impact fee studies conducted throughout Florida

Construction

A review of construction cost data for local county roadway capacity expansion projects included eight recent (2014+) improvements provided by Volusia County:

- Howland Boulevard from Courtland Boulevard to North of SR 415
- LPGA Boulevard from Jimmy Ann Dr/Grand Reserve to Derbyshire Road
- Williamson Boulevard from LPGA Boulevard to Strickland Range Road
- Howland Boulevard from Providence Boulevard to Elkcam Boulevard
- Orange Camp Boulevard from MLK Boulevard to I-4
- 10th Street from Myrtle Avenue to US-1
- Blue Lake Avenue Extension from Blue Lake Avenue to SR 472
- Williamson Boulevard from Strickland Range Road to Hand Avenue

As shown in Table D-6, the recent local improvements ranged from $1.96 million per lane mile to $6.66 million per lane mile with a weighted average cost of approximately $2.69 million per lane mile.

In addition to local improvements, recent bid/completed improvements from throughout the state of Florida were also reviewed. As shown in Table D-7, this review included approximately 169 lane miles of improvements across 15 different counties. These improvements were then summarized based on the county land use and demographic characteristics (urban vs suburban/rural in nature). For purposes of this analysis, Volusia County was considered a "suburban/rural" county with urban counties consisting of Broward, Hillsborough, Miami-Dade, Orange, and Palm Beach Counties. The suburban/rural counties experienced a weighted average cost of $2.84 million per lane mile for curb & gutter improvements.

Based on a review of the local projects, statewide projects, and discussions with County representatives, a construction cost of **$2.70 million per lane mile** for county roads was utilized for the thoroughfare road impact fee calculation.

Table D-6

Construction Cost Estimates – Local Projects

Description	From	To	Year	Feature	Length	Lanes Added	Lane Miles Added	Construction Cost	Constr. Cost per Lane Mile
Howland Blvd	Courtland Blvd	N. of SR 415	2014	2 to 4	2.08	2	4.16	$11,110,480	$2,671,000
LPGA Blvd	Jimmy Ann Dr/Grand Reserve	Derbyshire Rd	2016	2 to 4	0.68	2	1.36	$3,758,279	$2,763,000
Williamson Blvd	LPGA Blvd	Strickland Range Rd	2019	2R to 4U	0.93	2	1.86	$4,951,165	$2,662,000
Howland Blvd	Providence Blvd	Elkcam Blvd	2020	2R to 4U	2.38	2	4.76	$11,290,456	$2,372,000
Orange Camp Blvd	MLK Blvd	I-4	2020	2R to 4U	2.23	2	4.46	$8,741,920	$1,960,000
10th St	Myrtle Ave	US-1	2020	2R to 4U	0.47	2/4	1.42	$9,456,399	$6,659,000
Blue Lake Ave Ext.	Blue Lake Ave	SR 472	-	0 to 2	0.35	2	0.70	$1,605,000	$2,293,000
Williamson Blvd	Strickland Range Rd	Hand Ave	-	2 to 4	1.39	2	2.78	$7,000,000	$2,518,000
Total							**21.50**	**$57,913,699**	**$2,694,000**

Source: Volusia County

Table D-7

Construction Cost – County Road Improvements from Other Florida Jurisdictions (Curb & Gutter Design)

County	County Classification	District	Description	From	To	Year	Feature	Design	Length	Lanes Added	Lane Miles Added	Construction Cost	Construction Cost per Lane Mile
URBAN Counties; Curb & Gutter													
Orange	Urban	5	Rouse Rd	Lake Underhill Rd	SR 50	2013	2 to 4	Curb & Gutter	1.55	2	3.10	$7,592,408	$2,449,164
Orange	Urban	5	Lake Underhill Rd	Goldenrod Rd	Chickasaw Tr	2013	2 to 4	Curb & Gutter	0.69	2	1.38	$6,371,855	$4,617,286
Hillsborough	Urban	7	Bruce B. Downs Blvd, Seg. B/C	Palm Springs Blvd	Pebble Creek Dr	2013	4 to 8	Curb & Gutter	3.36	4	13.44	$51,855,535	$3,858,299
Orange	Urban	5	CR 535 Seg. F	Overstreet Rd	Fossick Rd	2014	2 to 4	Curb & Gutter	0.60	2	1.20	$3,263,746	$2,719,788
Hillsborough	Urban	7	Boyette Rd, Ph. III	Donneymoor Dr	Bell Shoals Rd	2014	2 to 4	Curb & Gutter	1.84	2	3.68	$25,720,068	$6,989,149
Orange	Urban	5	International Dr	Westwood Blvd	Westwood Blvd	2015	4 to 6	Curb & Gutter	2.20	2	4.40	$16,775,875	$3,812,699
Orange	Urban	5	Reams Rd	Delmar Ave	Taborfield Ave	2017	2 to 4	Curb & Gutter	0.36	2	0.72	$3,409,584	$4,735,533
Orange	Urban	5	Destination Pkwy 1B/2A	Tradeshow Blvd	Lake Cay	2017	2 to 4	Curb & Gutter	0.78	2	1.56	$6,110,403	$3,916,925
Hillsborough	Urban	7	Bruce B. Downs Blvd, Seg. A	Bearss Ave	Palm Springs Blvd	2017	4 to 8	Curb & Gutter	3.56	4	14.24	$37,155,153	$2,609,210
Hillsborough	Urban	7	Bruce B. Downs Blvd, Seg. D	Pebble Creek Dr	Pasco Co. Line	2018	4 to 8	Curb & Gutter	1.36	4	5.44	$17,755,778	$3,263,930
Palm Beach	Urban	4	Roebuck Road	Jog Road	Haverhill Road	2018	2 to 5	Curb & Gutter	1.03	3	3.10	$5,154,028	$1,662,590
Palm Beach	Urban	4	Lyons Road	Clint Moore Road	north of LWDD L-39 Canal	2018	2 to 4	Curb & Gutter	0.70	2	1.40	$3,163,022	$2,259,301
Orange	Urban	5	Holden Ave	John Young Pkwy	Orange Blossom Tr	2019	0/2 to 4	Curb & Gutter	1.24	2/4	3.50	$18,798,771	$5,371,077
Orange	Urban	5	Boggy Creek Rd N	South Access Rd	Wetherbee Rd	2019	2 to 4	Curb & Gutter	1.29	2	2.58	$8,585,774	$3,327,819
Palm Beach	Urban	4	Hood Rd	East of FL Turnpike	W of Central Blvd	2019	2 to 4	Curb & Gutter	0.95	2	1.90	$12,686,954	$6,677,344
Palm Beach	Urban	4	Silver Beach Rd	East of Congress Ave	Old Dixie/Pre. Barack Obama Hwy	2019	2 to 3	Curb & Gutter	0.90	1	0.90	$4,478,355	$4,975,950
Total (2013-2020); Urban Counties ONLY									**Count:**	**16**	**62.54**	**$228,877,309**	**$3,659,695**
SUBURBAN/RURAL Counties; Curb & Gutter													
Brevard	Suburban/Rural	5	Babcock St	S. of Foundation Park Blvd	Malabar Rd	2013	2 to 4	Curb & Gutter	12.40	2	24.80	$56,000,000	$2,258,065
Collier	Suburban/Rural	1	Collier Blvd (CR 951)	Golden Gate Blvd	Green Blvd	2013	4 to 6	Curb & Gutter	2.00	2	4.00	$17,122,640	$4,280,660
Marion	Suburban/Rural	5	SW 110th St	US 41	SW 200th Ave	2013	0 to 2	Curb & Gutter	0.11	2	0.22	$438,765	$1,994,386
Marion	Suburban/Rural	5	NW 35th St	NW 35th Avenue Rd	NW 27th Ave	2013	0 to 4	Curb & Gutter	0.50	4	4.60	$8,616,236	$1,873,095
Marion	Suburban/Rural	5	NW 35th St	NW 27th Ave	US 441	2013	2 to 4	Curb & Gutter	1.30	2			
Sumter	Suburban/Rural	5	C-466A, Ph. III	US 301 N	Powell Rd	2013	2 to 3/4	Curb & Gutter	1.10	2	2.20	$4,283,842	$1,947,201
Collier	Suburban/Rural	1	Golden Gate Blvd	Wilson Blvd	Desoto Blvd	2014	2 to 4	Curb & Gutter	2.40	2	4.80	$16,003,504	$3,334,063
Brevard	Suburban/Rural	5	St. Johns Heritage Pkwy	SE of I-95 Intersection	US 192 (Space Coast Pkwy)	2014	0 to 2	Curb & Gutter	3.11	2	6.22	$16,763,567	$2,695,107
Sarasota	Suburban/Rural	1	Bee Ridge Rd	Mauna Loa Blvd	Iona Rd	2014	2 to 4	Curb & Gutter	2.68	2	5.36	$14,066,523	$2,624,351
St. Lucie	Suburban/Rural	4	W Midway Rd (CR 712)	Selvitz Rd	25th St	2014	2 to 4	Curb & Gutter	1.00	2	2.00	$15,359,926	$7,679,963
Lake	Suburban/Rural	5	N. Hancock Rd Ext.	Old 50	Gatewood Dr	2014	0/2 to 4	Curb & Gutter	1.50	2/4	5.00	$8,185,574	$1,637,115
Polk	Suburban/Rural	1	CR 655 & CR 559A	Pace Rd & N of CR 559A	N. of CR 559A & SR 599	2014	2 to 4	Curb & Gutter	2.60	2	5.20	$10,793,552	$2,075,683
Polk	Suburban/Rural	1	Ernie Caldwell Blvd	Pine Tree Tr	US 17/92	2015	0 to 4	Curb & Gutter	2.41	4	9.64	$19,535,391	$2,026,493
Flagler	Suburban/Rural	5	Old Kings Rd Ext.	Forest Grove Dr	Matanzas Woods Pkwy	2015	0 to 4	Curb & Gutter	0.52	4	2.08	$4,831,579	$2,322,875
St. Lucie	Suburban/Rural	4	W Midway Rd (CR 712)	25th St	US 1	2016	2 to 4	Curb & Gutter	1.60	2	3.20	$31,483,319	$9,838,537
Marion	Suburban/Rural	5	NW/NE 35th St, Ph. 1a	US 441	600' E. of W Anthony Rd	2016	2 to 4	Curb & Gutter	0.30	2	0.60	$1,770,250	$2,950,417
Manatee	Suburban/Rural	1	44th Ave East	19th St Court East	30th St East	2016	0 to 4	Curb & Gutter	0.90	4	3.60	$11,019,228	$3,060,897
Lake	Suburban/Rural	5	CR 466A, Ph. I	US 27/441	Sunny Ct	2016	2 to 4	Curb & Gutter	0.44	2	0.88	$3,237,561	$3,679,047
Lake	Suburban/Rural	5	CR 466A, Ph. IIIA	Poinsettia Ave	Century Ave	2018	2 to 4	Curb & Gutter	0.42	2	0.84	$3,368,889	$4,010,582
Lake	Suburban/Rural	5	North Hancock Rd	CR 561A	Minneola Interchange	2018	0 to 2	Curb & Gutter	1.20	2	2.40	$2,902,256	$1,209,273
Lee	Suburban/Rural	1	Alico Rd	Ben Hill Griffin Pkwy	E. of Airport Haul Rd	2018	2 to 4	Curb & Gutter	1.78	2	3.56	$18,062,562	$5,073,753
Lee	Suburban/Rural	1	Homestead Rd	S. of Sunrise Blvd	N. of Alabama Rd	2018	2 to 4	Curb & Gutter	2.25	2	4.50	$14,041,919	$3,120,426
Manatee	Suburban/Rural	1	45th St East	44th Ave East	SR 70	2018	2 to 4	Curb & Gutter	1.10	2	2.20	$7,476,126	$3,398,239
Lake	Suburban/Rural	5	Citrus Grove Rd, Ph. I	W. of Grassy Lake Rd	Hancock Rd	2019	0 to 4	Curb & Gutter	0.87	4	3.48	$5,751,614	$1,652,763
Lake	Suburban/Rural	5	Education Ave	Grassy Lake Rd	US 27	2019	0 to 2	Curb & Gutter	1.22	2	2.44	$3,324,769	$1,362,610
Hernando	Suburban/Rural	7	Cortez Blvd Frontage Rd @ I-75			2020	0 to 2	Curb & Gutter	0.62	2	1.24	$2,064,688	$1,665,071
Lake	Suburban/Rural	5	Citrus Grove Rd, Ph. III	US 27	Scrub Jay Ln	2020	2 to 4	Curb & Gutter	0.81	2	1.62	$6,434,819	$3,972,110
Total (2013-2020); Suburban/Rural Counties ONLY									**Count:**	**27**	**106.68**	**$302,939,099**	**$2,839,699**
URBAN & SUBURBAN/RURAL Counties; Curb & Gutter													
Total (2013-2020); Urban & Suburban/Rural Counties									**Count:**	**43**	**169.22**	**$531,816,408**	**$3,142,751**

