

Impact Fee Program

Pike County, Georgia

CAPITAL IMPROVEMENTS ELEMENT

Including:
Library Services
Parks and Recreation
Animal Services
Fire Protection and EMS
Sheriff's Office and E-911
Road Improvements

July 6, 2026

ROSS+associates

urban planning & plan implementation

HatleyPlans, LLC

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Introduction

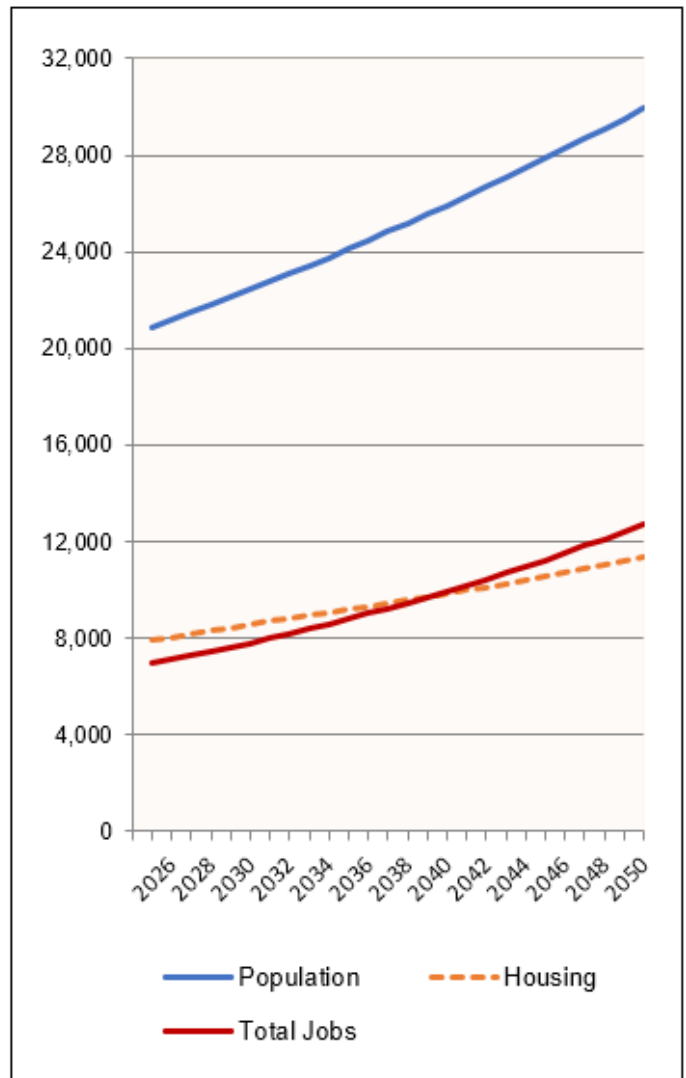
■ Forecasts

Notable future growth and development is forecast for Pike County over the coming 25 years as recovery from the Great Recession takes wing—a process that is already well underway.

Population projections reflect this extensive growth that is expected by 2050 in the county, interrelated with both housing and business growth. The ultimate population forecast for 2050 is 1 shy of 30,200 people—an additional 30.3% in the number of people in the county today. Housing for this future population growth will increase at a slightly higher rate, yielding a 2050 housing stock of 11,500 units of all types of housing.

Forecasts of Future County Growth

Year	Population	Housing Units	Total Jobs
2025	21,060	7,991	6,939
2026	21,365	8,106	7,114
2027	21,676	8,254	7,288
2028	21,990	8,374	7,463
2029	22,310	8,527	7,637
2030	22,634	8,651	7,812
2031	22,962	8,776	8,010
2032	23,296	8,905	8,208
2033	23,634	9,033	8,406
2034	23,977	9,165	8,604
2035	24,326	9,263	8,802
2036	24,679	9,397	9,027
2037	25,037	9,534	9,252
2038	25,401	9,673	9,477
2039	25,770	9,813	9,702
2040	26,144	9,956	9,927
2041	26,524	10,063	10,186
2042	26,909	10,209	10,444
2043	27,300	10,358	10,703
2044	27,696	10,508	10,961
2045	28,098	10,661	11,220
2046	28,506	10,816	11,516
2047	28,920	10,972	11,812
2048	29,340	11,131	12,109
2049	29,766	11,293	12,405
2050	30,199	11,500	12,701
Increase	9,139	3,509	5,762
Percent	30.3%	30.5%	45.4%



Employment in the county is forecast to increase more dramatically than residents, adding almost

5,800 to the number of jobs here today—a 45% increase in the number of jobs compared to a 30% increase in residents.

Population Outlook

The future increase in population is not unprecedented. Looking back, since 2000 the county's population grew from 13,571 to 20,758 in 2024, a bit more than a one-third increase (34.5%) over 2000. After a slight 'slump' in population growth for several years in the early 2010s brought on by the collapse of the housing market and the onset of the Great Recession in 2008, starting in 2013 and extending to 2016, the county's total population had resumed its steady growth, basically resuming the pre-recession rate. As the county further matures and development opportunities continue, the annual rate of population growth is expected to continue at an overall average for the 25-year period of about 1% per year. By 2050, slightly more than 30% of the county's population will represent a net increase over the number of people that are here now.

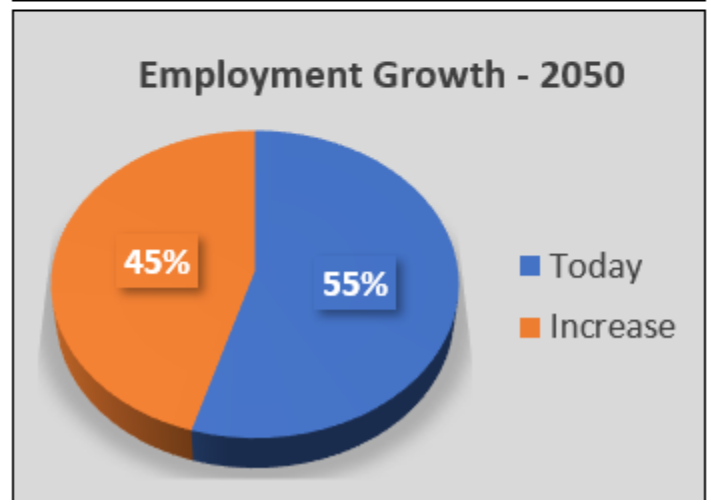
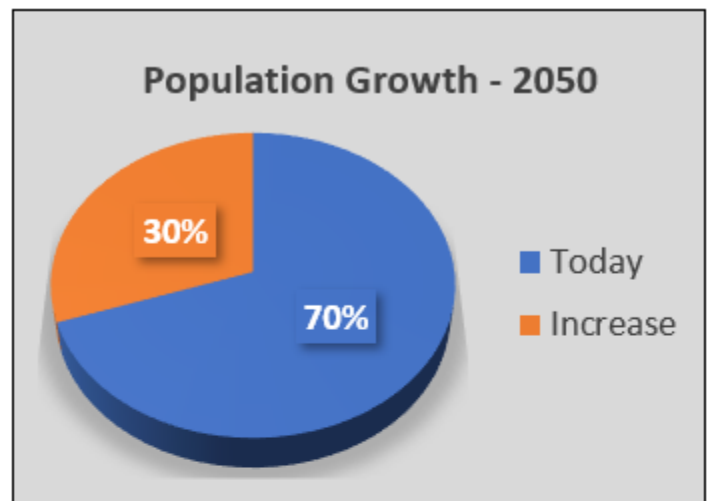
This population increase, and a slightly falling average family size, will create a total demand for just over 3,500 new housing units (net, not counting replaced units).

Increased Job Opportunities

Countywide, overall employment is projected to grow dramatically by 2050, adding almost 5,800 to the employment base of 6,939 today, a 45.4% increase. Of these, leaving out jobs that normally do not occupy buildings and government operations (that are exempt from impact fees), employment in businesses that would be eligible for impact fee assessments are expected to increase from 5,585 today to 11,191 in 2050, a 50% increase. The employment increase in these businesses will represent 88% of all employees (12,701) in the county in 2050.

Almost two-thirds (63.5%) of the increase in the impact-fee eligible jobs countywide are projected to be in four of the 16 employment categories: the most notable being retail trade businesses (1,376 new jobs, a 72% increase), followed by manufacturing (991 new jobs, a 68% increase), wholesale trade (635 new jobs, an 11% increase), and employees in construction (558 new jobs, a 10% increase). Adding in the increase in administrative jobs adds 467 new jobs, bringing the total to almost 72% of all new impact fee-eligible jobs in the county in 2050.

With all of this projected population and employment growth by 2050, Pike County will be called upon to increase the capacity of its facilities and infrastructure. This expansion will be necessary in order to maintain the attractive



quality of life and business environment enjoyed today by residents and businesses alike.

More information on anticipated growth, including detailed growth forecast methodologies, is presented in Appendix A.

■ Focus of This Report

This report focuses on the public facilities that will be needed to meet the demands of future growth and development while maintaining at least the same level of service afforded residents and businesses in the county today and new future residents and businesses alike. The key is that this capital improvement, whether it's land, buildings or long-lived vehicles, must create new capacity within the system to keep pace with the number of future residents and businesses as the county grows. Maintenance and personnel costs are not eligible for impact fee funding, nor would replacement of deteriorated floor space or a run-down vehicle because, although the replacement is maintaining the level of service, no new capacity is created to serve the needs of new growth.

■ Impact Fees Authorized

Impact fees are authorized in Georgia under Code Section 37-71, the *Georgia Development Impact Fee Act* (DIFA), and are administered by the Georgia Department of Community Affairs under Chapter 110-12-2, *Development Impact Fee Compliance Requirements*.

Under DIFA, the County can collect money as a one-time 'impact fee' from new development based on that development's proportionate share—its 'fair share'—of the cost to provide the facilities needed specifically to serve new development.

Fee calculations must recognize that revenue for such facilities also may be produced from new development in other ways: such as through future property taxes paid by the homes and businesses that growth creates. To the extent that new growth and development generates other revenue that is used to pay for non-impact fee eligible portions of impact fee projects, a credit against impact fees must be granted.

The provisions of DIFA are extensive in order to assure that new development pays no more than its fair share of the costs and that impact fees are not used to solve existing service deficiencies.

■ Categories for Assessment of Impact Fees

To assist in paying for the high costs of expanding public facilities and services to meet the needs of projected growth and to ensure that new development pays a reasonable share of the costs of public facilities, Pike County is considering updating its impact fees for several categories. The chapters in this Methodology Report provide population and employment forecasts and detailed information regarding the inventory of current facilities, the level of service, and detailed calculations of the impact cost for specific public facilities.

The following **Overview Table** shows the facility categories that are eligible for impact fee funding under Georgia law and that are considered in this report. The service area for each public facility category—that is, the geographical area served by the facility category—is also given, along with the basis for the standard adopted as the level of service to be delivered for each facility category.

Overview of Impact Fee Program - Facilities

Public Facility Category	Eligible Facilities	Service Area	Level of Service Standard Based on ...
Library Services	Library facilities including collection materials	Countywide	Square footage and number of collection materials per dwelling unit
Parks and Recreation	Park land and recreation components	Countywide	Acreage and number of recreation components per dwelling unit
Animal Services	Animal shelter facilities and vehicles	Countywide	Square footage of facilities and number of vehicles per dwelling unit
Fire Protection and EMS	Fire stations, fire trucks, ambulances and auxiliary vehicles	Countywide	Square footage of facilities and number of vehicles per day-night population
Sheriff's Office	Public safety facilities, long-lived vehicles and E-911 equipment	Countywide	Square footage of facilities, vehicles and 911 equipment per day-night population
Emergency Management	Communications equipment and transmission facilities	Countywide	Communications equipment and transmission facilities
Road Improvements	Road projects creating increased capacity	Countywide	Level of Service 'D' and trip generation

NOTE: All facilities, including vehicles and equipment, must have a useful life of 10 years or more.

Terms used in the **Overview Table**:

Eligible Facilities under the State Act are limited to capital items having a life expectancy of at least ten years, such as land, buildings and certain vehicles. Impact fees cannot be used for the maintenance, supplies, personnel salaries, or other operational costs, or for short-term capital items such as computers, furniture or most automobiles. None of these costs are included in the impact fee system.

Service Areas are the geographic areas that the facilities serve, and the areas within which the impact fee can be collected. Impact fees collected in a service area for a particular category may only be spent for that purpose, and only for projects that serve that service area.

Level of Service Standards are critical to determining new development's fair share of the costs. The same standards must be applied to existing development as well as new to ensure that each is paying only for the facilities that serve it. New development cannot be required to pay for facilities at a higher standard than that available to existing residents and businesses, nor to subsidize existing facility deficiencies.

■ Exemption Policy

Certain office, retail trade, and industrial development projects may provide extraordinary benefit in support of the economic advancement of the county's citizens over and above the access to jobs, goods, and services that such uses offer in general. To encourage such development projects, the Board of Commissioners may grant a reduction in the impact fee for such a development project upon the determination and relative to the extent that the business or project represents extraordinary economic development and employment growth of public benefit to Savannah.

In addition, the Board of Commissioners recognizes that impact fees, in some circumstances, may negatively affect the affordability of housing, particularly "workforce" housing.

If it wishes to encourage development projects of public benefit to Pike County, the Board of Commissioners shall first adopt exemption criteria to guide the granting of a reduction in the impact fee for:

A business development project that represents extraordinary economic development and employment growth, and/or

A residence or housing project that will increase the supply of housing that would be affordable to disadvantaged individuals or families.

In the absence of adopted applicable exemption criteria for either extraordinary economic development and employment growth or for affordable housing, no applicable exemption shall be approved.

It is recognized by the Board of Commissioners that the Georgia Development Impact Fee Act (under O.C.G.A. 36-74-4(h)(3)) requires that any amount of money granted as an exemption must be reimbursed by the county into the county's impact fee accounts from revenue sources other than impact fees.

■ Consistency with the Comprehensive Plan

The adopted *Pike County and Cities Joint Comprehensive Plan* covers the time period from 2022 to 2042 and includes Community Work Programs for the County and each of its cities covering 2022 through 2027. Although this *Capital Improvements Element* extends to 2050, the anticipated infrastructure, vehicles and other improvements needed to maintain the level of service currently enjoyed by the county's residents and businesses are clearly consistent with the goals, objectives and improvements embodied in the Comprehensive Plan. While this CIE extends beyond the Comprehensive Plan in duration, notable changes in the goals and objectives of a future Comprehensive Plan are not anticipated to arise.

■ Editorial Conventions

This report observes the following conventions:

The capitalized word 'County' applies to the government of Pike County, the Board of Commissioners or any of its departments or officials, as appropriate to the context. An example is "the County has adopted an impact fee ordinance".

The lower-case word 'county' refers to the geographical area of Pike County, as in "the population of the county has grown".

Single quote marks (' and ') are used to highlight a word or phrase that has a particular meaning or refers to a heading in a table.

Double quote marks (" and ") are used to set off a word or phrase that is a direct quote taken from another source, such as a passage or requirement copied directly from a law or study.

Importantly:

Numbers shown on tables are often rounded from the actual calculation of the figures for clarity, but the actual calculated number of decimal points is retained within the table for accuracy and further calculations.
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Library Services

■ Introduction

The Pike County Library System is a single county library system headquartered in Zebulon. The city of Zebulon is the county seat of Pike County and is centrally located in the county.

■ Service Area

The Pike County Library System provides a full range of library services to the residents of the entire county.

■ Library Facilities

The floor area and number of collection materials are shown on Table 1 respectively, below.

Currently, the library system does not meet the State minimum standard for floor area to qualify for State assistance. This 'shortfall' is added to the current floor area in order to determine the total floor area that would be required. The provision of the additional floor area would not be qualified for impact fee funding since its addition is needed to fully serve the existing population. However, the addition of library space beyond that needed to meet standards would be fully eligible for impact fee funding.

Table 1: Inventory of Library Facilities

Facility	Location	Gross Floor Area in Square Feet	Collection Materials
J. Joel Edwards Public Library	7077 Hwy 195, Zebulon, GA	9,840	
	Current Shortfall*	3,250	
	Total to meet State Standards	13,090	
Collection Materials			31,401
	TOTAL	9,840	31,401

*Additional floor area needed to meet Georgia Public Library System standards to qualify for State funding.

■ Level of Service

Demand for library facilities is almost exclusively related to the county's resident population. Businesses make some use of public libraries for research purposes, but the use is incidental compared to that of the families and individuals who live in the county. Thus, a library services impact fee is focused on future residential growth.

The current Level of Service (LOS), which includes the assumption that the current shortfall will be funded separately from impact fee revenue, is calculated by dividing the floor area in those library facilities and the number of collection materials by the number of housing units in the county today. This yields an LOS per housing unit currently being provided to the county's residents, which adequately meets current needs.

Table 2: Current Level of Service Calculation - Libraries

Facility	Current Service Population	Level of Service
Square Feet meeting State Standards	Number of Housing Units (2025)	Square Feet of Floor Area per Housing Unit
13,090	8,076	1.6209
Existing Collection Materials	Number of Housing Units (2025)	Collection Materials per Housing Unit
31,401	8,076	3.8882

■ Future Demand for Library Services

The current level of service available to the county's residents today (from Table 2) is applied to the future number of housing units projected to be added to the county by 2050.

As shown on Table 3, this results in a future need for 5,681 additional square feet of floor area (whether as an addition to the existing library or the creation of a new branch library) and the net expansion of the collection by 13,628 materials. This 'net' collection expansion would consist of both the acquisition of new collection materials plus new materials to replace the number of old materials discarded each year.

Table 3: Future Demand Calculation - Libraries

Level of Service	Service Area Growth	New Growth Demand
Square Feet of Floor Area per Housing Unit	Number of New Housing Units (2025-50)	Square Feet of New Floor Area Impact Fee Eligible
1.6209	3,505	5,681
Collection Materials per Housing Unit	Number of New Housing Units (2025-50)	New Collection Materials Supported
3.8882	3,505	13,628

■ Impact Cost Calculations

The following table estimates when a new library facility (or expansion) would be needed to maintain the level of service available to both the existing county population and the future residents of the county, timed to future growth.

As shown on Table 4, the accumulated total number of new housing units anticipated in each year is shown. Using the level of service calculated on Table 3 – the square feet of floor area per housing unit – the ‘total’ floor area that would be impact fee eligible and needed to meet the future demand in each year is shown under the ‘running total’ column. Annual ‘expansions’, of course, would not be economically or physically realistic, so a year in which a single expansion of the floor area would be feasible and adequately anticipate all of the future demand was selected for the impact fee calculations: 2038.¹

Bear in mind, however, that the ‘impact fee eligible’ square footage is in addition to the floor area needed to meet current State standards. Thus, the State ‘shortfall’ of 3,250 square feet plus the impact fee eligible square footage (5,681) together comprise a total floor area of 8,931 square feet that should be considered (of which the 5,681 square feet for new growth—63.6099%—would be impact fee eligible).

¹ Alternate approaches could be considered, such as expansions of the current library along with construction of a small new branch. The physical location of future residential growth and commercial centers will contribute to library service strategies in the future.

Table 4: Future Library Facility Projects

Year	Total New Housing Units	Net Increase Each Year	Running Total: SF Demanded	Project	Square Footage
2025	7,982				
2026	8,128	146	239		
2027	8,275	147	481		
2028	8,426	151	728		
2029	8,548	122	928		
2030	8,704	156	1,184		
2031	8,831	127	1,392		
2032	8,958	127	1,601		
2033	9,087	129	1,812		
2034	9,219	132	2,029		
2035	9,352	133	2,247		
2036	9,488	136	2,470		
2037	9,625	137	2,694		
2038	9,765	140	2,924	Future Expansion	5,866
2039	9,906	141	3,155		
2040	10,012	106	3,329		
2041	10,156	144	3,565		
2042	10,303	147	3,806		
2043	10,453	150	4,052		
2044	10,604	151	4,300		
2045	10,758	154	4,552		
2046	10,873	115	4,741		
2047	11,032	159	5,002		
2048	11,191	159	5,263		
2049	11,395	204	5,597		
2050	11,559	164	5,866		
Total	3,577				5,866

Table 5 on the next page shows the number of collection materials demanded by new growth each year.

The total (cumulative) new housing units are shown for each year. The net increase in housing units each year over the previous year is multiplied times the current level of service (from Table 2) to determine the net increase in collection materials that would be needed each year. These annual totals are accumulated each year to show the total increase in the entire collection as a 'running total' of new collection materials each year. Note that these totals do not include replacement materials for discarded items because those would not be impact fee eligible since no increase in the total materials would occur.

Table 5: Future Collection Materials Needed

Year	New Growth Demand			
	Total New Housing Units	Net Increase Each Year	New Materials Needed Each Year	Running Total
2025	8,076			
2026	8,223	147	572	572
2027	8,343	267	467	1,038
2028	8,495	419	591	1,629
2029	8,618	542	478	2,107
2030	8,776	700	614	2,722
2031	8,904	828	498	3,219
2032	9,033	957	502	3,721
2033	9,164	1,088	509	4,230
2034	9,298	1,222	521	4,751
2035	9,397	1,321	385	5,136
2036	9,533	1,457	529	5,665
2037	9,672	1,596	540	6,206
2038	9,813	1,737	548	6,754
2039	9,918	1,842	408	7,162
2040	10,062	1,986	560	7,722
2041	10,209	2,133	572	8,294
2042	10,358	2,282	579	8,873
2043	10,469	2,393	432	9,304
2044	10,621	2,545	591	9,895
2045	10,775	2,699	599	10,494
2046	10,932	2,856	610	11,105
2047	11,090	3,014	614	11,719
2048	11,252	3,176	630	12,349
2049	11,415	3,339	634	12,983
2050	11,581	3,505	645	13,628
Total	3,505		13,628	

The next table (Table 6) provides an estimate of the cost of providing the impact fee-eligible new library floor area. Since specific plans and timing have not yet been established, an expansion date of 2038 is chosen as being about halfway between the present and 2050.

Table 6: Facility Costs to Meet Future Demand

Year	Project	Total Floor Area	Total Cost Today*	% for New Growth*	New Growth Share (PV)**
2038	Future Expansion	5,681	\$ 3,044,229	100%	\$ 5,032,492
Total		5,681	\$ 3,044,229		\$ 5,032,492

* Based on similar projects in Palmetto, Georgia and Crozet, Virginia, reported by Engineering News Record, *Green Building Square Foot 2020 Cost Book*, brought to 2025 NPV.

** Present Value = 2024 cost estimate inflated to 2038 target year using the Building Cost Index (BCI), reduced using the Discount Rate.

The calculation of the future cost to expand the collection materials in order to maintain the current level of service for all residents, both existing today and those coming in the future, is shown on Table 7 on the following page.

Using the data shown on Table 5, Table 7 calculates the average cost for all of the collection materials needed each year to maintain the current level of service. This average cost, of course, considers all types of collection materials, including adult and children's fiction books, nonfiction books and reference materials, CDs and DVDs.

The new materials needed each year is taken from Table 5, which is multiplied by the average cost of all collection materials to estimate the expenditure needed each year in today's dollars. Since the expenditures are entirely impact fee eligible because they are based on future growth in the number of housing units, the same figures are shown in the 'new growth share' column.

Since the original figures are in current (2024) dollars, the amounts each year are converted to Present Value using the Consumer Price Index and the discount rate based on the anticipated year of each expenditure.²



² See Appendix C for an in-depth discussion regarding Present Value calculations.

Table 7: Collection Material Costs to Meet Future Demand

Year	New Materials Needed (annual)	Annual Cost (2024 Dollars)	% for New Growth	New Growth Share (2024 \$)	Present Value
2025	0				
2026	572	\$ 14,556.92	100%	\$ 14,556.92	\$ 15,687.31
2027	467	\$ 11,883.20	100%	\$ 11,883.20	\$ 13,293.89
2028	591	\$ 15,052.05	100%	\$ 15,052.05	\$ 17,480.50
2029	478	\$ 12,180.28	100%	\$ 12,180.28	\$ 14,684.36
2030	614	\$ 15,646.21	100%	\$ 15,646.21	\$ 19,581.51
2031	498	\$ 12,675.41	100%	\$ 12,675.41	\$ 16,467.92
2032	502	\$ 12,774.44	100%	\$ 12,774.44	\$ 17,228.92
2033	509	\$ 12,972.49	100%	\$ 12,972.49	\$ 18,162.64
2034	521	\$ 13,269.57	100%	\$ 13,269.57	\$ 19,286.44
2035	385	\$ 9,803.64	100%	\$ 9,803.64	\$ 14,791.84
2036	529	\$ 13,467.62	100%	\$ 13,467.62	\$ 21,094.30
2037	540	\$ 13,764.70	100%	\$ 13,764.70	\$ 22,381.05
2038	548	\$ 13,962.76	100%	\$ 13,962.76	\$ 23,568.10
2039	408	\$ 10,397.80	100%	\$ 10,397.80	\$ 18,219.41
2040	560	\$ 14,259.84	100%	\$ 14,259.84	\$ 25,938.63
2041	572	\$ 14,556.92	100%	\$ 14,556.92	\$ 27,487.89
2042	579	\$ 14,754.97	100%	\$ 14,754.97	\$ 28,923.42
2043	432	\$ 10,991.96	100%	\$ 10,991.96	\$ 22,367.94
2044	591	\$ 15,052.05	100%	\$ 15,052.05	\$ 31,796.99
2045	599	\$ 15,250.10	100%	\$ 15,250.10	\$ 33,442.80
2046	610	\$ 15,547.18	100%	\$ 15,547.18	\$ 35,393.30
2047	614	\$ 15,646.21	100%	\$ 15,646.21	\$ 36,975.85
2048	630	\$ 16,042.32	100%	\$ 16,042.32	\$ 39,356.43
2049	634	\$ 16,141.34	100%	\$ 16,141.34	\$ 41,108.12
2050	645	\$ 16,438.42	100%	\$ 16,438.42	\$ 43,459.79
Total	13,628	\$ 347,088.42		\$ 347,088.40	\$ 618,179.34

Average replacement cost = \$ 25.47

Parks and Recreation Facilities

■ Introduction

Public recreational opportunities are provided by Pike County through the County's Parks and Recreation Department and its many recreation components.

■ Service Area

All parks and recreation components are operated on a countywide basis. Facilities are provided equally to all residents of the unincorporated area and the county's cities.

Parks and recreational facilities are made available to the county's population living throughout the county. The County's parks and facilities are often used based on the programs or facilities available, as opposed to proximity of the facility to particular geographic locations. For instance, residents and families may be attracted to a variety of locations based on the facilities available without regard to the locations of the residents themselves. Some programs and recreation facilities are located only at certain facilities, to which any city resident can come. As a general rule, parks facilities are located to be easily accessible to its residents throughout the county, and future facilities will continue to be located around the county so that recreational opportunities will continue to be available on an equal basis to all residents of the county.