Source: Data obtained from each respective county (Building and Public Works Departments)

Construction Engineering/Inspection

The CEI cost factor for county roads was estimated as a percentage of the construction cost per lane mile. This factor was determined based on a review of CEI-to-construction cost ratios from recent local improvements and information obtained from other jurisdictions throughout Florida. As shown in Table D-8, recent local improvements ranged from nine (9) to 15 percent with a weighted average of 11 percent. In the case of other Florida jurisdictions, as shown in Table D-9, CEI factors ranged from three (3) percent to 17 percent with a weighted average of nine (9) percent.

For purposes of the thoroughfare road impact fee calculation, the CEI cost for county roads was calculated at 11 percent of the construction cost per lane mile.

Table D-8

CEI-to-Construction Cost Ratio – Local Projects

Description	From	To	Year	CEI	Construction Cost	CEI-to-Constr. Ratio
Howland Blvd	Providence Blvd	Elkcam Blvd	2020	$1,008,912	$11,290,456	9%
Orange Camp Blvd	MLK Blvd	I-4	2020	$883,671	$8,741,920	10%
10th St	Myrtle Ave	US-1	2020	$996,000	$9,456,399	11%
Blue Lake Ave Ext.	Blue Lake Ave	SR 472	-	$240,750	$1,605,000	15%
Williamson Blvd	Strickland Range Rd	Hand Ave	-	$910,000	$7,000,000	13%
Total				**$4,039,333**	**$38,093,775**	**11%**

Source: Volusia County

Table D-9

CEI Cost Factor for County Roads – Other Florida Jurisdictions

Year	County	County Roadways (Cost per Lane Mile)		
		CEI	Constr.	CEI Ratio
2013	Hernando	$178,200	$1,980,000	9%
2013	Charlotte	$220,000	$2,200,000	10%
2014	Indian River	$143,000	$1,598,000	9%
2015	Collier	$270,000	$2,700,000	10%
2015	Brevard	$344,000	$2,023,000	17%
2015	Sumter	$147,000	$2,100,000	7%
2015	Marion	$50,000	$1,668,000	3%
2015	Palm Beach	$108,000	$1,759,000	6%
2017	St. Lucie	$198,000	$2,200,000	9%
2017	Clay	$191,000	$2,385,000	8%
2019	Collier	$315,000	$3,500,000	9%
2019	Sumter	$258,000	$2,862,000	9%
2020	Indian River	$238,000	$2,647,000	9%
2020	Hillsborough	$363,000	$4,036,000	9%
2020	Hernando	$189,000	$2,108,000	9%
2021	Manatee	$252,000	$2,800,000	9%
2021	Flagler	$232,000	$2,582,000	9%
2022	Lake	$172,000	$2,145,000	8%
Average		**$215,000**	**$2,405,000**	**9%**

Source: Recent impact fee studies conducted throughout Florida

Roadway Capacity

As shown in Table D-10, the average capacity per lane miles was based on cost feasible improvements in the Connect 2045 River-to-Sea TPO's Long Range Transportation Plan. The listing of projects reflects the mix of improvements that will yield the vehicle-miles of capacity (VMC) that will be built in Volusia County. The resulting weighted average capacity per lane mile of approximately 10,100 was used in the thoroughfare road impact fee calculation.

Table D-10

Connect 2045 River-to-Sea TPO's Long Range Transportation Plan; Cost Feasible Plan

Maint. Agency	Status	On	From	To	Improvement	Length	Lanes Added	Lane Miles Added	Section Design*	Initial Capacity	Future Capacity	Added Capacity	Vehicle Miles of Capacity Added
Local Roadway Projects													
County	Cost Feasible	LPGA Blvd	Tymber Creek Rd	I-95	2 to 4	1.00	2	2.00	OD	15,930	35,820	19,890	19,890
County	Cost Feasible	Tymber Creek Rd	S. of SR 40	LPGA Blvd	0 to 2	2.15	2	4.30	OD	0	25,410	25,410	54,632
County	Cost Feasible	Hand Ave	Williamson Blvd	SR 5A/Nova Rd	2 to 4	2.25	2	4.50	C&G	15,930	35,820	19,890	44,753
County	Cost Feasible	Williamson Blvd	Madeline Ave	SR 400 (Beville Rd)	2 to 4	1.50	2	3.00	OD	15,930	35,820	19,890	29,835
County	Cost Feasible	Dunn Ave	Williamson Blvd	Bill France Blvd	2 to 4	1.00	2	2.00	C&G	15,930	35,820	19,890	19,890
County	Cost Feasible	Dunn Ave	Bill France Blvd	Clyde Morris Blvd	2 to 4	0.85	2	1.70	C&G	14,060	30,780	16,720	14,212
County	Cost Feasible	Tymber Creek Rd	Peruvian Ln	Airport Rd	2 to 4	0.68	2	1.36	C&G	15,930	35,820	19,890	13,525
County	Cost Feasible	LPGA Blvd	US 92	Tymber Creek Rd	2 to 4	4.40	2	8.80	OD	15,930	35,820	19,890	87,516
County	Cost Feasible	Taylor Branch Rd	SR 421/Dunlawton Ave	Clyde Morris Blvd	2 to 4	0.55	2	1.10	C&G	13,320	29,160	15,840	8,712
County	Cost Feasible	Tomoka Farms Rd	I-4 Overpass	US 92/ISB	2 to 4	1.00	2	2.00	C&G	18,150	49,650	31,500	31,500
County	Cost Feasible	Josephine St/10th St	Old Mission	Tatum St	2 to 4	0.30	2	0.60	C&G	12,390	27,860	15,470	4,641
County	Cost Feasible	Sugar Mill Rd	SR 44	Pioneer Tr	2 to 4	1.30	2	2.60	C&G	12,390	27,860	15,470	20,111
County	Cost Feasible	W. Volusia Beltway	SR 472	Graves Ave	0 to 4	0.80	2	1.60	OD	0	35,820	35,820	28,656
County	Cost Feasible	W. Volusia Beltway	Rhode Island Ave	Harley Strickland Blvd	2 to 4	1.22	2	2.44	OD	15,930	35,820	19,890	24,266
County	Cost Feasible	W. Volusia Beltway	Graves Ave	Rhode Island Ave	2 to 4	1.50	2	3.00	OD	15,930	35,820	19,890	29,835
County	Cost Feasible	Doyle Rd	Providence Blvd	Saxon Blvd	2 to 4	2.70	2	5.40	C&G	15,930	35,820	19,890	53,703
County	Cost Feasible	Doyle Rd	Saxon Blvd	Courtland Blvd	2 to 4	2.55	2	5.10	C&G	15,930	35,820	19,890	50,720
County	Cost Feasible	Beresford Ave Ext.	Blue Lake Ave	SR 44	0 to 2	1.55	2	3.10	OD	0	12,390	12,390	19,205
County	Cost Feasible	W. Volusia Beltway	US 92	SR 44	2 to 4	2.60	2	5.20	C&G	15,930	35,820	19,890	51,714
County	Cost Feasible	W. Volusia Beltway	SR 44	Beresford Ave Ext.	2 to 4	0.75	2	1.50	OD	15,930	35,820	19,890	14,918
County	Cost Feasible	W. Volusia Beltway	Beresford Ave Ext.	Taylor Rd	2 to 4	1.10	2	2.20	OD	15,930	35,820	19,890	21,879
County	Cost Feasible	W. Volusia Beltway	Taylor Rd	Orange Camp Rd	2 to 4	1.00	2	2.00	OD	15,930	35,820	19,890	19,890
County	Cost Feasible	W. Volusia Beltway	Orange Camp Rd	SR 472	2 to 4	1.60	2	3.20	OD	15,930	35,820	19,890	31,824
Total						**34.35**		**68.70**					**695,827**
												Average VMC Added per Lane Mile:	**10,100**
								Curb & Gutter:	31.56	**46%**			
								Open Drainage:	37.14	**54%**			

Source: Connect 2045 River-to-Sea TPO's Long Range Transportation Plan; Cost Feasible Plan

*OD = open drainage; C&G = curb & gutter

Appendix E
Thoroughfare Road Impact Fee:
Credit Component

Appendix E: Thoroughfare Road Impact Fee: Credit Component

This appendix presents the detailed calculations for the credit component. County fuel taxes that are collected in Volusia County are listed below, along with a few pertinent characteristics of each.