For these reasons, the entire county is considered a single service area for parks and recreational facilities.

■ Parks & Recreation Facilities

The following Table 8 provides an inventory of all buildings that are owned and operated by the County. The key factor is what the buildings would cost today (2025) reflecting the cost actually expended in the original year of construction brought forward to what it would cost in 2025 present value. (For some of the buildings, the Present Value was already available.)



Table 8: Current Inventory: Buildings and Pavilions

	Floor Area (sq. ft.)	Date Built	Original Cost	2025 PV
Maintenance Barn	1,500	1991	\$ 26,011.13	\$ 96,852.92
Maintenance Barn 2	1,500	2000	\$ 34,556.25	\$ 90,854.27
Baseball Concession Stand	1,152	1986	\$ 80,403.84	\$ 363,240.32
Baseball Restrooms	1,080	1986	\$ 21,669.12	\$ 97,894.55
Softball Concession Stand/Restroom	200	1993	\$ 13,959.00	\$ 48,108.55
Softball Restrooms	450	1993	\$ 9,028.80	\$ 31,117.02
Softball Shed	672	1993	\$ 22,901.76	\$ 78,929.05
Football Restrooms	625	1986	\$ 12,540.00	\$ 56,651.94
Football Concession Stand	625	2001	\$ 43,621.88	\$ 110,339.34
Community Center	6,000	2023	\$ 1,000,000.00	\$ 1,080,402.30
Soccer Restrooms	576	2006	\$ 11,556.86	\$ 24,093.62
Soccer Concession Stand	576	2006	\$ 40,201.92	\$ 83,812.55
Baseball Pavilion 1	2,800			\$ 28,000.00
Baseball Pavilion 2	750			\$ 1,300.00
Softball Pavilion	750			\$ 1,300.00
Total Buildings and Pavilions			\$ 2,192,896.44	

Note: Blank date and original cost cells indicate that the Present Value is already available.

Altogether, the County has expended the equivalent of almost \$2.2 million over the past 39 years.

The same approach is used to calculate the total investment made by the County in its existing recreation facilities. Table 9 shows the equivalent value of the investment in the facilities today. For those facilities that the County had not already calculated the current 2025 value, the original date of the expenditures and the amounts were also brought up to the current year using Present Value calculations.



Table 9: Current Inventory: Recreation Facilities

	Number	Date Built	Original Cost	2025 PV
Playsets	2			\$ 88,636.00
Picnic Tables	14			\$ 14,000.00
Ice Machine	5			\$ 16,000.00
Benches	43			\$ 19,608.00
Fencing	Whole Park			\$ 275,606.00
Scoreboards	11			\$ 99,000.00
Bleachers	27			\$ 62,100.00
Batting Cage (2)	3763 sf			\$ 35,000.00
L-Screens	12			\$ 6,960.00
Turf Mounds	3	2023	\$ 10,500.00	\$ 11,272.82
Lighting	12 Fields			\$ 1,100,000.00
Safety Netting	10 Fields	2023	\$ 90,574.00	\$ 97,240.42
Backstop Pad	8 Fields	2023	\$ 13,894.00	\$ 14,916.62
Hitting/Pitching Mats	14	2023	\$ 5,846.00	\$ 6,276.28
Field Goal Post	2			\$ 4,000.00
Soccer Goals	30			\$ 45,655.00
Landscaping		2023	\$ 24,792.00	\$ 26,616.74
Landscaping - 24 Trees & Sod		2024	\$ 19,120.00	\$ 19,811.14
Soccer Courts Parking		2022	\$ 31,658.00	\$ 35,216.68
Soccer Complex		2022	\$ 169,922.00	\$ 189,022.93
Total Recreation Facilities				\$ 2,166,938.63

Note: Blank date and original cost cells indicate that the Present Value is already available.

By the same token, the current value of past expenditures for certain vehicles and rolling stock are shown on Table 10. As can be seen from the dates, these items have useful life spans exceeding or expected to exceed (based on past experience), 10 years of useful lives.



Table 10: Current Inventory: Vehicles & Rolling Stock

	Number	Date Acquired	Original Cost	2025 PV
Turf Tank	1	2024	\$ 8,200.00	\$ 8,512.43
F-150	1	2009	\$ 8,000.00	\$ 14,551.99
John Deere Gator	1	2016	\$ 9,995.00	\$ 13,993.89
John Deere Gator	1	2018	\$ 10,500.00	\$ 13,641.62
John Deere Field Rake	1	2007	\$ 3,500.00	\$ 6,860.87
Grasshopper Lawn Mower	1	2010	\$ 2,995.00	\$ 5,247.95
Grasshopper Lawn Mower	1	2015	\$ 8,499.00	\$ 12,352.73
Grasshopper Lawn Mower	1	2019	\$ 8,735.00	\$ 10,932.01
Kubota Lawn Mower	1	2019	\$ 14,900.00	\$ 18,647.62
Total Vehicles & Rolling Stock				\$ 104,741.11

Altogether, the buildings, facilities, vehicles and rolling stock listed on the preceding three tables adequately serve the county's current residents, and provide a basis for determining additional recreational improvements that will be needed to serve future residents at the same levels of service.

The following table summarizes the county's investment in its parks and facilities. The Present Value for park land was calculated based on the Tax Assessors records of county-owned properties, while the PV for the recreation facilities reflects the Construction Cost Index, the cost of the buildings is based on the Building Cost Index, and the Consumer Price Index is applied to the vehicles and rolling stock.³

Table 11: Summary Investment in Parks & Recreation Facilities

	2025 PV
Current Holdings: Park Land (95.52 acres)	\$ 513,830.00
Current Inventory: Buildings and Pavilions	\$ 2,192,896.44
Current Inventory: Recreation Facilities	\$ 2,166,938.63
Current Inventory: Vehicles & Rolling Stock	\$ 104,741.11
Total Investment	\$ 4,464,576.18

³ See Appendix C for how the average rate for each of the indexes was calculated.

■ Future Investment – Parks and Recreation

The investment needed to fund future Parks & Recreation facilities, based on the calculations carried out in this chapter, is shown on Table 12. As noted, Parks and Recreation impact fees are collected only from residential development and are assessed as housing units are issued building permits.

The '2025 Present Value' for each category (land, buildings, facilities and vehicles) is transferred to Table 12, below, from Table 11, above. Those numbers are each divided by the total existing housing units (8076) to determine the 'per housing unit' amount of investment existing today. The 'per 2025 housing unit' amounts are multiplied times the number of new housing units that are expected in the coming years (3,505) to determine the amount of investment that will be required to serve future growth and development at the same level of service enjoyed by the city's residents today. These amounts are in 2025 dollars.

Table 12: Calculation of Future Investment Needed

	2025 Present Value	Total 2025 Housing Units	Per 2025 Housing Unit	2025 Cost to Support New Growth*	2037 Present Value**
Park Land	\$ 513,830.00	8,076	\$ 63.62	\$ 223,003.24	\$ 349,289.41
Buildings and Pavilions	\$ 2,192,896.44	8,076	\$ 271.53	\$ 951,721.40	\$ 1,513,640.84
Recreation Facilities	\$ 2,166,938.63	8,076	\$ 268.32	\$ 940,455.66	\$ 1,310,239.87
Vehicles and Rolling Stock	\$ 104,741.11	8,076	\$ 12.97	\$ 45,457.85	\$ 70,400.51
Total Investment Needed				\$ 2,160,638.15	\$ 3,243,570.63

* Investment per each 2025 housing unit times the projected increase in housing units from 2025 to 2050 (3,505) in current 2025 dollars.

** PV based on the CPI for land holdings, the BCI for building construction, the CCI for new recreation facilities, and the CPI for vehicles and rolling stock. Fund balances in 2037 would be \$0.

All of the recreation components needed to serve future growth, of course, will not occur in the current year. However, an 'average' year of 2037 is used for Present Value calculations—some improvements will occur earlier for less money, and some later at greater cost. All will average out.

To calculate the future 2037 Present Value (PV) of the impact fee eligible cost estimates for the parks and recreation facilities, the PV is calculated by increasing the current (2025) estimated costs as follows:

- By using the CPI for acquisition of additional park lands,

- the Engineering News Record's 10-year average building cost inflation (BCI) rate for recreation buildings and pavilions,
- the Engineering News Record's 10-year average construction cost index (CCI) rate for all recreation facilities, and
- the CPI for all vehicles.

All project costs are then reduced to current PV dollars using the Discount Rate.



■ Future Parks and Recreation Facilities

Pike County commissioned an exhaustive study of the present and future needs of its population for new facilities needed to serve both its existing residents and future families and individuals expected to make the county their home.

The study included extensive public input regarding the types of facilities desired by its residents coupled with the establishment of levels of service appropriate for the existing and future residents of the county.

The following Table 12A summarizes the results of that study, published in the resulting *Recreation Master Plan*, and extended to the projected population in the year 2050.

Table 12A: Planned Future Projects

Park & Recreation Facility	Level of Service (1 per Population Shown)*	Calculated Demand for New Facilities	Number of New Facilities
Playgrounds	6,333	4.74230223	5
Totlots	9,500	3.16136842	3
Outdoor Basketball Courts	9,500	3.16136842	3
Tee Ball Diamond Field	19,000	1.58068421	2
Baseball Field - youth	3,800	7.90342105	8
Softball Field - youth	6,333	4.74230223	5
Softball Field - adult	9,500	3.16136842	3
Soccer Field - adult	9,500	3.16136842	3
Soccer Field - youth	6,333	4.74230223	5
Football Field	19,000	1.58068421	2
Multi-purpose Field	9,500	3.16136842	3
Dog Park	19,000	1.58068421	2
Pickleball Court	19,000	1.58068421	2
Disc Golf	19,000	1.58068421	2
Picnic Shelter	3,800	7.90342105	8
Community Pavilion	9,500	3.16136842	3
Recreation Center	19,000	1.58068421	2
Gym with Basketball Court	19,000	1.58068421	2
Community Center	19,000	1.58068421	2
Senior Center	19,000	1.58068421	2
Fitness Center	19,000	1.58068421	2
Indoor Track	19,000	1.58068421	2
Teen Center	19,000	1.58068421	2

* Source: Based on level of service standards contained in the *Pike County Recreation Master Plan, 2019*. Total demand extended to 2050 population, with the number of new facilities rounded to nearest whole number.

The new facilities will be implemented over the coming years to 2050 as recreation impact fees are collected, with an eye to public demand and interest. Table 12B on the following page provides an anticipated schedule for implementation of the new recreation projects.

Table 12B: Implementation Plan--Recreation Facilities

Park & Recreation Facility	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Playgrounds																									
Totlots	1			1		1				1		1			1					1					
Outdoor Basketball Courts					1																	1			
Tee Ball Diamond Field								1																	
Baseball Field - youth		1		1	1			1			1				1										
Softball Field - youth	1					1						1					1								
Softball Field - adult				1					1																
Soccer Field - adult			1																						
Soccer Field - youth	1					1							1											1	
Football Field																1									
Multi-purpose Field				1		1				1															
Dog Park		1											1												
Pickleball Court	1										1														
Disc Golf					1										1										
Picnic Shelter	1			1			1			1			1												1
Community Pavilion						1						1							1						
Recreation Center							1								1										
Gym with Basketball Court								1									1								
Community Center					1														1						
Senior Center							1													1					
Fitness Center						1																			
Indoor Track									1																
Teen Center				1																			1		

Animal Services

■ Introduction

In Pike County the Animal Services facilities support the County's animal control program and thus provide services throughout the county. Demand for animal control services is almost exclusively related to the county's resident population. Thus, an impact fee for animal service facilities is based on future residential growth.

■ Service Area

The entire county is considered a single service area for the provision of animal services because all residents in the county and its cities have equal access to the benefits that the service provides.

■ Existing Facilities and Vehicles

Today's facility consists of the Animal Control Building, containing 2,374 square feet, an inside run (1,420 square feet) and an outside run (954 square feet).

Table 13: Current Inventory: Animal Control Facilities

Facility & Vehicles		Quantity
Facility		Square Feet
Animal Control Building		2,374
Inside Runs		1,420
Outside Runs		954
Totals -- Facility		4,748
Vehicles (with Transport Boxes)		Number
F150 4x4		1
F150 4x4 with extended cab		1
Total Vehicles		2

In addition, Animal Services operates two vehicles, each equipped with a transport box for the collection and transportation of animals.

Over the years, the County has invested in its Animal Control program. Today's animal control facility consists of a building constructed in 2013 and a subsequent expansion in 2021. In terms of today's costs (i.e., "present value"), the County has spent the equivalent of more than \$356 thousand dollars on building the facilities. In addition, the Service's two vehicles together have a current value of well over \$80 thousand dollars based on their original purchase dates brought up to 2025 current dollars. These calculations are shown on Table 14, below.

Table 14: Current Investment: Animal Control Facilities

Year	Facility	Original Cost	Present Value*
Buildings			
2013	Animal Control Building	\$ 5,001	\$ 7,864
2021	Animal Control Shelter Expansion	\$ 300,000	\$ 348,864
	Totals -- Buildings	\$ 305,001	\$ 356,729
Vehicles (with Transport Boxes)			
2004	F150 4x4	\$ 15,808	\$ 33,987
2024	F150 4x4 with extended cab	\$ 45,123	\$ 46,798
	Totals -- Vehicles	\$ 60,931	\$ 80,786
Current Value of Investment in Facilities =		\$	437,514

* Calculated using the Building Cost Index for buildings and the Consumer Price Index for vehicles. See Appendix C.

Since the Animal Services operation adequately serves the county's current residents, its current facilities provide the basis for determining the extent to which its facilities will need to be expanded to serve new growth in the future without eroding the quality of services to the people that live in the county today.

The current level of service is calculated on the basis of the existing facility and vehicles and the current number of housing units countywide. For instance, as shown on Table 15, there is slightly less than 0.3 of a square foot of facilities for each housing unit in the county today.

Table 15: Current Level of Service Calculations

Based on Current Facilities		
Facility	Current Housing Units	Current Level of Service
Building Square Feet	Number of Housing Units (2025)	Square Feet of Floor Area per Housing Unit
2,374	8,076	0.293957
Animal Services Vehicles	Number of Housing Units (2025)	Vehicles per Housing Unit
2	8,076	0.000248

■ Demand for Services

In order to calculate the extent to which animal control facilities will need to be expanded in the future to meet the needs of the county's future growth and development while maintaining the current level of service for today's residents, the current levels of service for facilities and vehicles are multiplied by the additional housing units that are expected to be built over the coming 25 years. For instance, the 'square feet of building area per housing unit' from Table 15 is multiplied times the additional number of housing units expected in the future to determine how many more square feet of building area will need to be added to the current facility to serve the demands of future residents without reducing service to the county's population today.

This is accomplished by multiplying the current level of service for Animal Control's building and fleet times future growth and development. Table 16 shows these calculations.

Table 16: Future Demand for Animal Control Facilities and Vehicles

Current Level of Service	Service Area Growth	New Growth Demand
Square Feet of Floor Area per Housing Unit	Increase in Housing Units (2025-50)	Square Feet of New Floor Area Needed
0.293957	3,505	1,030
Vehicles per Housing Unit	Increase in Housing Units (2025-50)	Net New Vehicles Demanded
0.000248	3,505	0.8680

■ Costs to Serve Future Development

The additional floor area and additional vehicle purchase will be accomplished at some propitious time in the future. The timing of those actions, however, has not yet been established.

As a result, the calculation of the costs for these items in the future has been established to occur in 2037 (halfway between today and 2050). This allows for the anticipated effect of inflation to be taken into account in the years ahead. Most likely, the building expansion and the additional vehicle will be accomplished in 2037.

Table 17: Impact Fee Eligible Costs

	Number Needed	Cost (PV 2037)		Impact Fee Eligible		Ineligible
		Each*	Total	Percent**	Cost	Amount
New Floor Area	1,030	\$ 616.91	\$ 635,417.30	100.00%	\$ 635,417.30	\$ -
New Vehicles	1.0000	\$ 78,991.77	\$ 78,991.77	86.80%	\$ 68,564.86	\$ 10,426.91
Total Costs			\$ 714,409.07		\$ 703,982.16	\$ 10,426.91

* Present Value (PV) for new floor area is based on a similar project reported by BNI Engineering News Record for a fully equipped facility. PV based on 10-year average annual BCI projected to 2037 plus 25% for design services and PV for the new vehicle is based on the most recent (2024) purchased vehicle. PV based on the 10-year average annual CPI projected to 2037

** 0.9311 vehicle "eligible" divided by 1 full vehicle that would have to be acquired produces the percent eligible of the total.

Fire Protection

■ Introduction

Fire protection Services are provided by the County through its Fire Department.

■ Service Area

The entire county is considered a single service area for the provision of fire protection. All residents and employees in the county have equal access to the benefits of the services provided. While the County has a mutual aid agreement with the City of Meansville, the city maintains its own fire department and has 'first responder' status in Meansville.

Fire protection services operate as a coordinated system, with each fire station backing up the other stations in the system. The backing up of another station is not a rare event; it is the essence of good fire protection planning. All stations do not serve the same types of land uses, nor do they all have the same apparatus. It is the strategic placement of personnel and equipment that is the backbone of good fire protection. Any new county station would relieve some of the demand on the other stations. Since the stations would continue to operate as 'backups' to the other stations, everyone in the county service area would benefit from the construction of a new station since it would reduce the 'backup' times that the station nearest to them would be less available.

■ Inventory of Current Facilities and Vehicles

The Department's current inventories of facilities and vehicles are shown on the following tables.

Table 18 provides an inventory of the Department's fire stations, while Table 19 lists the Department's on-line firefighting and support vehicles. Given the most recent increases in vehicle costs, only the most recent 6 vehicles are used to calculate an 'average' per-vehicle cost.

Together, these facilities and vehicles form the basis for projecting the need for additional facilities and vehicles to serve future growth and development at the same level of service currently enjoyed by the county's residents and businesses.

Table 18: Current Fire Department Stations

Station	Floor Area	Bays
Station 1 Concord	5,175	3
Station 2 Hollonville	4,800	3
Station 3 Linsey	4,800	3
Station 5 Molena	5,160	3
Station 6 Williamson	4,800	3
Station 7 Zebulon	4,704	4
Station 8 Gresham	2,400	2
Totals	31,839	21

Table 19: Current Fire Department Vehicles

Year	Vehicle	Cost	2025 NPV
Fire Apparatus			
1991	Ford Pumper	\$ 30,000.00	\$ 106,970.73
1999	International Tanker	\$ 108,860.00	\$ 287,803.37
1997	Freightliner Pumper	\$ 80,000.00	\$ 227,927.42
1999	International Tanker	\$ 108,000.00	\$ 285,529.70
1999	International Tanker	\$ 108,000.00	\$ 285,529.70
2001	Freightliner Pumper	\$ 174,000.00	\$ 426,872.08
2001	Freightliner Pumper	\$ 174,000.00	\$ 426,872.08
2002	International Pumper	\$ 105,000.00	\$ 248,140.86
2007	Freightliner Pumper Tanker	\$ 80,000.00	\$ 156,819.97
2007	Freightliner Pumper Tanker	\$ 80,000.00	\$ 156,819.97
2008	ALF Pumper	\$ 257,784.00	\$ 486,774.49
2008	ALF Pumper	\$ 257,784.00	\$ 486,774.49
2008	ALF Pumper	\$ 257,784.00	\$ 486,774.49
2008	ALF Pumper	\$ 257,784.00	\$ 486,774.49
2008	Pierce Arrow Pumper	\$ 550,000.00	\$ 1,038,567.05
2009	HME Aerial	\$ 500,000.00	\$ 909,499.23
Total Investment		\$ 3,128,996.00	\$ 6,504,450.12
Average			\$ 406,528.13
Average (2008-2009 Vehicles)			\$ 649,194.04
Support Vehicles			
1986	Chevrolet Kodiak Rescue LT	\$ 35,000.00	\$ 150,455.94
1987	Ford Blue Bird Bus	\$ 5,000.00	\$ 20,704.84
1994	GMC Rescue Heavy	\$ 30,000.00	\$ 95,619.48
2000	Ford Rescue LT	\$ 8,000.00	\$ 20,374.08
2004	Trans Haul Trailer	\$ 7,500.00	\$ 16,447.17
2004	Dodge Dakota	\$ 46,875.00	\$ 102,794.82
2004	Dodge Pickup	\$ 28,125.00	\$ 61,676.89
2005	Scotty Trailer	\$ 30,000.00	\$ 63,374.08
2007	Dodge Ram 3500	\$ 35,874.00	\$ 70,321.99
2012	Chevrolet Tahoe	\$ 43,333.00	\$ 70,458.36
2015	Honda Pioneer UTV	\$ 19,000.00	\$ 27,615.24
2016	Ford Command	\$ 30,114.00	\$ 42,162.28
2016	Ford Brush Vehicle	\$ 33,447.00	\$ 46,828.78
2016	Ford F-150	\$ 26,955.00	\$ 37,739.40
Total Investment		\$ 379,223.00	\$ 826,573.35
Average (2007-2016 Vehicles)			\$ 49,187.68

■ Level of Service and Forecasted Demand

Future Demand

'Level of Service' (LOS) is the relationship between service capacity and service demand for public facilities. The County has adopted a level of service for fire protection services based on the current level of service in facility space, fire apparatus, and supporting vehicles (that have a service life of at least ten years). As such, there are no existing deficiencies by definition.

Current Level of Service

This current level of service is based on the existing inventories that serve residents and businesses located in the fire protection service area today. These calculations are shown on the left-hand columns of Table 20. Existing service levels and quality of services are adequate to meet current needs and therefore establish the basis upon which the needs of future growth and development are to be met.

Table 20: Current Level of Service and Future Demand for Fire Stations and Vehicles

Facility	Service Population	Level of Service	Future Population	New Growth Demand
Existing Station Square Feet	2025 Day-Night Population	Square Feet per 2025 Day-Night Population	Day-Night Population Increase (2025-50)	Net New Square Feet Demanded
31,839	21,060	1.51182336	14,901	22,528
Existing Fire Apparatus	2025 Day-Night Population	Fire Apparatus per 2025 Day-Night Population	Day-Night Population Increase (2025-50)	Net New Apparatus Demanded
16	21,060	0.00075973	14,901	11.32
Existing Support Vehicles	2025 Day-Night Population	Support Vehicles per 2025 Day-Night Population	Day-Night Population Increase (2025-50)	Net New Support Vehicles Demanded
14	21,060	0.00066477	14,901	9.91

NOTE: 11 net new fire apparatus and 9 new support vehicles would be eligible for impact fee funding at 100% (excluding replacements).

The current level of service is calculated by dividing the current inventory of each facility type – that is, building area (square footage) from Table 18 and fire apparatus and support vehicles from Table 19 – by the current day-night population. Day-night population is used in that fire protection is a 24-hour service provided continuously to both residences and businesses in the service area.

Future Facilities Needed

The current level of service standards calculated in the left-hand columns of Table 20 are then multiplied times the increase in day-night population to 2050 (taken from the forecasts in Appendix A) to produce the future demand for fire protection facilities and vehicles created by future growth. These amounts are shown under 'New Growth Demand' on Table 20.

At this time, the 22,528 square feet in additional building area needed to serve future growth is not assigned to specific future administration space or new fire stations (or expansions of existing stations). While the projections also support the increases in the number of fire apparatus and support vehicles, the type of actual new vehicles to be acquired, like new building floor areas to be constructed, will be determined as the character and location of new growth and development occurs.⁴

Future Costs

There are three categories of future costs shown on Table 21: those for needed new/expanded building area, those for new fire apparatus and those for new support vehicles, that are based on the net expansion of facilities in those categories through 2050. Net new added space, additional fire apparatus and additional support vehicles are all 100% eligible for impact fee funding.

Table 21: Building and Vehicle Costs to Meet Future Demand

	Number	2025 Cost per Each*	Total 2025 Cost	Estimated Cost 2037 (PV)	% Impact Fee Eligible	Total Impact Eligible Cost
New Building Area*	22,528	\$ 432.76	\$ 9,749,281.43	\$ 15,505,494.05	100.0%	\$ 15,505,494.05
New Fire Apparatus	9	\$ 649,194.04	\$ 5,842,746.36	\$ 8,946,982.67	100.0%	\$ 8,946,982.67
New Support Vehicles	8	\$ 49,187.68	\$ 393,501.40	\$ 602,567.70	100.0%	\$ 602,567.70
Totals		\$ 698,814.48	\$15,985,529.19	\$ 25,055,044.42		\$ 25,055,044.42

* Building cost estimate based on average current square foot cost of similar fire stations, published in Engineering News Record reports. Estimated fire apparatus and support vehicle unit costs represent the average costs of the most recently acquired six vehicles in each vehicle category based on their net present value in 2025.

The following table lists the capital facility improvements that are anticipated to be provided over the coming years to fully meet the needs of future development while maintaining the level of service that will be enjoyed by both the county's existing residents and businesses and future growth to 2050.

⁴ It is important to note that only the acquisition of vehicles that increase the total fleet are eligible for impact fee funding. Vehicles purchased to replace aging and retired vehicles would not be eligible unless those older vehicles are then held in reserve. The key is that the purchase of new vehicles must result in expansion of the total fleet.

Table 21A: Schedule of Improvements

Year	Fire Stations				Heavy Vehicle Costs				Support Vehicle Costs			
	Cost in 2025*	% Impact Fee Eligible	Total Impact Fee Eligible	Net Present Value**	Cost in 2025 Dollars	% Impact Fee Eligible	Total Impact Fee Eligible	Net Present Value**	Cost in 2025 Dollars	% Impact Fee Eligible	Total Impact Fee Eligible	Net Present Value**
2025	\$ 2,123,351	100%	\$ 2,123,351	\$ 2,123,350	\$ 1,298,388	100%	\$ 1,298,388	\$ 1,298,388	\$ 49,188	100%	\$ 49,188	\$ 49,188
2026												
2027												
2028					\$ 649,194	100%	\$ 649,194	\$ 722,170	\$ 49,188	100%	\$ 49,188	\$ 54,717
2029												
2030									\$ 49,188	100%	\$ 49,188	\$ 58,744
2031												
2032	\$ 2,123,351	100%	\$ 2,123,351	\$ 2,765,083	\$ 1,298,388	100%	\$ 1,298,388	\$ 1,664,776	\$ 49,188	100%	\$ 49,188	\$ 63,068
2033												
2034												
2035					\$ 649,194	100%	\$ 649,194	\$ 925,957	\$ 49,188	100%	\$ 49,188	\$ 70,157
2036												
2037												
2038									\$ 49,188	100%	\$ 49,188	\$ 78,044
2039	\$ 2,123,351	100%	\$ 2,123,351	\$ 3,600,766	\$ 1,298,388	100%	\$ 1,298,388	\$ 2,134,555				
2040												
2041									\$ 49,188	100%	\$ 49,188	\$ 86,817
2042												
2043												
2044												
2045									\$ 49,188	100%	\$ 49,188	\$ 100,067
2046	\$ 2,123,351	100%	\$ 2,123,351	\$ 4,689,015	\$ 1,298,388	100%	\$ 1,298,388	\$ 2,736,899				
2047												
2048									\$ 49,188	100%	\$ 49,188	\$ 111,315
2049												
2050												
Totals	\$ 8,493,404		\$ 8,493,404	\$ 13,178,214	\$ 7,141,134		\$ 7,141,134	\$ 10,669,996	\$ 442,689		\$ 442,689	\$ 672,115

* New fire station cost based on cost per square foot experienced by other jurisdictions, at \$350 including 17% design and contingencies.