1. Constitutional Fuel Tax (2¢/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county. Collected in accordance with Article XII, Section 9 (c) of the Florida Constitution.
- The State allocated 80 percent of this tax to Counties after first withholding amounts pledged for debt service on bonds issued pursuant to provisions of the State Constitution for road and bridge purposes.
- The 20 percent surplus can be used to support the road construction program within the county.
- Counties are not required to share the proceeds of this tax with their municipalities.

2. County Fuel Tax (1¢/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- Primary purpose of these funds is to help reduce a County's reliance on ad valorem taxes.
- Proceeds are to be used for transportation-related expenses, including the reduction of bond indebtedness incurred for transportation purposes. Authorized uses include acquisition of rights-of-way; the construction, reconstruction, operation, maintenance, and repair of transportation facilities, roads, bridges, bicycle paths, and pedestrian pathways; or the reduction of bond indebtedness incurred for transportation purposes.
- Counties are not required to share the proceeds of this tax with their municipalities.

3. Ninth-Cent Fuel Tax (1¢/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- Proceeds may be used to fund transportation expenditures.
- To accommodate statewide equalization, this tax is automatically levied on diesel fuel in every county, regardless of whether a County is levying the tax on motor fuel at all.
- Counties are not required to share the proceeds of this tax with their municipalities.

4. 1st Local Option Tax (up to 6¢/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- Proceeds may be used to fund transportation expenditures.
- To accommodate statewide equalization, all six cents are automatically levied on diesel fuel in every county, regardless of whether a county is levying the tax on motor fuel at all or at the maximum rate.
- Proceeds are distributed to a county and its municipalities according to a mutually agreed upon distribution ratio, or by using a formula contained in the Florida Statutes.

5. 2nd Local Option Tax (up to 5¢/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- Proceeds may be used to fund transportation expenditures needed to meet requirements of the capital improvements element of an adopted Local Government Comprehensive Plan.
- Proceeds are distributed to a county and its municipalities according to a mutually agreed upon distribution scheme, or by using a formula contained in the Florida Statutes.

Each year, the Florida Legislature's Office of Economic and Demographic Research (EDR) produces the *Local Government Financial Information Handbook*, which details the estimated local government revenues for the upcoming fiscal year. Included in this document are the estimated distributions of the various fuel tax revenues for each county in the state. The 2021-22 data represent projected fuel tax distributions to Volusia County for the current fiscal year. Table E-1 shows the distribution per penny for each of the fuel levies, and then the calculation of the weighted average for the value of a penny of fuel tax. The weighting procedure takes into account the differing amount of revenues generated for the various types of fuel taxes. It is estimated that approximately $2.41 million of annual revenue will be generated for the County from one penny of fuel tax in Volusia County.

Table E-1

Estimated Fuel Tax Distribution Allocated to Capital Programs for Volusia County and Municipalities, FY 2021-22[1]

Tax	Amount of Levy per Gallon	Total Distribution	Distribution per Penny
Constitutional Fuel Tax	$0.02	$5,560,031	$2,780,016
County Fuel Tax	$0.01	$2,451,780	$2,451,780
9th Cent Fuel Tax	$0.01	$2,640,559	$2,640,559
1st Local Option (1-6 cents)	$0.06	$14,719,626	$2,453,271
2nd Local Option (1-5 cents)	$0.05	$10,804,527	$2,160,905
Total	**$0.15**	**$36,176,523**	
Weighted Average per Penny[2]			**$2,411,768**

1) Source: Florida Legislature's Office of Economic and Demographic Research, http://edr.state.fl.us/content/local-government/reports/ --
2) The weighted average distribution per penny is calculated by taking the sum of the total distribution and dividing that value by the sum of the total levies per gallon (multiplied by 100).

Capital Improvement Credit

For the calculated impact fee, the capital improvement credit includes capacity-expansion expenditures for road improvements in Volusia County. The components of the credit are as follows:

- County capital project funding
- County debt service
- State capital project funding

County Capital Project Funding

A review of the County's FY 2022-2026 Capital Improvement Plan indicates that most capacity expansion improvements will be funded with gas tax and impact fee revenues, with additional contributions from proportionate share and grant revenues. As shown in Table E-2, Volusia County allocates funding equivalent of approximately 0.2 pennies for the portion of non-impact fee revenues dedicated to capacity expansion projects such as new road construction, lane additions, and intersection improvements.

Table E-2

County Fuel Tax Equivalent Pennies

Source	Cost of Projects	Number of Years	Annual Average	Revenue from 1 Penny[2]	Equivalent Pennies[3]
Projected CIP Expenditures (FY 2022-2026)[1]	$23,817,020	5	$4,763,404	$2,411,768	**$0.020**

1) Source: Table E-5
2) Source: Table E-1
3) Cost of projects divided by number of years divided by revenue from 1 penny (Item 3) divided by 100

In addition, the County allocates an equivalent credit of 2.3 pennies for debt service associated with the Gas Tax Revenue Refunding Bond, Series 2013, and the Capital Improvement Revenue Note, Series 2015. This credit is given for only the portion used for transportation capacity-expansion improvements.

Table E-3

County Debt Service Fuel Tax Equivalent Pennies

Source	Cost of Projects	Number of Years	Annual Average	Revenue from 1 Penny[3]	Equivalent Pennies[4]
Gas Tax Revenue Refunding Bond; Series 2013[1]	$13,395,132	3	$4,465,044	$2,411,768	$0.019
Capital Improvement Revenue Note; Series 2015[2]	$3,998,610	4	$999,653	$2,411,768	$0.004
Total	**$17,393,742**		**$5,464,697**		**$0.023**

1) Source: Table E-6
2) Source: Table E-7
3) Source: Table E-1
4) Cost of projects divided by number of years divided by revenue from 1 penny (Item 3) divided by 100

State Capital Project Funding

In the calculation of the equivalent pennies of fuel tax from the State, expenditures on roadway capacity-expansion spanning a 15-year period (from FY 2012 to FY 2026) were reviewed. From these, a list of improvements was developed, including lane additions, new road construction, intersection improvements, interchanges, and traffic signal projects, etc. The use of a 15-year period, for purposes of developing a State credit for road capacity expansion projects, results in a stable credit, as it accounts for the volatility in FDOT spending in the county over short periods of time.

The total cost of the roadway capacity-expansion projects for the "historical" periods and the "future" period:

- FY 2012-2016 work plan equates to 9.1 pennies
- FY 2017-2021 work plan equates to 5.9 pennies
- FY 2022-2026 work plan equates to 7.1 pennies

The combined weighted average over the 15-year period of state expenditure for capacity-expansion transportation projects results in a total of 7.4 equivalent pennies. Table E-4 documents this calculation and the specific projects that were used in the equivalent penny calculations are summarized in Table E-8.

Table E-4

State Fuel Tax Equivalent Pennies

Source	Cost of Projects	Number of Years	Annual Average	Revenue from 1 Penny[4]	Equivalent Pennies[5]
Projected Work Program (FY 2022-2026)[1]	$86,082,187	5	$17,216,437	$2,411,768	$0.071
Historical Work Program (FY 2017-2021)[2]	$71,042,112	5	$14,208,422	$2,411,768	$0.059
Historical Work Program (FY 2012-2016)[3]	$110,300,683	5	$22,060,137	$2,411,768	$0.091
Total	**$267,424,982**	**15**	**$17,828,332**	**$2,411,768**	**$0.074**

1) Source: Table E-8
2) Source: Table E-8
3) Source: Table E-8
4) Source: Table E-1
5) Cost of projects divided by number of years divided by revenue from 1 penny (Item 3) divided by 100

Table E-5

Volusia County Capital Improvement Plan, FY 2022-2026 (Non-Impact Fee Funded)

Project Title	Improvement	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	Total
Public Works - Road Program							
Advanced Right-of-Way Acquisitions	Acquiring Right-of-Way	$300,000	$300,000	$300,000	$300,000	$300,000	**$1,500,000**
Beville Rd - Clyde Morris Blvd	Installing a median/extending a lane	$38,151	$0	$0	$0	$0	**$38,151**
Graves Ave - Veteran's Memorial Pkwy to Kentucky Ave	Road Safety Improvements & Turn Lane Addition	$951,000	$0	$0	$0	$0	**$951,000**
Howland Blvd - Providence to Elkcam	Road Widening from 2 to 4 Lanes	$3,158,944	$0	$0	$0	$0	**$3,158,944**
LPGA Blvd at Clyde Morris	Capacity Improvements	$0	$1,600,000	$0	$0	$0	**$1,600,000**
Orange Camp Rd - MLK Blvd to I-4	Widen Orange Camp Rd from 2 to 4 Lanes	$1,367,615	$0	$0	$0	$0	**$1,367,615**
Pioneer Trail & Sugar Mill Intersection	Pioneer Trail and Sugar Mill Dr Intersection	$695,000	$0	$0	$0	$0	**$695,000**
Pioneer Trail & Tomoka Farms Roundabout	Roundabout/Intersection	$0	$0	$2,698,000	$0	$0	**$2,698,000**
Taylor Branch Road	4-laning/Capacity Improving	$730,708	$0	$0	$0	$0	**$730,708**
Tenth Street - Myrtle to US 1	Road Widening from 2 to 4 Lanes	$1,232,230	$0	$0	$0	$0	**$1,232,230**
Traffic Signals - New Signals & Signal Conversions	Traffic Signal Installations	$2,212,580	$1,660,000	$1,660,000	$1,285,000	$1,335,000	**$8,152,580**
Williamson Blvd - Strickland Range Intersection	Intersection Improvement	$1,692,792	$0	$0	$0	$0	**$1,692,792**
Total		**$12,379,020**	**$3,560,000**	**$4,658,000**	**$1,585,000**	**$1,635,000**	**$23,817,020**

Source: Volusia County Finance Department

Table E-6

Volusia County Gas Tax Revenue Refunding Bond, Series 2013

Period Ending	Principal	Interest Rate	Interest Payment	Total Payment
4/1/2013			$192,387	$192,387
10/1/2013	$475,000	2.035%	$422,314	$897,314
4/1/2014			$417,480	$417,480
10/1/2014	$605,000	2.035%	$417,480	$1,022,480
4/1/2015			$411,324	$411,324
10/1/2015	$3,685,000	2.035%	$411,325	$4,096,325
4/1/2016			$373,829	$373,829
10/1/2016	$3,760,000	2.035%	$373,830	$4,133,830
4/1/2017			$335,571	$335,571
10/1/2017	$3,835,000	2.035%	$335,572	$4,170,572
4/1/2018			$296,550	$296,550
10/1/2018	$3,915,000	2.035%	$296,551	$4,211,551
4/1/2019			$256,715	$256,715
10/1/2019	$3,995,000	2.035%	$256,715	$4,251,715
4/1/2020			$216,066	$216,066
10/1/2020	$4,080,000	2.035%	$216,066	$4,296,066
4/1/2021			$174,552	$174,552
10/1/2021	$4,160,000	2.035%	$174,553	$4,334,553
4/1/2022			$132,224	$132,224
10/1/2022	$4,245,000	2.035%	$132,224	$4,377,224
4/1/2023			$89,031	$89,031
10/1/2023	$4,335,000	2.035%	$89,031	$4,424,031
4/1/2024			$44,923	$44,923
10/1/2024	$4,415,000	2.035%	$44,923	$4,459,923
Totals	**$41,505,000**		**$6,111,236**	**$47,616,236**
Total Remaining (2022-2024)				**$13,395,132**
Percent for Transportation Capacity				**100%**
Portion for Transportation Capacity				**$13,395,132**
Years Remaining (2022-2024)				**3**

Source: Volusia County Finance Department

Table E-7

Volusia County Capital Improvement Revenue Note, Series 2015

Period Ending	Principal	Interest Rate	Interest Payment	Total Payment
4/1/2016		2.17%	$97,108	$97,108
10/1/2016	$815,000	2.17%	$97,650	$912,650
4/1/2017		2.17%	$88,807	$88,807
10/1/2017	$835,000	2.17%	$88,807	$923,807
4/1/2018		2.17%	$79,748	$79,748
10/1/2018	$850,000	2.17%	$79,748	$929,748
4/1/2019		2.17%	$70,525	$70,525
10/1/2019	$870,000	2.17%	$70,525	$940,525
4/1/2020		2.17%	$61,085	$61,085
10/1/2020	$890,000	2.17%	$61,085	$951,085
4/1/2021		2.17%	$51,429	$51,429
10/1/2021	$910,000	2.17%	$51,429	$961,429
4/1/2022		2.17%	$41,555	$41,555
10/1/2022	$925,000	2.17%	$41,555	$966,555
4/1/2023		2.17%	$31,520	$31,520
10/1/2023	$945,000	2.17%	$31,520	$976,520
4/1/2024		2.17%	$21,266	$21,266
10/1/2024	$970,000	2.17%	$21,266	$991,266
4/1/2025		2.17%	$10,742	$10,742
10/1/2025	$990,000	2.17%	$10,741	$1,000,741
Totals	**$9,000,000**		**$1,108,111**	**$10,108,111**
Total Remaining (2022-2025)				**$3,998,610**
Percent for Transportation Capacity				**100%**
Portion for Transportation Capacity				**$3,998,610**
Years Remaining (2022-2025)				**4**

Source: Volusia County Finance Department

Table E-8

Florida Department of Transportation: Volusia County Work Program, FY 2012 to FY 2026