** Net Present Value for buildings = 2025 cost estimate for each building inflated to target year using the ENR Building Cost Index (BCI), and using the Consumer Price Index (CPI) for vehicles, all reduced to NPV using the Discount Rate.

Emergency Management

■ Introduction

The standards that guide the services provided by the Emergency Management Agency are:

MITIGATION--In the area of mitigation, the Pike County Emergency Management Agency is currently developing a pre-disaster mitigation plan to eliminate or reduce the effects of hazards within the county. This project requires a group effort between the county, the cities, the state, and non-governmental agencies so that all areas within the county are protected and remain eligible for federal mitigation funds and aid.

PREPAREDNESS--To meet preparedness goals we continually review our emergency operations plan and conduct two exercises each year. These exercises are geared to evaluate our response capabilities and to determine what changes and improvements we need to make to meet response needs during emergencies. The department also conducts preparedness programs for the citizens and is working toward attaining StormReady® status as designated by the National Weather Service.

RESPONSE--Proper mitigation and preparedness are both critical if we are to perform well in the next area of responsibility which is response. During significant emergency events requiring multiple agency involvement, the Pike County EMA is responsible for activating the Emergency Operations Center or "EOC" and coordinating the response. The EMA is also responsible for advising the Commission Chairman to request assistance from the State when local capabilities are overwhelmed.

RECOVERY--As soon as practical during or after response, the EMA is responsible to begin coordinating recovery activities. These activities can include requesting the establishment of a FEMA Disaster Recovery Center, debris removal, restoring utilities, and rebuilding critical infrastructure and facilities.

■ Service Area

The County's emergency management activities cover the entire county, including its cities.

■ Emergency Management Facilities

The Agency is based in the EMA Building, utilizes an ATV for transportation and maintains a weather alert system consisting of warning sirens and outdoor warning systems. In addition, communications are maintained during an emergency using a base radio system.

The Agency's capital equipment and systems are listed on the following Table 22, along with the cost of each item when it was acquired or installed. The listed equipment, vehicles and facilities adequately serve the county's residents and businesses at the current time, and establish the basis for future expansion to serve future growth in the county while maintaining the current level of service enjoyed by the county's current residents and businesses.

Based on the Agency's costs and original dates, each of the expenditures have been converted to their 2025 current value in order to recognize the true investment that has been made.

The facilities shown on Table 22 are fully adequate to provide an excellent quality of service throughout the county currently and fully serve the needs of the county's current residents and businesses. Additional equipment, vehicles and facilities will be needed to maintain this level of service for both the existing and future businesses and residents as the county grows.

Table 22: Emergency Management Facilities

Year	Item	Original Cost	Current Value 2025*
Equipment			
2017	Outdoor Warning System	\$ 39,565.00	\$ 52,563.49
2017	Warning Siren - Williamson	\$ 7,535.00	\$ 10,010.51
2017	Warning Siren - Meansville	\$ 7,535.00	\$ 10,010.51
2017	Warning Siren - Molena	\$ 7,535.00	\$ 10,010.51
2017	Slr 8000 Base Radio	\$ 10,728.00	\$ 14,252.52
2017	Weather Warning System	\$ 14,453.00	\$ 19,201.32
Total Investment--Equipment		\$ 87,351.00	\$ 116,048.86
Vehicles			
2019	Honda ATV	\$ 6,819.00	\$ 8,438.21
2020	Hooper Flat Bed Trailer	\$ 2,760.00	\$ 3,296.23
Total Investment--Vehicles		\$ 9,579.00	\$ 11,734.44
Facilities			
2019	Storage/EMA Building (5,000 sf)	\$ 139,197.00	\$ 173,571.75
2020	48 KW Genset Generator	\$ 22,249.00	\$ 26,741.44
Total Investment--Facilities		\$ 161,446.00	\$ 200,313.19

* Based on the Consumer Price Index for equipment and vehicles, and the Building Cost Index for the facilities.

The current values of the Agency's investment in its equipment, vehicles and facilities are summarized on Table 23.

Table 23: Summary Investment in Emergency Management Facilities

	2025 NPV
Equipment	\$ 116,048.86
Vehicles	\$ 11,734.44
Facilities	\$ 200,313.19
Total Investment	\$ 328,096.49

■ Future Investment – Emergency Management

The investment needed to fund future Emergency Management facilities, based on the calculations carried out in this chapter, is shown on Table 24. As noted, Emergency Management impact fees are collected both from residential and nonresidential development and are assessed as building permits are issued.

The '2025 Present Value' for each category (equipment, vehicles and facilities) is transferred to Table 24, below, from Table 23, above. Those numbers are each divided by the total existing day night population (27,999) to determine the 'per day-night person' amount of investment existing today. The 'per person' amounts are multiplied times the number of new residents and employees that are expected in the coming years (27,999) to determine the amount of investment that will be required to serve future growth and development at the same level of service enjoyed by the city's businesses and residents today. These amounts are in 2025 dollars.

Table 24: Calculation of Total Future Investment Needed

	2025 Present Value	Total 2025 Day-Night Population	Per 2025 Day-Night Person	2025 Cost to Support New Growth*	2037 Present Value**
Equipment	\$ 116,048.86	27,999	\$ 4.14	\$ 116,048.86	\$ 181,767.04
Vehicles	\$ 11,734.44	27,999	\$ 0.42	\$ 11,734.44	\$ 18,379.62
Facilities	\$ 200,313.19	27,999	\$ 7.15	\$ 200,313.19	\$ 313,750.04
		Total Investment Needed		\$ 328,096.49	\$ 513,896.70

To calculate the future 2037 Present Value (PV) of the impact fee eligible cost estimates, the PV is calculated by increasing the current (2025) estimated costs as follows:

- By using the CPI for vehicles and equipment, and
- the Engineering News Record's 10-year average construction cost index (CCI) rate for all new facilities.

All project costs are then reduced to current PV dollars using the Discount Rate.

Since residential uses are not assessed on a 'per person' basis, an additional calculation is provided to determine what the investment would be on a housing unit basis. This is detailed below on Table 25.

All of the calculations on Table 25 are the same as on Table 24 down to the '2025 cost to support new growth'. Those figures are the results of multiplying the 'per 2025 housing unit' by the number of new housing units that are expected to be added to the housing supply (3,505) in order to calculate a total.

Table 25: Future Investment Needed Specifically to Serve Residential Uses

	2025 Present Value	Total 2025 Housing Units	Per 2025 Housing Unit	2025 Cost to Support New Growth	2037 Present Value
Equipment	\$ 116,048.86	\$ 8,076.00	\$ 14.37	\$ 50,365.44	\$ 78,887.25
Vehicles	\$ 11,734.44	\$ 8,076.00	\$ 1.45	\$ 5,092.77	\$ 7,976.79
Facilities	\$ 200,313.19	\$ 8,076.00	\$ 24.80	\$ 86,936.32	\$ 136,168.14
Investment to Serve Residential Growth				\$ 142,394.53	\$ 223,032.19

The 2037 Present Value calculations are carried out as described for Table 24.

■ Future Projects

Given the very limited number of facilities that the department currently has in place, anticipating exactly when additional facilities will be needed is difficult to determine. For instance, additional warning sirens will be needed as the county grows, but exactly when they will be needed will be related to future patterns of new development. Over the coming years to 2050, some new development will gravitate to the areas that are currently developed (and within earshot of a siren) while other development may well be much farther out in the county (indicating a location for an additional siren).

Likewise, when an additional vehicle will be needed to join the existing vehicle, and additional building space will be justified, are difficult to nail down to specific years. This is why the 'investment' approach is used to average these future improvements, pegged to the prospective year of 2037.

Sheriff's Office

■ Introduction

Law enforcement, inmate incarceration, and services provided to the Pike County courts fall under the purview of the Pike County Sheriff's Office.⁵

In addition, the Sheriff's Office includes the County E-911 service.

■ Service Area

Services provided by the Sheriff, officers and staff are provided throughout the county.

The entire county is therefore considered a single service area for the provision of law enforcement activities and facilities under the Sheriff's Office category because all residents and employees of the county benefit from them. Although each city maintains its own police department, the Sheriff's Office provides back up within each incorporated area and also provides supplemental services throughout the county, including serving court papers and documents.

■ Inventory of Current Facilities and Vehicles

Table 26 shows the Sheriff's Office facilities that currently exist, and the level of investment in those facilities. The original cost of the two facilities and the year expended are shown on the table, and what those expenditures would be worth in current (2025) dollars.

Table 26: Pike County Sheriff's Facilities

Year	Facility	Original Cost	Current Value 2025*
1997	Sheriff's Office, 911 & Jail	\$ 657,626	\$ 1,034,153
2018	Training Center	\$ 183,613	\$ 288,741
Total Investment		\$ 841,239	\$ 1,322,894

Current Building Floor Area (square feet):	
Sheriff's Office and Jail	3,990
E-911	1,020
Training Center	2,070
Total Floor Area	7,080
Current Investment in Existing Facilities per square foot	\$ 186.85

* Net present value based on Building Construction Index.

⁵ Note that "Sheriffs Office" is the name of the organization and also refers to the office space occupied by the Sheriff's employees and E-911 as well as the jail.

As was shown for the Sheriff's facilities, Table 27 lists the vehicles in current operation, the year acquired and the original cost of each vehicle. Those original costs are raised to what each expenditure would be today (in 2025) using the Present Value equation.

Table 27: Pike County Sheriff's Vehicles

Year	Vehicle	Original Cost	Current Value 2025*
2006	Ford Lgt Convtnl	\$ 19,650.00	\$ 32,629.65
2006	Ford Explorer	\$ 19,875.00	\$ 33,003.27
2011	Taurus	\$ 20,745.00	\$ 30,144.13
2012	Dodge Charger	\$ 22,676.00	\$ 32,082.17
2012	Dodge Charger	\$ 29,223.00	\$ 41,344.91
2012	Dodge Charger	\$ 28,705.00	\$ 40,612.04
2013	Dodge Charger	\$ 29,756.00	\$ 40,990.17
2014	Dodge Charger	\$ 36,899.00	\$ 49,491.16
2014	Dodge Charger	\$ 30,210.00	\$ 40,519.47
2015	Dodge Charger	\$ 34,966.00	\$ 45,663.26
2016	Dodge Charger	\$ 30,249.00	\$ 38,462.71
2016	Dodge Charger	\$ 23,990.00	\$ 30,504.16
2017	Dodge Charger	\$ 30,474.00	\$ 37,728.21
2017	Dodge Durango	\$ 49,218.00	\$ 60,934.15
2017	Dodge Charger	\$ 32,549.00	\$ 40,297.16
2017	Dodge Durango	\$ 36,124.00	\$ 44,723.17
2017	Dodge Charger	\$ 34,934.00	\$ 43,249.90
2017	Dodge Ram 1500	\$ 32,265.00	\$ 39,945.55
2018	Dodge Charger	\$ 34,753.00	\$ 41,892.57
2018	Ford Taurus	\$ 27,733.00	\$ 33,430.40
2018	Ford Taurus	\$ 27,733.00	\$ 33,430.40
2019	Dodge Charger	\$ 34,498.00	\$ 40,489.88
2019	Dodge Charger	\$ 29,713.00	\$ 34,873.78
2019	Dodge Charger	\$ 29,713.00	\$ 34,873.78
2019	Ford Explorer	\$ 30,444.00	\$ 35,731.75
2020	Ford Explorer	\$ 35,839.00	\$ 40,955.89
2020	Ford Explorer	\$ 47,555.00	\$ 54,344.63
2020	Ford Explorer	\$ 47,555.00	\$ 54,344.63
2020	Ford Explorer	\$ 42,107.00	\$ 48,118.80
2020	Dodge Ram 1500	\$ 48,995.00	\$ 55,990.23
2021	Ford Explorer	\$ 45,927.00	\$ 51,101.83
2021	Ford Explorer	\$ 47,555.00	\$ 52,913.27
2021	Ford Explorer	\$ 48,636.00	\$ 54,116.07
2022	Ford Explorer	\$ 44,225.00	\$ 47,911.98
2022	Ford Explorer	\$ 45,874.00	\$ 49,698.46
2023	Ford Explorer	\$ 48,013.00	\$ 50,645.75
2023	Ford Explorer	\$ 58,594.00	\$ 61,806.95
2024	Ford Explorer	\$ 58,594.00	\$ 60,179.04
Total Investment			\$ 1,659,175.32
Average (most recent 6 vehicles)			\$ 54,059.71

While the total investment in 2025 dollars approaches 1.7 million dollars, only the most recent purchases are considered relevant given the notable rise in costs.

■ Level of Service

In 2022, a *Needs Assessment* prepared by the Georgia Sheriff's Association was published, showing that the current Sheriff's office and jail were woefully inadequate then and what was needed to address future demands for law enforcement in the county. That study proposed a new facility comprising 24,782 square feet, including administration space, the E-911 operation and a jail. Table 28 presents the calculation of Level of Service (LOS) which is based on that assessment. In addition, the Sheriff's 38 vehicles in service from Table 27 were brought forward to Table 28.