ItemSeg	Description	Wkmx Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	TOTAL
240836-1	SR 40 FROM SR 15 US 17 TO SR 11	ADD LANES & RECONSTRUCT	$11,416	$1,253	$3,341,705	$82,688	$35,751	$2,219,207	$1,386	$1,661	$57	$0	$0	$1,549,000	$1,292,834	$1,147,300	$550,000	**$10,234,258**
240837-1	SR 40 FROM W OF SR 11 TO W OF CONE ROAD	ADD LANES & RECONSTRUCT	$3,712,654	$2,563,647	$231,260	$160,859	$6,625	$3,531	$182	$644	$276	$0	$0	$1,240,000	$770,000	$403,720	$220,000	**$9,313,398**
240992-1	SR 5 (US 1) AT US 1/SR 430 (MASON AVE) AND US 1/SR 40 (GRANADA)	INTERSECTION IMPROVEMENT	$14,020	$9,548	$1,888	$340	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$25,796**
240992-2	SR 5 (US 1) AT SR 421 (DUNLAWTON AVE) & HERBERT STREET	INTERSECTION IMPROVEMENT	$27,432	$648,561	$75,220	$618	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$751,831**
240992-3	SR 5 (US 1) AT SR 430 (MASON AVE)	INTERSECTION IMPROVEMENT	$90,580	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$90,580**
240992-4	SR 5 (US 1) AT SR 40 (GRANADA BLVD)	INTERSECTION IMPROVEMENT	$78,137	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$78,137**
240992-5	SR 5 US 1 AT CANAL STREET INTERSECTION IMPROVEMENTS	INTERSECTION IMPROVEMENT	$24,664	$35,225	$98,224	$457,023	$1,102	$846,118	$3,216	$5,654,044	$192,565	$574,250	$21,463	$0	$0	$0	$0	**$7,907,894**
240992-7	SR 5 US 1 AT REED CANAL ROAD	INTERSECTION IMPROVEMENT	$30,983	$22,493	$45,876	$187,109	$123,790	$9,171	$1,232,320	$73,150	$7,289	$2,002	$0	$0	$0	$0	$0	**$1,734,183**
240992-8	SR 5 US 1 AT BIG TREE ROAD	INTERSECTION IMPROVEMENT	$17,975	$12,683	$35,719	$63,341	$43,885	$30,585	$708,636	$35,848	$1,335	$0	$0	$0	$0	$0	$0	**$950,007**
240992-9	SR 5 US1 AT LPGA BOULEVARD	INTERSECTION IMPROVEMENT	$251	$172,118	$9,716	$555,094	$4,289	$243	$46	$0	$0	$0	$0	$0	$0	$0	$0	**$741,757**
404419-2	SR 600 (US 92) PHASE II FROM SR5A (NOVA RD) TO LINCOLN STREET	URBAN CORRIDOR IMPROVEMENTS	$0	$0	$0	$1,315,467	$676	$1,362,100	$8,811	$3,671	$0	$0	$0	$0	$0	$0	$0	**$2,690,725**
407355-3	SR 415 FROM SEMINOLE CO LINE TO REED ELLIS RD	ADD LANES & RECONSTRUCT	$29,369,858	$60,948	$285,313	$411,410	$270,825	$31,793	$2,772	$714	$132	$0	$867	$0	$0	$0	$0	**$30,434,632**
407355-4	SR 415 FROM REED ELLIS RD TO 0.3 MILE N OF ACORN LAKE	ADD LANES & RECONSTRUCT	$21,104,036	$841,954	$956,283	$642,264	$104,148	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$23,648,685**
408178-1	SR 483(CLYDE MORRIS) FROM SR 400 (BEVILLE RD) TO SR 600 US 92	ADD LANES & REHABILITATE PVMNT	$111,783	$39,345	$53,955	$57,420	$65,614	$177,085	$66,719	$38,809	$46,287	$138,702	$27,285	$0	$0	$0	$0	**$823,004**
408418-1	VOLUSIA CO ADVANCE R/W ACQUISITION	RIGHT OF WAY ACTIVITIES	$145,810	$747,323	$281,742	$63,446	$909,199	$1,026	$2,787	$22,837	$74,516	$64,183	$35,450	$0	$0	$0	$0	**$2,348,319**
410251-1	SR 15 (US 17) FROM DELEON SPRINGS BLVD TO SR 40	ADD LANES & RECONSTRUCT	$59,900	$16,198	$347,655	$1,255,038	$127,774	$1,526,130	$1,605,696	$3,055,544	$4,812,737	$548,766	$4,155,449	$66,000	$0	$0	$0	**$17,576,887**
410251-3	SR-15/US-17 FROM DELEON SPRINGS BLVD TO LAKE WINONA RD	ADD LANES & RECONSTRUCT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$15,580,541	$0	$0	$0	**$15,580,541**
410676-1	SR 40 LAKE CO LINE TO SR 15 US 17	PD&E/EMO STUDY	$13,205	$9,806	$104	$0	$0	$0	$0	$0	$0	$0	$4,620	$0	$0	$0	$0	**$27,735**
413019-9	VOLUSIA TRAFFIC ENGINEERING CONTRACTS	TRAFFIC SIGNALS	$416,556	$432,436	$319,206	$584,537	$577,079	$678,102	$927,857	$1,246,764	$1,285,964	$1,354,650	$1,504,104	$0	$0	$0	$0	**$9,327,255**
416219-1	SR 430 FROM SR 5A TO E OF SHERRY DR	ADD LEFT TURN LANE(S)	$25,564	$15,072	$344,286	$1,008	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$385,930**
418019-1	SR 40 FROM WILLIAMSON BLVD TO OLD TOMOKA RD	TRAFFIC SIGNALS	$13,786	$13,609	$864,843	$14,723	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$906,961**
418020-1	SR 44 FROM EDDIE ROAD TO 3RD AVENUE	TRAFFIC SIGNALS	$18,847	$1,231,691	$197,401	$10,687	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,458,626**
418021-1	SR 600 (US 92)(ISB) AT WILLIAMSON BLVD INTERSECTION IMPROVEMENT	TRAFFIC SIGNALS	$0	$169,081	$1,023	$157	$0	$0	$0	$0	$256	$0	$18,876	$0	$0	$0	$0	**$189,393**
420433-1	RIVER TO SEA TPO TRAFFIC OPERATIONS SU RESERVE	TRAFFIC OPS IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$352,541	$384,068	**$736,609**
420433-2	RIVER TO SEA TPO TRAFFIC OPERATIONS SU CONTINGENCY	TRAFFIC OPS IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$339,426	$0	$0	$0	$0	**$339,426**
421629-1	SR 44 AT GLENCOE ROAD INTERSECTION	TRAFFIC SIGNALS	$38,788	$4,628	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$43,416**
421725-1	ITS TRAFFIC OPS AND SAFETY FEASIBILITY STUDY COUNTYWIDE	PD&E/EMO STUDY	$16,192	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$16,192**
421725-2	CORRIDOR IMPROVEMENT PROGRAM/FEASIBILITY STUDY COUNTYWIDE	PD&E/EMO STUDY	$446,441	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$446,441**
422627-1	SR 600 / US 92 FROM I-4 EAST BOUND RAMP TO TOMOKA FARMS ROAD	ADD LANES & RECONSTRUCT	$1,993,424	$234,188	$125,577	$368,853	$197,880	$210,963	$1,252,850	$24,343	$445	$2,123	$577,701	$0	$0	$0	$0	**$4,988,347**
422683-1	SR 600 US 92 AT SR 5A (NOVA RD)	ADD LEFT TURN LANE(S)	$16,660	$932,964	$58,953	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,008,577**
423864-1	SR 600 (US 92) AT WEST PARKWAY	TRAFFIC SIGNALS	$10,496	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$10,578**
425665-1	SR 5 (US 1) AT SR 5A (NOVA RD) INTERSECTION IMPROVEMENT	ADD LEFT TURN LANE(S)	$341,215	$53,658	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$394,873**
426889-1	SR 5 (US 1) FROM N OF FALCON AVE TO N OF LAMONT ST	TRAFFIC OPS IMPROVEMENT	$17,352	$1,214,692	$114,072	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,346,116**
427036-1	SR 441/600 FROM SR 421 TO SR 600	RIGHT OF WAY ACTIVITIES	$732	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$732**
427621-1	WILLOW RUN CITY OF PORT ORANGE AT CLYDE MORRIS BLVD	ADD RIGHT TURN LANE(S)	$44,788	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$44,788**
427632-1	SR 421 DUNLAWTON AVE @VILLAGE TRAIL PORT ORANGE	ADD RIGHT TURN LANE(S)	$93,822	$2,572	$0	$0	$0	$0	$0	$0	$0	$0	$1,787	$0	$0	$0	$0	**$98,181**
427633-1	BIG TREE & MAGNOLIA SCHOOL CROSSING INTERSECTION IMPROVEMENTS	TRAFFIC OPS IMPROVEMENT	$243,416	$1,724	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$245,140**
427637-1	SR 5A (NOVA RD) DIVISION AVE AND SR 40 INTERSECTION	TRAFFIC SIGNALS	$50,637	$176,082	$2,555	$1,115	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$230,389**
427639-1	SR 421 (TAYLOR RD) FROM I-95 TO US 1 (RIDGEWOOD AVE)	TRAFFIC OPS IMPROVEMENT	$205,350	$135	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$205,485**
428926-1	SR 430 & SR 40 MAST ARM REPLACEMENTS MULTIPLE LOCATIONS	TRAFFIC SIGNAL UPDATE	$139,556	$1,612	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$141,168**
428947-1	SR 40 FROM BREAKAWAY TRAIL TO WILLIAMSON BLVD	ADD LANES & RECONSTRUCT	$13,602	$26,864	$7,804	$12,657	$0	$0	$0	$0	$7,099	$0	$900,000	$3,220,000	$0	$1,290,000	$2,140,000	**$7,618,026**
429943-1	SR15/600 (US 17-92) FROM VOORHIS AVE TO WISCONSIN AVE	PRELIMINARY ENGINEERING	$50,765	$45,876	$4,877	$48	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$101,566**
430176-1	PIONEER TRAIL AT TURNBULL BAY ROAD INTERSECTION IMPROVEMENT	INTERSECTION IMPROVEMENT	$0	$0	$1,053,180	$177	$1,845	$768	$181	$0	$0	$0	$0	$0	$0	$0	$0	**$1,056,151**
430177-1	SR 421(DUNLAWTON AV) AT SPRUCE CREEK RD INTERSECTION IMPROVEMENT	ADD RIGHT TURN LANE(S)	$634,145	$4,775	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$638,920**
430178-1	SR 600 (US 92) AT SR 5A (NOVA RD) IMPROVE TRAFFIC SIGNAL	INTERSECTION IMPROVEMENT	$21,994	$724	$0	$14	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$22,732**
430178-2	SR 600 (US 92) FROM I-95 NB OFF RAMP TO PALMETTO AVENUE	INTERSECTION IMPROVEMENT	$2,378,678	$430,078	$110,327	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,919,083**
430216-1	SR 15/600 (US17/92) AT COLUMBA ROAD INSTALL TRAFFIC SIGNAL	TRAFFIC SIGNALS	$141,812	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$141,812**
430232-1	SR A1A AT LYNNHURST	INTERSECTION IMPROVEMENT	$160,748	$206,058	$6,628	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$373,434**
430339-1	SR A1A AT 3RD AVENUE RE-ALIGN NORTH APPROACH	INTERSECTION IMPROVEMENT	$105	$0	$0	$0	$0	$0	$0	$0	$0	$0	$894	$0	$0	$0	$0	**$999**
431916-1	HOWLAND BLVD FROM COURTLAND BLVD TO N OF SR 415	ADD LANES & RECONSTRUCT	$0	$4,869,873	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,869,873**
431922-1	SR 44 AT KEPLER ROAD INTERSECTION IMPROVEMENTS	ROUNDABOUT	$0	$0	$0	$0	$0	$0	$0	$1,330,580	$58,755	$307,056	$2,000,608	$347,834	$254,087	$0	$0	**$4,298,920**
431988-1	US 1 AT 2ND STREET MAST ARMS IMPROVEMENT	TRAFFIC SIGNAL UPDATE	$150,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$150,000**
433449-1	VOLUSIA COUNTYWIDE SIGNAL UPDATES	TRAFFIC SIGNAL UPDATE	$0	$260,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$260,000**
433623-2	ORANGE AVE SIGNAL SYSTEM FROM SR 5A (NOVA) TO BEACH STREET	TRAFFIC SIGNAL UPDATE	$0	$1,144,231	$580	$187,630	$1,016	$1,445	$203	$0	$0	$0	$0	$0	$0	$0	$0	**$1,335,105**
433666-1	HERBERT STREET WB RIGHT TURN LANE AT CLYDE MORRIS BLVD	ADD TURN LANE(S)	$0	$0	$0	$239,625	$565	$336	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$240,526**
433941-1	VOLUSIA COUNTY CITY OF DAYTONA TRAFFIC SIGNAL UPDATES	TRAFFIC SIGNALS	$0	$499,913	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$499,913**
434455-1	SR 40 FROM INTERCHANGE BLVD TO I-95 SB RAMPS	ADD TURN LANE(S)	$0	$0	$0	$209,329	$51,848	$602,432	$515	$110	$71	$0	$3,818	$0	$0	$0	$0	**$868,123**
434712-1	US 92 DAYTONABEACH AIRPORT SIS CONNECT W OF TOMOKA FARMS TO E BEACH ST	TRAFFIC OPS IMPROVEMENT	$0	$0	$112,367	$1,860,314	$25,210	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,997,891**
434883-1	SR 600 (US 92) FROM MIDWAY AVE TO ADAMS ST	TRAFFIC SIGNALS	$0	$0	$0	$545,589	$70,823	$28,897	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$645,309**
434885-1	SR 5 (US 1) AT VENTURE RD	TRAFFIC SIGNALS	$0	$0	$166,450	$0	$212	$0	$0	$0	$0	$0	$1,336	$0	$0	$0	$0	**$167,998**
435248-1	SR 5 (US 1) AT 3RD STREET	TRAFFIC SIGNALS	$0	$0	$94,585	$680	$455	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$95,720**
435404-1	SR 15/600 (US 17/92) FROM FIREHOUSE ROAD TO BERESFORD AVENUE	TRAFFIC SIGNALS	$0	$0	$391,469	$23,611	$174	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$415,254**
435596-1	SR A1A (ATLANTIC AVE) MAST ARM AT CARDINAL DRIVE	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$270,179	$4,472	$694,651	$52,342	$48,328	$0	$0	$0	$0	**$1,069,972**
435620-1	SR 400 (BEVILLE RD) ADD TURN LANES AND DRAINA GE IMPROVEMENTS	ADD TURN LANE(S)	$0	$0	$362,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$362,000**
435675-1	SR 44 AT AIRPORT ROAD	TRAFFIC SIGNALS	$0	$0	$13,462	$229,913	$24,106	$196	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$267,677**
435892-1	SOUTH WILLIAMSON BLVD EXTENSION FROM PIONEER TL TO AIRPORT ROAD	ADD LANES & RECONSTRUCT	$0	$0	$0	$5,500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,500,000**

Table E-8 (continued)

Florida Department of Transportation: Volusia County Work Program, FY 2012 to FY 2026

ItemSeg	Description	Wkmx Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	TOTAL
435892-2	WILLIAMSON BLVD FROM STRICKLAND RANGE RD TO NORTH OF HAND AVE	ADD LANES & RECONSTRUCT	$0	$0	$0	$0	$0	$0	$0	$2,000,000	$2,000,000	$0	$0	$0	$0	$0	$0	**$4,000,000**
436325-1	EVENT MANAGEMENT FOR DAYTONA BEACH	ITS SURVEILLANCE SYSTEM	$0	$0	$0	$0	$290,194	$3,029,504	$172,103	$4,401	$148	$1,212	$2,063	$0	$0	$0	$0	**$3,499,625**
436325-2	EVENT MANAGEMENT EXTENSION PHASE 2	ITS SURVEILLANCE SYSTEM	$0	$0	$0	$0	$0	$0	$0	$493,002	$20,134	$2,021,813	$398,932	$0	$0	$0	$0	**$2,933,881**
436366-1	SR 44 FROM PALMETTO STREET TO LIVE OAK STREET	TRAFFIC SIGNALS	$0	$0	$0	$52	$324,007	$16,198	$56,709	$574,544	$448,133	$71,002	$54,096	$0	$0	$0	$0	**$1,544,741**
436472-1	NSB CITYWIDE SIGNAL PRE-EMPTION SYSTEM	ATMS - ARTERIAL TRAFFIC MGMT	$0	$0	$0	$0	$180,752	$1,317	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$182,069**
437121-1	US 1/PARK AVE FROM S OF PARK AVE TO N OF PARK AVE	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$0	$8,532	$388,539	$22,893	$160,024	$0	$0	$0	$0	**$579,988**
437842-1	US 17/92 FROM S I-4 RAMP TO N OF MINNESOTA AVENUE	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$125,027	$7,706	$2,115,225	$52,258	$4,863	$0	$0	$0	$0	**$2,305,079**
437942-1	US 92 (SR 600) FROM THE HALIFAX RIVER BRIDGE TO SR A1A	MISCELLANEOUS CONSTRUCTION	$0	$0	$0	$0	$0	$35	$230,823	$1,315,100	$207,500	$1,593,702	$7,753,882	$9,393,172	$1,043,000	$172,870	$0	**$21,710,084**
438017-1	SR A1A @ HARVARD DRIVE	TRAFFIC SIGNAL UPDATE	$0	$0	$0	$0	$0	$0	$204,443	$3,217	$644,219	$3,335	$18,683	$0	$0	$0	$0	**$873,897**
438968-2	SR 15A (TAYLOR RD) FROM SR 15 (US 17-92) TO 480 FT WEST OF SR 15	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$484,428	$67,064	$27,700	$1,500,986	$45,400	$0	$0	$0	$0	**$2,125,578**
438982-1	US 1/SR 5 FROM 6TH STREET TO FLOMICH STREET	TRAFFIC SIGNAL UPDATE	$0	$0	$0	$0	$0	$20,732	$705,281	$32,966	$206,603	$344,142	$2,834,476	$0	$0	$0	$0	**$4,144,200**
439144-1	SR 472 @ MINNESOTA AVE	ADD LEFT TURN LANE(S)	$0	$0	$0	$0	$0	$631	$130,974	$17,671	$121,968	$0	$4,166	$0	$0	$0	$0	**$275,410**
439392-1	SR 44 AT GRAND AVE	ROUNDABOUT	$0	$0	$0	$0	$2,049,803	$335,824	$0	$701	$0	$0	$3,438	$0	$0	$0	$0	**$2,389,766**
440092-1	CATALINA BOULEVARD @ HOWLAND BOULEVARD	ADD TURN LANE(S)	$0	$0	$0	$0	$0	$210,812	$5,248	$0	$0	$0	$0	$0	$0	$0	$0	**$216,060**
440270-1	SR 40 ADAPTIVE SIGNAL SYSTEM	ATMS - ARTERIAL TRAFFIC MGMT	$0	$0	$0	$0	$0	$0	$0	$115,951	$1,870,992	$12,502	$3,861	$0	$0	$0	$0	**$2,003,306**
440920-1	TIVOLI DRIVE @ PROVIDENCE BLVD TO SAXON BLVD	ADD TURN LANE(S)	$0	$0	$0	$0	$0	$0	$0	$834,944	$6,035	$1,787	$0	$0	$0	$0	$0	**$842,766**
442316-1	SR 600 FROM HIGHLAND AVE TO MAINLAND H.S. ENTRANCE	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$237,667	$97,518	$66,549	$595	$3,576	$0	$0	$0	$0	**$405,905**
442316-2	SR 600 AT HILTON AVE (DAYTONA STATE COLLEGE MAIN ENTRANCE)	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$156,781	$17,789	$50,189	$417	$11,706	$0	$0	$0	$0	**$236,882**
442467-1	SR 15 / US 17-92 AT FORT FLORIDA RD	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$301,766	$66,127	$758,410	$9,513	$26,381	$0	$0	$0	$0	**$1,162,197**
442499-1	SR 44 FROM AIRPORT RD TO E 3RD AVE.	TRAFFIC CONTROL DEVICES/SYSTEM	$0	$0	$0	$0	$0	$0	$217,475	$214	$1,833,070	$180,491	$13,754	$0	$0	$0	$0	**$2,245,004**
442522-1	SR 421 FROM SUMMER TREES RD TO SR 5 / A1A	TRAFFIC CONTROL DEVICES/SYSTEM	$0	$0	$0	$0	$0	$0	$228,766	$272	$1,718,662	$183,118	$4,479	$0	$0	$0	$0	**$2,135,297**
442932-1	SR 44 FROM SOUTHBOUND I-95 TO MEMORIAL MEDICAL PARKWAY	INTERCHANGE IMPROVEMENT	$0	$0	$0	$0	$0	$0	$3,184	$866	$488,627	$1,817,191	$73,500	$0	$0	$0	$0	**$2,383,368**
443337-1	DELAND NORTHWEST INDUSTRIAL BUSINESS PARK ACCESS ROAD	NEW ROAD CONSTRUCTION	$0	$0	$0	$0	$0	$0	$0	$1,000,000	$0	$0	$0	$0	$0	$0	$0	**$1,000,000**
446232-1	SR 5 (US 1) AT BROADWAY AVE	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$0	$0	$209,142	$0	$0	$0	$0	$0	$0	**$209,142**
446544-1	SR A1A @ WILLIAMS AVE SIGNAL RECONSTRUCTION	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$235,189	$6,777	$792,287	$0	$0	$0	**$1,034,253**
446558-1	SR-472 AND MINNESOTA AVE INTERSECTION IMPROVEMENT	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$213,961	$14,548	$1,238,708	$0	$0	$0	**$1,467,217**
447698-1	SR 600 AT THE INTERSECTION OF LOCKHART ST	TRAFFIC CONTROL DEVICES/SYSTEM	$0	$0	$0	$0	$0	$0	$375	$0	$0	$773	$627,356	$0	$254,545	$36,000	$711,115	**$1,630,164**
447712-1	PIONEER TRAIL / TOMOKA FARMS RD ROUNDABOUT	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,437,749	$0	$0	**$2,437,749**
447712-2	PIONEER TRAIL / TOMOKA FARMS RD ROUNDABOUT	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$500,000	$0	$0	$0	$0	$0	**$500,000**
448456-1	LPGA BLVD FROM US 92 (SR 600) TO WILLIAMSON BLVD	PD&E/EMO STUDY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12,560	$10,215,448	$0	$0	$0	$50,000	**$10,278,008**
448773-1	SR 483 (CLYDE MORRIS) FROM SR 400 (BEVILLE RD) TO N OF DUNN AVE	PD&E/EMO STUDY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$11,955	$3,441,006	$0	$0	$0	$0	**$3,452,961**
449235-1	SR 600 / US 17-92 AND ENTERPRISE RD INTERSECTION	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$789,836	$0	$1,530,378	$0	**$2,320,214**
449469-1	LPGA BOULEVARD & JIMMY ANN DRIVE INTERSECTION	TRAFFIC SIGNALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$649,284	$0	**$649,284**
449770-1	DUNLAWTON AVENUE TURN LANES VARIOUS LOCATIONS	INTERSECTION IMPROVEMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$549,045	$0	$261,846	$0	**$810,891**
TOTAL			**$62,498,175**	**$17,153,720**	**$10,116,305**	**$15,042,836**	**$5,489,647**	**$11,345,181**	**$9,345,406**	**$18,151,776**	**$20,364,280**	**$11,835,469**	**$35,364,427**	**$34,766,423**	**$6,052,215**	**$5,843,939**	**$4,055,183**	**$267,424,982**
SUB-TOTALS							**2012 to 2016 Total: $110,300,683**					**2017 to 2021 Total: $71,042,112**					**2022 to 2026 Total: $86,082,187**	

Source: FDOT

Table E-9

Average Motor Vehicle Fuel Efficiency – Excluding Interstate Travel

Travel Vehicle Miles of Travel (VMT) @			
	22.9	**6.7**	
Other Arterial Rural	300,298,000,000	48,193,000,000	348,491,000,000
Other Rural	286,073,000,000	28,427,000,000	314,500,000,000
Other Urban	1,395,300,000,000	93,212,000,000	1,488,512,000,000
Total	***1,981,671,000,000***	***169,832,000,000***	***2,151,503,000,000***

Percent VMT

@ 22.9 mpg	@ 6.7 mpg
86%	14%
91%	9%
94%	6%
92%	**8%**

Fuel Consumed			
	Gallons @ 22.9 mpg	Gallons @ 6.7 mpg	
Other Arterial Rural	13,113,449,782	7,192,985,075	20,306,434,857
Other Rural	12,492,270,742	4,242,835,821	16,735,106,563
Other Urban	60,930,131,004	13,912,238,806	74,842,369,810
Total	***86,535,851,528***	***25,348,059,702***	***111,883,911,230***

Total Mileage and Fuel	
2,151,503	**miles (millions)**
111,884	**gallons (millions)**
19.23	**mpg**

Source: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2020*, Section V, Table VM-1
Annual Vehicle Distance Traveled in Miles and Related Data - 2020 by Highway Category and Vehicle Type
http://www.fhwa.dot.gov/policyinformation/statistics.cfm

Table E-10

Annual Vehicle Distance Travelled in Miles and Related Data – 2020[1]