Table 28: Level of Service

Facility	Service Population	Future Level of Service
Planned Square Feet*	2050 Day-Night Population	Square Feet per 2050 Day-Night Person
24,782	42,900	0.57766900
Existing Number of Vehicles	2050 Day-Night Population	Vehicles per 2050 Day-Night Person
38	42,900	0.00088578

Day-night population is used in calculating the Level of Service and demand for future facilities due to the Sheriff's Office and Jail serving both residences and businesses throughout the county on a 24-hour basis. Because the new, planned facility will serve the county through to 2050, the 'future level of service' is based on the total day-night population projected in that year.

*New Sheriff's Office, Jail and E-911 facility.

■ Forecasts for Service Area

Future Demand

Table 29 reflects the future demand for the new Sheriff's facility as well as the net increase in vehicles,⁶ based on the Level of Service standards shown on the table (from Table 28). The LOS standards are applied to the expected day-night population growth between 2025 and 2050. Thus, as new growth and development 'pays its way' in support of additional facility space and an increase in vehicles, the adopted Level of Service for the county's existing residents and businesses will also be met.

⁶ Replacing an existing vehicle with a new vehicle is not a 'net increase' since the same number of vehicles is only maintained. The 38 vehicles shown on the table are additions to the total rolling stock that result in an increase in the fleet. Thus, although more vehicles will most likely need to be acquired in the future, replacements will not be eligible for impact fee funding.

Table 29: Future Demand for New Building Area and Vehicles

Future Level of Service	Future Population	New Growth Demand
Square Feet per 2050 Day-Night Person	Day-Night Population - 2050	Net New Square Feet Demanded
0.57766900	42,900	24,782
Vehicles per 2050 Day-Night Person	Day-Night Population - 2050	Net New Vehicles Needed
0.00088578	42,900	38

Future Costs

Since the actual pace and timing of construction for the new public safety facility has not been programmed, an 'average' year of 2037 is used for the Present Value calculation (halfway between today and the 2050 projection period).

An average per-square foot construction cost of \$426.61 is used to estimate the current cost of construction of the public safety facility, based on the average per square foot cost of similar projects in other counties, as reported by the Engineering News Record.

To calculate the Present Value (PV) of the impact fee eligible cost estimate for the construction of the new public safety facility, the PV is calculated by increasing the current (2025) estimated cost using the Engineering News Record's (ENR) 10-year average building cost inflation rate (the BCI), and then discounting this future amount back using the Discount Rate.

To calculate the PV of the impact fee eligible cost estimate of the vehicles, the current average cost of the most recently purchased vehicles (from Table 27) is also inflated to the target year (2037) using the 10-year average Consumer Price Index (CPI) and then reduced using the Net Discount Rate to produce the Present Value. Of course, some of the automobile purchases will occur earlier for less money, and some later at a greater cost. All such purchases are expected to average out over the coming 25 years.

The future cost calculations are shown on the following table.

Table 30: Costs to Meet Future Demand

	Future Needs*	2025 Cost Each**	Total 2025 Cost	Estimated Cost 2037 (PV)	% Impact Fee Eligible	Total Impact Eligible Cost
New Building Area	24,782	\$ 426.61	\$ 10,572,307.05	\$ 16,814,454.01	34.734%	\$ 5,840,377.14
Net New Vehicles	38	\$ 54,059.71	\$ 2,054,268.91	\$ 3,217,596.22	34.734%	\$ 1,117,608.42
Totals			\$ 10,572,307.05	\$ 20,032,050.23		\$ 6,957,985.56

* Based on an in-depth *Needs Analysis* prepared by the Georgia Sheriff's Association, the Sheriff has identified a need for a future 120 bed jail and administrative space (including E-911) of 24,782 square feet. The new facility will replace the current, inadequate space entirely

** Building cost estimate based on current square foot cost of similar Sheriff Department HQs and jail as reported by Engineering News Record. Cost per vehicle based on average current value of most recently purchased 6 vehicles.



Table 30A, below, lists the capital facility improvements that are anticipated to be provided relative to the Sheriff's Office over the coming years to fully meet the needs of future development while maintaining the level of service that will be enjoyed by both the county's existing residents and businesses and future growth to 2050.

Table 30A: Facility and Vehicles Needed to Meet Future Demand

Year*	Day-Night Population			Facility Addition (sf)	Additional Vehicles	% Impact Fee Eligible
	Total	Annual Increase	Cumulative Additions			
2025	27,865					100%
2026	28,326	461	461		2	100%
2027	28,792	465	927		2	100%
2028	29,261	469	1,396		1	100%
2029	29,736	474	1,871		2	100%
2030	30,214	478	2,349		1	100%
2031	30,717	503	2,852		2	100%
2032	31,223	506	3,358		2	100%
2033	31,735	512	3,870		1	100%
2034	32,252	517	4,387		2	100%
2035	32,773	521	4,908	24,782	2	100%
2036	33,321	548	5,456		1	100%
2037	33,875	554	6,010		2	100%
2038	34,434	559	6,569		1	100%
2039	34,998	564	7,133		1	100%
2040	35,567	569	7,702		2	100%
2041	36,168	601	8,303		2	100%
2042	36,776	607	8,911		1	100%
2043	37,389	613	9,524		2	100%
2044	38,008	618	10,143		2	100%
2045	38,632	624	10,767		1	100%
2046	39,295	663	11,430		1	100%
2047	39,964	670	12,099		2	100%
2048	40,639	675	12,774		1	100%
2049	41,320	682	13,455		1	100%
2050	42,007	687	14,142		1	100%
Totals				24,782	38	

*Actual implementation dates will be determined through the annual budget adoption process.

** The timing of the new building complex and number of vehicles acquired each year may vary depending on each years adopted County budget.

Road Improvements

■ Service Area

The service area for road improvement projects is defined as the entire county, in that these road projects are recognized as providing service throughout the county as part of the countywide network of streets, thoroughfares and local roads. All new development within the county will be served by this countywide network, such that improvements to any part of this network to relieve congestion or to otherwise improve capacity will positively address the increased demand created by new growth and development to some extent throughout the county.

■ Level of Service Standards

Level of Service for roadways and intersections is measured on a 'letter grade' system that rates a road within a range of service from A to F. Level of Service A is the best rating, representing unencumbered travel; Level of Service F is the worst rating, representing heavy congestion and long delays. This system is a means of relating the connection between speed and travel time, freedom to maneuver, traffic interruption, comfort, convenience and safety to the capacity that exists in a roadway. This refers to both a quantitative measure expressed as a service flow rate and an assigned qualitative measure describing parameters. *The Highway Capacity Manual, Special Report 209*, Transportation Research Board (1985), defines Level of Service A through F as having the following characteristics:

1. LOS A: free flow, excellent level of freedom and comfort;
2. LOS B: stable flow, decline in freedom to maneuver, desired speed is relatively unaffected;
3. LOS C: stable flow, but marks the beginning of users becoming affected by others, selection of speed and maneuvering become difficult, comfort declines at this level;
4. LOS D: high density, but stable flow, speed and freedom to maneuver are severely restricted, poor level of comfort, small increases in traffic flow will cause operational problems;
5. LOS E: at or near capacity level, speeds reduced to low but uniform level, maneuvering is extremely difficult, comfort level poor, frustration high, level unstable; and
6. LOS F: forced/breakdown of flow. The amount of traffic approaching a point exceeds the amount that can transverse the point. Queues form, stop & go. Arrival flow exceeds discharge flow.

The traffic volume that produces different Level of Service grades differs according to road type, size, signalization, topography, condition, and access. The County has adopted LOS D as its minimum standard for paved roads.

However, the county is particularly concerned about many of its dirt-surface roads in its developing growth areas and generally throughout the county. There is, however, a complete dearth of professional or scientific standards regarding the operational level-of service or vehicular capacity of such roads. There is, however, no objective question that dirt-surface roads limit vehicular speeds and thus capacity and pose seriously restricted emergency vehicle access during inclement weather. Thus, dirt roads can certainly be considered as 'below standard' and do not meet even minimum service expectations of the county's existing residents and businesses. Once paved, each road will meet the LOS D standard or better.

Broadly speaking, then, dirt roads do not meet the quality of services expected by the County's residents and businesses, while paved all-weather roads do. These current deficiencies (dirt roads)

are therefore scheduled for paving in order to meet the service and emergency access expectations of the current and future residents and businesses.

■ Planned Road Improvements and Costs

The dirt surface portions of the roads that are planned for paving in the coming years are shown on Table 31. Tentatively, a number of projects are scheduled to be funded by SPLOST revenue funds.

Table 31: Dirt Road Paving Projects

Road Name	Estimated Cost	Funding
Woodcreek Road	\$ 3,675,000.00	SPLOST
Shady Lane	\$ 400,000.00	SPLOST
Old Zebulon Road	\$ 3,969,000.00	SPLOST
Blanton Mill Road	\$ 6,363,000.00	SPLOST
Blanton Mill Road (North)	\$ 3,150,000.00	General Fund
Turner Road (North)	\$ 800,000.00	General Fund
Turner Road (South)	\$ 800,000.00	General Fund
Johnathan Roost Road	\$ 720,000.00	General Fund
Dunbar School Road	\$ 800,000.00	General Fund
Bethany Church Road	\$ 680,000.00	General Fund
McKinley Road (Southeast)	\$ 2,550,000.00	General Fund
Arthur Road	\$ 800,000.00	General Fund
Fossett Road	\$ 2,100,000.00	General Fund
Green Street	\$ 3,300,000.00	General Fund
Kendrick Road - Section 1	\$ 560,000.00	General Fund
Kendrick Road - Section 2	\$ 400,000.00	General Fund
Caldwell Road	\$ 400,000.00	General Fund
Campbell Road	\$ 400,000.00	General Fund
Dukes Road	\$ 1,200,000.00	General Fund
Mountain View Road	\$ 5,550,000.00	General Fund
Flowers Road	\$ 400,000.00	General Fund
Hunter Road	\$ 2,100,000.00	General Fund
Midway Road	\$ 3,900,000.00	General Fund
Total	\$ 45,017,000.00	

SPLOST Eligible	\$ 14,407,000.00
Local Tax Generated	\$ 30,610,000.00
Total	\$ 45,017,000.00

■ Net Cost to Serve New Growth

As more fully explained in the Trip Generation Appendix, only a little over 35.6% of road improvement costs are eligible for cost recovery from new growth, based on the increase in traffic that new growth will add to the traffic level existing today. At that rate, a little over \$16 million would be eligible for impact fee funding of the total \$45+ million in total cost, in current dollars. Impact fee eligible portions of each road project are detailed on Table 32. As a new revenue source, impact fee revenue would be able to supplement anticipated SPLOST revenue as costs increase due to inflation in the coming years.

Table 32: Impact Fee Eligible—Current Dollars

Road Name	Impact Fee Eligible*
Woodcreek Road	\$ 1,308,840.23
Shady Lane	\$ 142,458.80
Old Zebulon Road	\$ 1,413,547.44
Blanton Mill Road	\$ 2,266,163.36
Blanton Mill Road (North)	\$ 1,121,863.05
Turner Road (North)	\$ 284,917.60
Turner Road (South)	\$ 284,917.60
Johnathan Roost Road	\$ 256,425.84
Dunbar School Road	\$ 284,917.60
Bethany Church Road	\$ 242,179.96
McKinley Road (Southeast)	\$ 908,174.85
Arthur Road	\$ 284,917.60
Fossett Road	\$ 747,908.70
Green Street	\$ 1,175,285.10
Kendrick Road - Section 1	\$ 199,442.32
Kendrick Road - Section 2	\$ 142,458.80
Caldwell Road	\$ 142,458.80
Campbell Road	\$ 142,458.80
Dukes Road	\$ 427,376.40
Mountain View Road	\$ 1,976,615.85
Flowers Road	\$ 142,458.80
Hunter Road	\$ 747,908.70
Midway Road	\$ 1,388,973.30
Total	\$ 16,032,669.50

*Portion of total that is impact fee eligible: See Appendix B: Trip Generation.

All of the road paving projects will be undertaken over a number of years. Over time, the actual cost of each project will increase as inflation takes its toll. For the purpose of establishing a realistic total cost of the road paving program, future costs have been inflated to the year 2037 (midway to the program spanning to 2050). Although 2037 establishes when the 'average' dirt road paving project will occur, obviously many projects will occur in various years before 2037 at lower costs due to lower inflation, and others after that year for higher costs as inflation drives prices up. Using 2037 as the 'mid-point' reflects the anticipation that the lower-cost and higher-cost paving projects will average out to the 2037 total program figure of \$45,017,000.

By and large, the projects on the two tables (Table 32 and 33) are listed in the order under which they will be undertaken over the coming 25 years, although circumstances or unforeseen opportunities may well change the order in which particular projects are initiated. Specifically, individual projects to be undertaken in the coming five years are listed in the Community Work Program (which follows).