By Highway Category and Vehicle Type

Revised: December 2021 **TABLE VM-1**

YEAR	ITEM	LIGHT DUTY VEHICLES SHORT WB[2]	MOTOR-CYCLES	BUSES	LIGHT DUTY VEHICLES LONG WB[2]	SINGLE-UNIT TRUCKS[3]	COMBINATION TRUCKS	SUBTOTALS		ALL MOTOR VEHICLES
								ALL LIGHT VEHICLES[2]	SINGLE-UNIT 2-AXLE 6-TIRE OR MORE AND COMBINATION TRUCKS	
	Motor-Vehicle Travel (millions of vehicle-miles):									
2020	Interstate Rural	123,042	961	1,383	44,587	10,075	51,770	**167,629**	**61,845**	231,818
2020	Other Arterial Rural	207,498	2,205	2,056	92,800	17,686	30,507	**300,298**	**48,193**	352,752
2020	Other Rural	192,895	2,711	1,747	93,178	16,386	12,041	**286,073**	**28,427**	318,957
2020	All Rural	523,434	5,877	5,186	230,565	44,147	94,318	754,000	138,465	903,527
2020	Interstate Urban	317,721	2,787	2,728	101,725	23,450	47,014	**419,446**	**70,464**	495,425
2020	Other Urban	1,055,394	8,968	7,190	339,906	57,282	35,929	**1,395,300**	**93,212**	1,504,669
2020	All Urban	1,373,115	11,755	9,918	441,630	80,733	82,943	1,814,746	163,676	2,000,095
2020	Total Rural and Urban[5]	1,896,549	17,632	15,104	672,196	124,880	177,261	2,568,745	302,141	2,903,622
2020	Number of motor vehicles registered[2]	193,921,800	8,317,363	1,006,469	59,199,428	10,500,105	2,979,277	253,121,228	13,479,382	275,924,442
2020	Average miles traveled per vehicle	9,780	2,120	15,007	11,355	11,893	59,498	10,148	22,415	10,523
2020	Person-miles of travel (millions)[4]	3,161,448	21,237	320,202	1,142,850	124,880	177,261	4,304,298	302,141	4,947,878
2020	Fuel consumed (thousand gallons)	74,932,021	400,937	2,053,899	36,998,124	16,377,768	28,421,740	111,930,145	44,799,508	159,184,488
2020	Average fuel consumption per vehicle (gallons)	386	48	2,041	625	1,560	9,540	442	3,324	577
2020	Average miles traveled per gallon of fuel consumed	25.3	44.0	7.4	18.2	7.6	6.2	**22.9**	**6.7**	18.2

(1) The FHWA estimates national trends by using State reported Highway Performance and Monitoring System (HPMS) data, fuel consumption data (MF-21 and MF-27), vehicle registration data (MV-1, MV-9, and MV-10), other data such as the R.L. Polk vehicle data, and a host of modeling techniques.

(2) Light Duty Vehicles Short WB - passenger cars, light trucks, vans and sport utility vehicles with a wheelbase (WM) equal to or less than 121 inches. Light Duty Vehicles Long WB - large passenger cars, vans, pickup trucks, and sport/utility vehicles with wheelbases (WB) larger than 121 inches. All Light Duty Vehicles - passenger cars, light trucks, vans and sport utility vehicles regardless of wheelbase.

(3) Single-Unit - single frame trucks that have 2-Axles and at least 6 tires or a gross vehicle weight rating exceeding 10,000 lbs.

(4) For 2020 and 2019, the vehicle occupancy is estimated by the FHWA from the 2017 National Household Travel Survey (NHTS) and the annual R.L. Polk Vehicle registration data; For single unit truck and heavy trucks, 1 motor vehicle mile traveled = 1 person-mile traveled.

(5) VMT data are based on the latest HPMS data available; it may not match previous published results.

Appendix F
Thoroughfare Road Impact Fee:
Calculated Rate Schedule

Appendix F: Thoroughfare Road Impact Fee: Calculated Rate Schedule

This appendix presents the detailed fee rate calculations for each land use in the Volusia County Thoroughfare Roads impact fee schedule.

Table F-1

Volusia County – Calculated Thoroughfare Road Impact Fee Schedule

		Gasoline Tax								Unit Cost per Lane Mile:	$3,267,000			Interstate/Toll Facility Adjustment Factor:	32.5%					
		$$ per Gallon to Capital:	$0.117							Average VMC per Lane Mile:	10,100			Cost per VMC:	$323.47					
		Facility Life (Years):	25		County Revenues:	0.043				Fuel Efficiency:	19.23 mpg			City Road Adjustment:	97.2%					
		Interest Rate:	2.50%		State Revenues:	0.074				Effective Days per Year:	365									
ITE LUC	Land Use	Unit	Trip Rate	Trip Rate Source	Initial Trip Length	Trip Length Adjustment Factor	Assessable Trip Length	Total Trip Length	Trip Length Source	Percent New Trips	% New Trips Source	Net VMT[1]	Net VMT (Adjusted)[2]	Total Impact Cost	Annual Cap. Imp. Credit	Cap. Imp. Credit	Net Impact Fee	Current Adopted Fee Rate[3]	% Change	
	RESIDENTIAL:																			
210	Single Family (Detached) 1,200 sf or less	du	6.96	Tiering Analysis (Appendix C)	6.62	1.25	8.28	8.78	FL Studies	100%	n/a	19.45	18.91	$6,117	$68	$1,253	**$4,864**	$5,432	-11%	
	Single Family (Detached) 1,201 to 1,700 sf	du	7.29	Tiering Analysis (Appendix C)	6.62	1.25	8.28	8.78	FL Studies	100%	n/a	20.37	19.80	$6,405	$71	$1,308	**$5,097**	$5,432	-6%	
	Single Family (Detached) 1,701 to 2,200 sf	du	7.81	Tiering Analysis (Appendix C)	6.62	1.25	8.28	8.78	FL Studies	100%	n/a	21.83	21.22	$6,864	$76	$1,400	**$5,464**	$5,432	1%	
	Single Family (Detached) 2,201 to 3,000 sf	du	8.36	Tiering Analysis (Appendix C)	6.62	1.25	8.28	8.78	FL Studies	100%	n/a	23.36	22.71	$7,346	$82	$1,511	**$5,835**	$5,432	7%	
	Single Family (Detached) greater than 3,000 sf	du	8.90	Tiering Analysis (Appendix C)	6.62	1.25	8.28	8.78	FL Studies	100%	n/a	24.87	24.17	$7,818	$87	$1,603	**$6,215**	$5,432	14%	
215	Single Family (Attached)	du	6.77	Blend of ITE 11th & FL Studies	6.62	1.25	8.28	8.78	Same as LUC 210	100%	n/a	18.92	18.39	$5,949	$66	$1,216	**$4,733**	n/a	n/a	
220	Multi-Family (Low-Rise) 1-3 Stories	du	6.74	ITE 11th Edition	5.21	1.25	6.51	7.01	FL Studies	100%	n/a	14.81	14.40	$4,658	$52	$958	**$3,700**	$3,245	14%	
221/222	Multi-Family (Mid/High Rise) 4 Stories or more	du	4.54	ITE 11th Edition	5.21	1.25	6.51	7.01	FL Studies	100%	n/a	9.97	9.69	$3,134	$35	$645	**$2,489**	$1,969	26%	
240	Mobile Home/RV Unit (Park Only)	du	4.22	FL Studies	4.29	1.25	5.36	5.86	FL Studies	100%	n/a	7.63	7.42	$2,400	$27	$497	**$1,903**	$2,002	-5%	
	TRANSIENT, ASSISTED, GROUP:																			
310	Hotel	room	5.57	Blend of ITE 11th & FL Studies	6.14	1.25	7.68	8.18	FL Studies	66%	FL Studies	9.53	9.26	$2,995	$33	$608	**$2,387**	$3,003	-21%	
320	Motel	room	3.35	ITE 11th Edition	4.34	1.25	5.43	5.93	FL Studies	77%	FL Studies	4.73	4.60	$1,488	$17	$313	**$1,175**	$1,201	-2%	
620	Nursing Home	1,000 sf	6.75	ITE 11th Edition	2.59	1.25	3.24	3.74	FL Studies	89%	FL Studies	6.57	6.39	$2,067	$25	$461	**$1,606**	$1,330	21%	
	RECREATION:																			
411	Public Park	acre	0.78	ITE 11th Edition	5.15	1.05	5.41	5.91	Same as LUC 710	90%	Based on LUC 710	1.28	1.24	$401	$5	$92	**$309**	$157	97%	
430	Golf Course	hole	30.38	ITE 11th Edition	6.62	1.05	6.95	7.45	Same as LUC 210	90%	Based on LUC 710	64.13	62.33	$20,162	$226	$4,164	**$15,998**	n/a	n/a	
445	Movie Theater	1,000 sf	82.30	Blend of ITE 11th & FL Studies	2.24	1.05	2.35	2.85	FL Studies	87%	FL Studies	56.79	55.20	$17,855	$227	$4,182	**$13,673**	$13,110	4%	
	INSTITUTIONS:																			
560	Church	1,000 sf	7.60	ITE 11th Edition	3.93	1.05	4.13	4.63	Midpoint of LUC 710 & LUC 820 (App. C)	90%	Based on LUC 710	9.53	9.26	$2,995	$35	$645	**$2,350**	$1,390	69%	
565	Day Care Center	1,000 sf	49.63	Blend of ITE 11th & FL Studies	2.03	1.05	2.13	2.63	FL Studies	73%	FL Studies	26.04	25.31	$8,187	$106	$1,953	**$6,234**	$6,140	2%	
	MEDICAL:																			
610	Hospital	1,000 sf	10.77	ITE 11th Edition	6.62	1.25	8.28	8.78	Same as LUC 210	76%	Midpoint of LUC 310 & LUC 720	22.87	22.23	$7,191	$80	$1,474	**$5,717**	$2,150	166%	
	OFFICE:																			
710	General Office	1,000 sf	10.84	ITE 11th Edition	5.15	1.25	6.44	6.94	FL Studies	92%	FL Studies	21.68	21.07	$6,815	$77	$1,419	**$5,396**	$4,020	34%	
714	Corporate Headquarters Bldg	1,000 sf	7.95	ITE 11th Edition	5.15	1.25	6.44	6.94	Same as LUC 710	92%	Same as LUC 710	15.90	15.45	$4,998	$56	$1,032	**$3,966**	$3,280	21%	
720	Medical Office 10,000 sf & Under	1,000 sf	23.83	FL Studies	5.16	1.25	6.45	6.95	FL Studies	86%	FL Studies	44.61	43.36	$14,025	$158	$2,911	**$11,114**	$14,780	-25%	
	Medical Office greater than 10,000 sf	1,000 sf	34.32	Blend of ITE 11th & FL Studies	5.16	1.25	6.45	6.95	FL Studies	86%	FL Studies	64.25	62.45	$20,200	$228	$4,201	**$15,999**	$14,780	8%	

Table F-1 (continued)

Volusia County – Calculated Thoroughfare Road Impact Fee Schedule

ITE LUC	Land Use	Unit	Trip Rate	Trip Rate Source	Initial Trip Length	Trip Length Adjustment Factor	Assessable Trip Length	Total Trip Length	Trip Length Source	Percent New Trips	% New Trips Source	Net VMT[1]	Net VMT (Adjusted)[2]	Total Impact Cost	Annual Cap. Imp. Credit	Cap. Imp. Credit	Net Impact Fee	Current Adopted Fee Rate[3]	% Change
	RETAIL:																		
822	Retail/Shopping Center less than 40,000 sfgla	1,000 sfgla	54.45	ITE 11th Edition	1.48	1.05	1.55	2.05	Appendix C: Fig. C-1 (19k sfgla)	48%	Appendix C: Fig. C-2 (19k sfgla)	13.67	13.29	$4,299	$59	$1,087	**$3,212**	$6,450	-50%
821	Retail/Shopping Center 40,000 to 150,000 sfgla	1,000 sfgla	67.52	ITE 11th Edition	1.94	1.05	2.04	2.54	Appendix C: Fig. C-1 (59k sfgla)	57%	Appendix C: Fig. C-2 (59k sfgla)	26.50	25.76	$8,332	$109	$2,008	**$6,324**	$6,450	-2%
820	Retail/Shopping Center greater than 150,000 sfgla	1,000 sfgla	37.01	ITE 11th Edition	2.80	1.05	2.94	3.44	Appendix C: Fig. C-1 (538k sfgla)	75%	Appendix C: Fig. C-2 (538k sfgla)	27.54	26.77	$8,659	$106	$1,953	**$6,706**	$6,450	4%
840/841	New/Used Automobile Sales	1,000 sf	24.58	Blend of ITE 11th & FL Studies	4.60	1.05	4.83	5.33	FL Studies	79%	FL Studies	31.65	30.76	$9,950	$115	$2,119	**$7,831**	$8,450	-7%
849	Tire Superstore/Auto Repair	bay	30.55	ITE 11th Edition	2.44	1.05	2.56	3.06	Same as LUC 848 (Appendix C)	68%	Same as LUC 848 (Appendix C)	17.95	17.45	$5,644	$71	$1,308	**$4,336**	$4,407	-2%
850	Supermarket	1,000 sf	94.48	Blend of ITE 11th & FL Studies	2.08	1.05	2.18	2.68	FL Studies	56%	FL Studies	38.93	37.84	$12,240	$157	$2,893	**$9,347**	$10,820	-14%
862	Home Improvement Superstore	1,000 sf	30.74	ITE 11th Edition	2.33	1.05	2.45	2.95	Appendix C: Fig. C-1 (135k sfgla)	64%	Appendix C: Fig. C-2 (135k sfgla)	16.27	15.81	$5,114	$64	$1,179	**$3,935**	$12,400	-68%
880/881	Pharmacy/Drug Store with and w/out Drive-Thru	1,000 sf	103.86	Blend of ITE 11th & FL Studies	2.08	1.05	2.18	2.68	FL Studies	32%	FL Studies	24.45	23.77	$7,689	$99	$1,824	**$5,865**	$5,210	13%
890	Furniture Store	1,000 sf	6.30	ITE 11th Edition	6.09	1.05	6.39	6.89	FL Studies	54%	FL Studies	7.34	7.13	$2,306	$26	$479	**$1,827**	$1,800	2%
	SERVICE:																		
911	Bank/Savings w/out Drive-Thru	1,000 sf	57.94	ITE 11th Edition (Adjusted)[4]	2.46	1.05	2.58	3.08	Same as LUC 912	46%	Same as LUC 912	23.21	22.56	$7,297	$91	$1,677	**$5,620**	$5,840	-4%
912	Bank/Savings w/Drive-Thru	1,000 sf	103.73	Blend of ITE 11th & FL Studies	2.46	1.05	2.58	3.08	FL Studies	46%	FL Studies	41.55	40.39	$13,065	$163	$3,003	**$10,062**	$9,850	2%
931	Fine Dining/Quality Restaurant	1,000 sf	86.03	Blend of ITE 11th & FL Studies	3.14	1.05	3.30	3.80	FL Studies	77%	FL Studies	73.78	71.71	$23,196	$280	$5,159	**$18,037**	$17,400	4%
932	High-Turnover (Sit-Down) Restaurant	1,000 sf	103.51	Blend of ITE 11th & FL Studies	2.90	1.05	3.05	3.55	FL Studies	71%	FL Studies	75.65	73.53	$23,784	$290	$5,343	**$18,441**	$21,640	-15%
934	Fast Food Resturant w/Drive-Thru	1,000 sf	479.31	Blend of ITE 11th & FL Studies	2.21	1.05	2.32	2.82	FL Studies	58%	FL Studies	217.67	211.58	$68,439	$870	$16,029	**$52,410**	$47,840	10%
941	Quick Lubrication Vehicle Shop	bay	43.39	Blend of ITE 11th & FL Studies	1.97	1.05	2.07	2.57	FL Studies	72%	Same as LUC 942 (Appendix C)	21.83	21.22	$6,864	$89	$1,640	**$5,224**	$4,657	12%
943	Automobile Parts and Service Center	1,000 sf	16.60	ITE 11th Edition	3.62	1.05	3.80	4.30	Same as LUC 942 (Appendix C)	72%	Same as LUC 942 (Appendix C)	15.33	14.90	$4,820	$57	$1,050	**$3,770**	$3,690	2%
944	Gas Station w/Convenience Store less than 2,000 sf	fuel pos.	172.01	ITE 11th Edition	1.90	1.05	2.00	2.50	FL Studies (LUC 944/945)	23%	FL Studies (LUC 944/945)	26.70	25.95	$8,394	$110	$2,027	**$6,367**	n/a	n/a
945	Gas Station w/Convenience Store 2,000 to 5,499 sf	fuel pos.	264.38	ITE 11th Edition (Adjusted)[5]	1.90	1.05	2.00	2.50	FL Studies (LUC 944/945)	23%	FL Studies (LUC 944/945)	41.04	39.89	$12,903	$169	$3,114	**$9,789**	n/a	n/a
	Gas Station w/Convenience Store 5,500+ sf	fuel pos.	345.75	ITE 11th Edition	1.90	1.05	2.00	2.50	FL Studies (LUC 944/945)	23%	FL Studies (LUC 944/945)	53.68	52.18	$16,878	$221	$4,072	**$12,806**	n/a	n/a
	INDUSTRIAL:																		
110	General Industrial	1,000 sf	4.87	ITE 11th Edition	5.15	1.25	6.44	6.94	Same as LUC 710	92%	Same as LUC 710	9.74	9.47	$3,063	$35	$645	**$2,418**	$2,040	19%
140	Manufacturing	1,000 sf	4.75	ITE 11th Edition	5.15	1.25	6.44	6.94	Same as LUC 710	92%	Same as LUC 710	9.50	9.23	$2,986	$34	$626	**$2,360**	$1,610	47%
150	Warehouse	1,000 sf	1.71	ITE 11th Edition	5.15	1.25	6.44	6.94	Same as LUC 710	92%	Same as LUC 710	3.42	3.32	$1,074	$12	$221	**$853**	$720	19%
151	Mini-Warehouse	1,000 sf	1.46	Blend of ITE 11th & FL Studies	3.51	1.25	4.39	4.89	Average of LUC 710 & Fig. C-1 (50k sq ft)	92%	Same as LUC 710	1.99	1.93	$624	$7	$129	**$495**	$620	-20%

1) Net VMT calculated as ((Trip Generation Rate* Trip Length* % New Trips)* (1-Interstate/Toll Facility Adjustment Factor)/2). This reflects the unit of vehicle-miles of capacity consumed per unit of development and is multiplied by the cost per vehicle
2) Net VMT (Item 1) multiplied by the city road adjustment factor (97.2%)
3) Source: Volusia County Growth and Resource Management Department
4) The ITE 11th Edition trip generation rate for PM Peak Hour of Adjacent Traffic was adjusted by the ratio of Daily to PM Peak Hour for LUC 912 to approximate a Daily TGR
5) Due to only slight variation, the trip generation rates for LUC 945 2,000to 3,999 sq ft and 4,000 to 5,499 sq ft were combined into a weighted average trip generation rate for a single land use tier of 2,000 to 5,499 sq ft

Appendix G
Administrative Fee

Appendix G: Administrative Fee

The Florida Impact Fee Act (section 163.31801(3)(c), Florida Statutes) allows local governments to collect an administrative fee related to impact fee administration at actual cost. To determine this cost, Volusia County's expenses related to administering the impact fee program in relation to impact fee revenues generated were reviewed. As shown in Table G-1, over the past four years, the County's administrative expense to impact fee revenue ratio ranged from 0.7 percent to 1.9 percent, with an average of 1.2 percent.

Table G-1

Volusia County Impact Fee Administration Expenses vs. Impact Fee Revenues

Year	Impact Fee Revenues[1]					Administrative Expenses[2]	Admin Exp as % of IF Rev[3]
	School	Fire	Parks	Roads	Total		
FY 2018	$5,952,124	$133,605	$257,693	$4,827,029	**$11,170,451**	**$208,306**	**1.9%**
FY 2019	$8,659,017	$169,943	$298,153	$8,896,853	**$18,023,966**	**$216,523**	**1.2%**
FY 2020	$12,781,428	$237,743	$438,420	$12,805,273	**$26,262,864**	**$236,641**	**0.9%**
FY 2021 (Preliminary Revenues)	$12,372,661	$249,188	$457,371	$19,465,372	**$32,544,592**	**$239,080**	**0.7%**
FY 2021 (Estimate Including Future Position)	*$12,372,661*	*$249,188*	*$457,371*	*$19,465,372*	***$32,544,592***	***$285,625***	***0.9%***
Administrative Expenses[4]							**1.2%**

1) Source: Volusia County
2) Source: Volusia County
3) Administrative Expenses (Item 2) divided by total impact fee revenues (Item 1)
4) Average of administrative expenses as percent of revenue (based on FY 2021 estimate with the future position)