Table 33: Impact Fee Eligible--2037 Present Value

Road Name	Impact Fee Eligible
Woodcreek Road	\$ 1,823,472.10
Shady Lane	\$ 198,473.15
Old Zebulon Road	\$ 1,969,349.86
Blanton Mill Road	\$ 3,157,211.69
Blanton Mill Road (North)	\$ 1,562,976.08
Turner Road (North)	\$ 396,946.31
Turner Road (South)	\$ 396,946.31
Johnathan Roost Road	\$ 357,251.68
Dunbar School Road	\$ 396,946.31
Bethany Church Road	\$ 337,404.36
McKinley Road (Southeast)	\$ 1,265,266.35
Arthur Road	\$ 396,946.31
Fossett Road	\$ 1,041,984.05
Green Street	\$ 1,637,403.51
Kendrick Road - Section 1	\$ 277,862.41
Kendrick Road - Section 2	\$ 198,473.15
Caldwell Road	\$ 198,473.15
Campbell Road	\$ 198,473.15
Dukes Road	\$ 595,419.46
Mountain View Road	\$ 2,753,815.00
Flowers Road	\$ 198,473.15
Hunter Road	\$ 1,041,984.05
Midway Road	\$ 1,935,113.24
Total	\$ 22,336,664.86

Community Work Program

Many projects have already been started under the County's current impact fee program, as shown on the table below. Only those costs that are impact fee eligible are shown (the 100% portion). Funding sources for portions that are not impact fee eligible would be drawn from the General Fund, SPLOST or LMIG/GTIB revenue.

PIKE COUNTY, GEORGIA SCHEDULE OF IMPROVEMENTS/STWP ADDENDUM (2024-2029)							
The purpose of the Schedule of Improvements/STWP Addendum is to identify all capital improvement projects proposed to be funded in whole or in part by impact fees during the upcoming five years, beginning with the current year. They are estimates of concepts only, subject to final review and approval by the Pike County Board of Commissioners.							
Project Description County-wide	Project Start Date	Project Completion Date	Estimated Project Cost	Portion Chargeable to Impact Fees	Sources of Available Funds & Share	Responsible Party	Current Status
Library Services							
Purchase Additional Reading Materials	2024	2029	75,000	100% from Impact Fee Funds Available	Impact Fees	Pike County BOC	Under-way
Building Addition/Additional Square Footage	2026	2029	250,000	100% from Impact Fee Funds Available	Impact Fees	Pike County BOC	Planning
Sheriff's Office							
Addition to Jail and/or Replacement	2024	2029	\$5,000,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC & Sheriff's Office	Planning
Additional Radio Towers	2025	2029	\$50,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC & Sheriff's Office	Planning

Project Description County-wide	Project Start Date	Project Completion Date	Estimated Project Cost	Portion Chargeable to Impact Fees	Sources of Available Funds & Share	Responsible Party	Current Status
Fire Protection							
New Fire Station	2023	2029	\$150,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC	Underway
Additional Radio Towers	2025	2029	\$50,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC & Sheriff's Office	Planning
Parks and Recreation Facilities							
Adult Softball Fields	2026	2029	\$250,000	100% from Impact Fee Funds Available	Impact Fees Bonds	Pike County BOC & Pike County Parks & Recreation Auth.	Planning
Girls Softball Fields	2025	2028	\$400,000	100% from Impact Fee Funds Available	Impact Fees Bonds	Pike County BOC & Pike County Parks & Recreation Auth.	Planning
Football Fields	2027	2029	\$1,000,000	100% from Impact Fee Funds Available	Impact Fees Bonds	Pike County BOC & Pike County Parks & Recreation Auth.	Planning

Project Description County-wide	Project Start Date	Project Completion Date	Estimated Project Cost	Portion Chargeable to Impact Fees	Sources of Available Funds & Share	Responsible Party	Current Status
Road Improvements							
Roberts Quarters Road (Dirt Part) Eng. & Surveying	2023	2025	\$10,000	100%	100%	Pike County BOC	Underway
Old Zebulon Road (Dirt Part) Eng. & Surveying	2024	2026	\$10,000	100%	100%	Pike County BOC	Planning
Blanton Mill Road (Dirt Part) Eng. & Surveying	2024	2025	\$10,000	100%	100%	Pike County BOC	Planning
Woodcreek Road (Dirt Part) Eng. & Surveying	2025	2027	\$10,000	100%	100%	Pike County BOC	Planning
McKinley Road (Dirt part) Eng. & Surveying	2023	2025	\$10,000	100%	100%	Pike County BOC	Planning
Shady Lane (Dirt Part) Eng. & Surveying	2025	2027	\$10,000	100%	100%	Pike County BOC	Planning
Fossett Road Eng. & Surveying	2025	2027	\$10,000	100%	100%	Pike County BOC	Planning
Green Road Eng. & Surveying	2025	2027	\$10,000	100%	100%	Pike County BOC	Planning
E-911 (Sheriff's Office)							
Remodel or Rebuild E-911 Building	2026	2029	\$5,000,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC & Sheriff's Office	Planning
Additional Radio Towers	2026	2029	\$50,000	100% from Impact Fee Funds Available	Impact Fees & General Fund	Pike County BOC & Sheriff's Office	Planning

Note: If a specific project in the body of this CIE is not included in the table above, it is because implementation is expected to occur after 2030. For a complete list of impact fee eligible capital projects, refer to the public facility chapters in the body of this CIE.

Appendix A: Future Growth

In order to accurately calculate the demand for additional public facilities (land, buildings, vehicles and facilities) in the coming years, new growth and development must be quantified in future projections. These projections include forecasts for population, households, housing units, and employment to the year 2050. These projections provide the base-line conditions from which the current (2024) or future (2050) Level of Service calculations are produced.

■ Overview

While Pike County has steadily attracted new residents and businesses over the years, in the coming decades to 2050 development is expected to accelerate as growth proceeds out from the Atlanta Metro Area, including south through Fayette and Spalding County.

■ Types of Projections

Accurate projections of population, households, housing units, and employment are important in that:

- Population data and forecasts are used to establish current and future demand for services where the Level of Service (LOS) standards are per capita based.
- Household data and forecasts are used to forecast future growth in the number of housing units.
- Housing unit data and forecasts relate to certain service demands that are household based, such as parks. The number of households—defined as *occupied* housing units—is always smaller than the total supply of available housing units, which include vacant units. Over time, however, each housing unit is expected to become occupied by a household, even though any unit may become vacant during future re-sales or turnovers. To be diligent, the County must focus its public facility service levels on the total number of housing units regardless of occupancy.
- Employment forecasts are based on all jobs in the county, based primarily on projections published by Woods & Poole, Economics. Those forecasts are broken down into three categories: employment that generally does not involve buildings (such as forestry), governmental jobs, and the types of private sector jobs that are associated with the occupancy of buildings to house their operations. The three categories are provided for informational purposes only; the demand for public services, such as fire protection and EMS, apply to all three categories.

Employment data is combined with population data to produce what is known as the ‘day-night population.’ These figures represent the total number of persons receiving services, both in their homes and in their businesses, to produce an accurate picture of the total number of persons that rely on certain 24-hour services, such as fire and public safety.

The projections used for the Sheriff’s Office and Jail, the County Library, animal control, Parks and Recreation, Fire Protection, Emergency Medical Services, and Emergency Management/E911 categories are countywide forecasts because these services are delivered by the County throughout the county.

■ Historic Population Growth

Every year, the US Census Bureau estimates the population in Pike County between decennial censuses (e.g., 2010 and 2020). After a decennial census, the Bureau revises the annual estimates based

Table A-1: Annual Census Estimated Population by Jurisdiction

Geography	Population Estimate (as of July 1)										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010*
Pike County Total	13,571	13,834	14,445	14,881	15,474	15,908	16,590	17,220	17,619	17,721	17,905
Concord	376	371	376	375	379	379	384	388	386	379	377
Meansville	215	209	208	205	203	200	199	198	194	187	225
Molena	438	426	421	417	414	405	405	402	394	375	375
Williamson	330	328	334	336	342	344	351	357	358	354	475
Zebulon	1,180	1,164	1,179	1,177	1,188	1,187	1,204	1,215	1,212	1,187	1,212
Unincorporated Area	11,032	11,336	11,927	12,371	12,948	13,393	14,047	14,660	15,075	15,239	15,241

Geography	Population Estimate (as of July 1)												
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Pike County Total	18,199	18,208	18,075	18,069	18,072	18,066	18,204	18,195	18,495	18,946	19,540	19,955	20,461
Concord	375	375	372	369	370	369	372	370	370	381	390	400	407
Meansville	210	210	208	208	206	206	208	204	205	263	269	276	284
Molena	387	389	386	386	389	386	388	387	393	391	402	411	421
Williamson	492	493	491	488	489	488	491	491	499	686	706	721	741
Zebulon	1,170	1,165	1,145	1,145	1,146	1,129	1,140	1,150	1,169	1,228	1,258	1,296	1,324
Unincorporated Area	15,565	15,576	15,473	15,473	15,472	15,488	15,605	15,593	15,859	15,997	16,515	16,851	17,284

* 2010 estimate revised by Census Bureau in 2020.

Note: All data as of July 1 of each year. 2000, 2010 and 2020 estimates differ from Decennial Census counts, which were as of April 1.
Sources: For 2000 to 2010: Intercensal Estimates, US Bureau of the Census: Annual Estimates Program. For 2011-2019 intercensal estimates adjusted to revised 2020 population estimates published by Census Bureau in 2023, along with 2020, 2021 and 2022.

on the actual Census count. Unlike the decennial censuses, which are 'as of' April 1, the annual estimates are 'as of' July 1 of each year. Those annual estimates are shown in Table A-1.

Based on the county's perseverance during the Great Recession and its resurgence in the housing market beginning in 2017, the future is improving for Pike County. That is not to say that population growth each year since 2000 has been smooth.

As Table A-2 on the next page shows, while Pike County posted an overall percentage increase of more than 34.5% in population between 2000 and 2023, growth from 2000 to 2010 registered a little over 24% for just those 10 years (24.21%), well above the recession-influenced more recent 2010-2023 period (12.81%). As noted earlier, the Great Recession, beginning in mid-2008, had a notable impact on the housing industry and the national economy in general, affecting the county as well.

Taking a closer look at the annual population estimates by the Census Bureau shown on Table A-1, the annual percentage increase in population from 2000 through 2008 averaged 3.32% (from a low of 1.94% to a high of 4.42% in 2002). Reflecting the full impact of the recession during 2009 and its lingering effects to 2016, this dropped to an average annual increase of only 0.32% (ranging from a high of 1.64% in 2011 to a low of 0.03% in 2014). Starting in 2017, population growth recovered somewhat, producing an overall annual average increase of

1.71% between 2017 and 2023. Notably, most recently, population growth accelerated from 2020 to 2023 to an average for the 3 years of 2.6%. During these past three years, growth in 2021 hit a high of 3.14% and experienced a low in 2022 of 2.12%--clearly establishing a rebound in growth.

Compared to the cities in the county, from 2000 to 2023 the unincorporated area outpaced all of the cities except Williamson on a percentage growth basis. Because of the comparatively low growth in the cities over the past 23 years, the unincorporated area even outpaced the county as a whole on a percentage of growth basis.

Table A-2: Comparison of Population Growth Rates - 2000-2023

	2000-2010 Increase	Percent	2010-2023 Increase	Percent	2000-2023 Increase	Percent
Pike County Total	4,334	24.21%	2,556	12.81%	6,890	34.53%
Concord	1	0.27%	30	7.50%	31	7.75%
Meansville	10	4.44%	59	21.38%	69	25.00%
Molena	-63	-16.80%	46	11.19%	-17	-4.14%
Williamson	145	30.53%	266	36.89%	411	57.00%
Zebulon	32	2.64%	112	8.64%	144	11.11%
Unincorporated Area	4,209	27.62%	2,043	12.12%	6,252	37.10%

	Percent of County	Percent vs County %	Percent of County	Percent vs County %	Percent of County	Percent vs County %
Concord	0.02%	1.10%	1.17%	58.55%	0.45%	22.45%
Meansville	0.23%	18.36%	2.31%	166.89%	1.00%	72.41%
Molena	-1.45%	-69.41%	1.80%	87.38%	-0.25%	-11.98%
Williamson	3.35%	126.11%	10.41%	288.03%	5.97%	165.10%
Zebulon	0.74%	10.91%	4.38%	67.47%	2.09%	32.18%
Unincorporated Area	97.12%	114.09%	79.93%	94.65%	90.74%	107.45%

■ Population Forecasts--Countywide

Two mathematical forecast methods were used to project the county's past population growth forward to 2050, one using a 'linear trend' (straight line) and the other a 'growth trend' (curved line) forecast algorithm. Table A-3 shows the results using the Census estimates for 2000-2023. The raw numbers of each projection method are shown on the tables (the gray numbers).

The algorithms used to prepare the projections shown on Table A-3 present a 'smooth' line from the 'start' date (2000), which also changes the Census population figures on the tables from the actual Census data. Because of this, the projected future population estimates must be rectified so that the Census 2023 population figure is the 'start' population for each forecast.

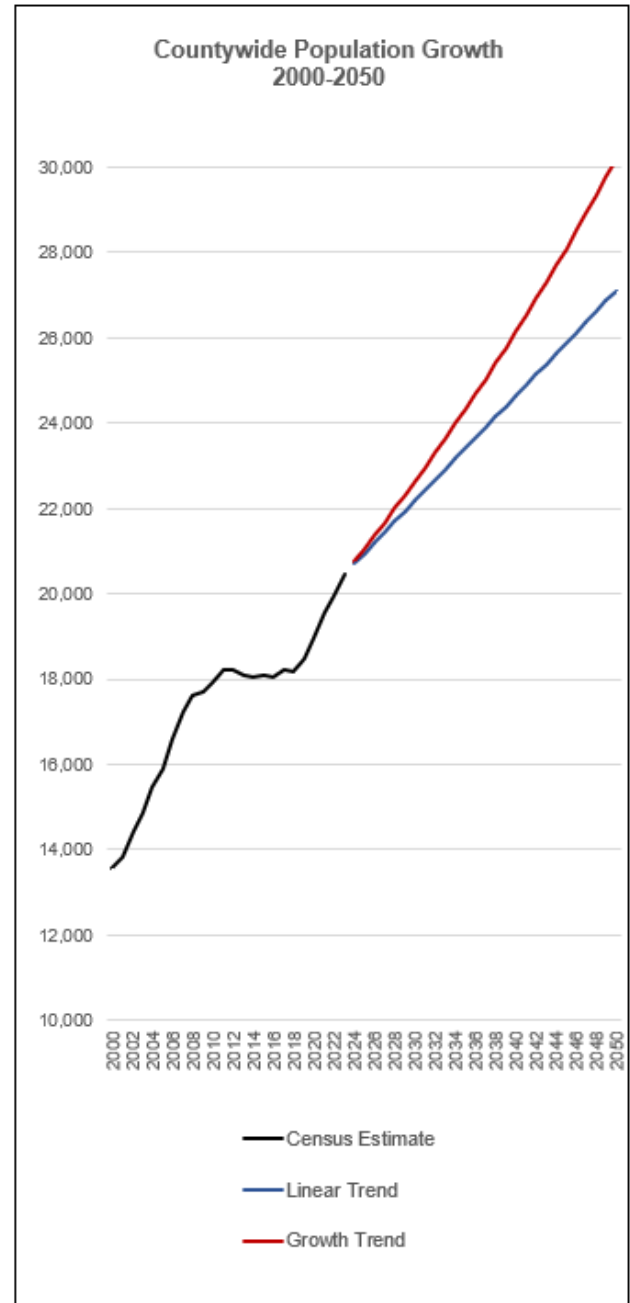
This is done by determining the extent to which the raw numbers in the projections for 2023 differ from the Census estimate that year. In the 'adjustment to 2023' boxes at the bottom of the table, the raw projection numbers for 2023 are shown, and the percentage at which those numbers differ from the actual Census figure that year. The percentage of each variance is then applied to each of the raw projection figures starting in 2024 to produce the final future population figures for the linear trend and the growth trend each year out to 2050.

The graph accompanying the table illustrates the past census figures and the results of each of the two projection approaches. Clearly visible is also the faster rate of growth from 2000 up to the Great Recession years, followed by a resumption of growth starting around 2017.

Table A-3: Pike County Population Forecast based on 2000-2023 Growth

	Census Estimate	Linear Trend Raw	Growth Trend Raw	Linear Trend Adjusted	Growth Trend Adjusted
2000	13,571	14,608	14,660	13,571	13,571
2001	13,834	14,851	14,873	13,834	13,834
2002	14,445	15,094	15,089	14,445	14,445
2003	14,881	15,337	15,308	14,881	14,881
2004	15,474	15,580	15,530	15,474	15,474
2005	15,908	15,823	15,756	15,908	15,908
2006	16,590	16,066	15,984	16,590	16,590
2007	17,220	16,309	16,217	17,220	17,220
2008	17,619	16,552	16,452	17,619	17,619
2009	17,721	16,795	16,691	17,721	17,721
2010	17,905	17,038	16,933	17,905	17,905
2011	18,199	17,281	17,179	18,199	18,199
2012	18,208	17,524	17,429	18,208	18,208
2013	18,075	17,767	17,682	18,075	18,075
2014	18,069	18,010	17,939	18,069	18,069
2015	18,072	18,253	18,199	18,072	18,072
2016	18,066	18,495	18,463	18,066	18,066
2017	18,204	18,738	18,732	18,204	18,204
2018	18,195	18,981	19,004	18,195	18,195
2019	18,495	19,224	19,280	18,495	18,495
2020	18,946	19,467	19,559	18,946	18,946
2021	19,540	19,710	19,844	19,540	19,540
2022	19,955	19,953	20,132	19,955	19,955
2023	20,461	20,196	20,424	20,461	20,461
2024		20,439	20,721	20,707	20,758
2025		20,682	21,022	20,953	21,060
2026		20,925	21,327	21,199	21,365
2027		21,168	21,637	21,446	21,676
2028		21,411	21,951	21,692	21,990
2029		21,654	22,270	21,938	22,310
2030		21,897	22,593	22,184	22,634
2031		22,140	22,921	22,430	22,962
2032		22,383	23,254	22,676	23,296
2033		22,625	23,592	22,922	23,634
2034		22,868	23,934	23,168	23,977
2035		23,111	24,282	23,415	24,326
2036		23,354	24,634	23,661	24,679
2037		23,597	24,992	23,907	25,037
2038		23,840	25,355	24,153	25,401
2039		24,083	25,723	24,399	25,770
2040		24,326	26,097	24,645	26,144
2041		24,569	26,476	24,891	26,524
2042		24,812	26,860	25,137	26,909
2043		25,055	27,250	25,384	27,300
2044		25,298	27,646	25,630	27,696
2045		25,541	28,048	25,876	28,098
2046		25,784	28,455	26,122	28,506
2047		26,027	28,868	26,368	28,920
2048		26,270	29,287	26,614	29,340
2049		26,513	29,713	26,860	29,766
2050		26,755	30,144	27,106	30,199

Adjustment to 2023	20,196	20,424	101.312%	100.181%
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The forecasts include the unincorporated area and all of the cities within the County.

Considering that longer term forecasts, including the recovery from the Great Recession, coupled with growing development trends in recent years, is a more reliable indication of future growth in the county, and that in the long run future growth will ultimately reflect growth over the past two decades and even accelerate toward pre-recession conditions, **the 'growth trend' projection** shown on Table A-3 most clearly reflects the anticipated future population growth to 2050.

■ Comparison to Forecasts by Others

As the next step, the forecasts calculated for Table A-3 have been compared to countywide forecasts prepared by other entities. These include Woods & Poole Economics (a highly regarded national consulting firm), and the Governor's Office of Planning & Budget (Georgia's official source for State projects.) These forecasts are shown on Table A-4.

As can be seen on the table, Woods & Poole reported a 2050 population for the county that was comparatively close to the census-based linear trend forecast. The negative numbers show that the Woods & Poole forecasts were lower than both the County linear trend and the growth trend forecasts, ever increasingly so through 2050. By 2050, the Woods & Poole forecast was slightly below the linear trend forecast by 1,092 people (4%), but below the growth trend number by 2050 of 4,185 people

Table A-4: Pike County Population Forecast Comparisons

	County Linear Trend	County Growth Trend	Woods & Poole	Ga OPB**	Variance: Woods & Poole		Variance: Ga OPB	
					County Linear Trend	County Growth Trend	County Linear Trend	County Growth Trend
2020	18,946	18,946	18,946	n/a	0	0	n/a	n/a
2021	19,540	19,540	19,540	n/a	0	0	n/a	n/a
2022	19,955	19,955	19,955	n/a	0	0	n/a	n/a
2023	20,461	20,461	20,461	n/a	0	0	n/a	n/a
2024	20,707	20,758	20,637	20,695	-70	-121	-12	-63
2025	20,953	21,060	20,816	20,911	-137	-244	-42	-149
2026	21,199	21,365	20,997	21,122	-202	-368	-77	-243
2027	21,446	21,676	21,180	21,309	-266	-496	-137	-367
2028	21,692	21,990	21,364	21,494	-328	-626	-198	-496
2029	21,938	22,310	21,551	21,662	-387	-759	-276	-648
2030	22,184	22,634	21,741	21,814	-443	-893	-370	-820
2031	22,430	22,962	21,932	21,967	-498	-1,030	-463	-995
2032	22,676	23,296	22,126	22,122	-550	-1,170	-554	-1,174
2033	22,922	23,634	22,321	22,251	-601	-1,313	-671	-1,383
2034	23,168	23,977	22,519	22,393	-649	-1,458	-775	-1,584
2035	23,415	24,326	22,720	22,522	-695	-1,606	-893	-1,804
2036	23,661	24,679	22,922	22,647	-739	-1,757	-1,014	-2,032
2037	23,907	25,037	23,127	22,768	-780	-1,910	-1,139	-2,269
2038	24,153	25,401	23,334	22,895	-819	-2,067	-1,258	-2,506
2039	24,399	25,770	23,544	23,014	-855	-2,226	-1,385	-2,756
2040	24,645	26,144	23,756	23,123	-889	-2,388	-1,522	-3,021
2041	24,891	26,524	23,970	23,242	-921	-2,554	-1,649	-3,282
2042	25,137	26,909	24,188	23,337	-949	-2,721	-1,800	-3,572
2043	25,384	27,300	24,407	23,448	-977	-2,893	-1,936	-3,852
2044	25,630	27,696	24,628	23,540	-1,002	-3,068	-2,090	-4,156
2045	25,876	28,098	24,853	23,642	-1,023	-3,245	-2,234	-4,456
2046	26,122	28,506	25,080	23,737	-1,042	-3,426	-2,385	-4,769
2047	26,368	28,920	25,309	23,822	-1,059	-3,611	-2,546	-5,098
2048	26,614	29,340	25,542	23,904	-1,072	-3,798	-2,710	-5,436
2049	26,860	29,766	25,776	23,978	-1,084	-3,990	-2,882	-5,788
2050	27,106	30,199	26,014	24,051	-1,092	-4,185	-3,055	-6,148

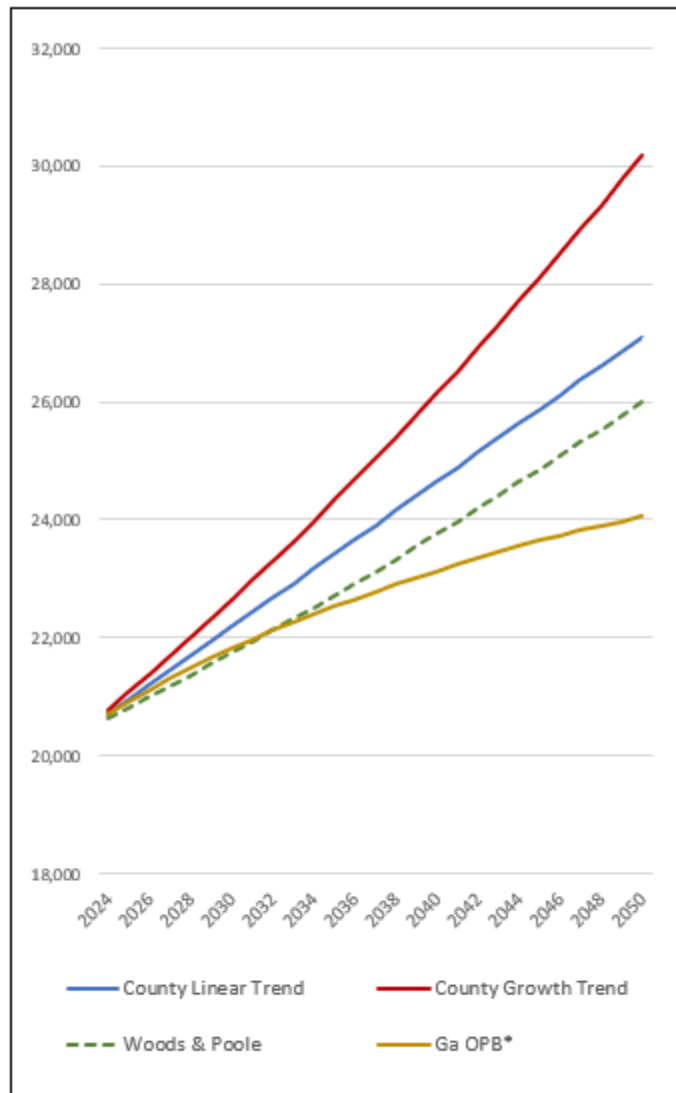
Note: 2020 to 2023 County Trend numbers are U.S. Census figures.

* Woods & Poole Economics, Inc., 2024 Georgia Data Book.

** Georgia Governor's Office of Planning & Budget, 2024

(14%). This disparity is somewhat due to the fact that Woods & Poole uses straight line algorithms, as can be seen on the following graph, which provides a visual comparison of the various forecasts on Table A-4.

Graph of Forecast Comparisons



* Georgia Governor's Office of Planning & Budget.

The forecast produced by the OPB presents a greater deviation from both of the county's two forecasts as well as Woods & Poole. While the other forecasts on the table follow ever increasing lines, the OPB's forecast traces a curved line from the very beginning, with increasingly lower annual increases on to 2050.

Compared to the 'linear trend' county forecast, the OPB forecast begins close to the county forecasts in 2024 and then increasingly diverges from the County's forecast to 2050. Compared to the county 'growth trend', OPB is increasingly negative from 2024 throughout the forecast period, ending 6,148 people lower than the County Growth Trend forecast.⁷ The OPB forecasts by 2050 are 11% lower than the County's linear trend forecast, and 20% below the County's growth trend forecast.

Conclusion

Both Woods & Poole and, especially, OPB underestimate the vitality that has returned to Pike County, and that is exemplified by the Census population estimates for the past several years. This recent trend is expected to propel the County's growth in the future, which is best exemplified by the growth trend forecast (as discussed above).

⁷ It is noted that, under Georgia Law, the OPB is required to count all pregnant women as two people for projects that are State funded. Impact fee studies are not State funded, but it is not known whether or not this requirement has been applied to the OPB forecasts as published for Pike County.

■ **Housing Unit Forecasts**

Projecting new growth and development in terms of housing units is important because residential impact fees are assessed when building permits are issued for new units. Thus, the housing unit is used as the basis for assessing impact fees.

Using the housing unit for fee calculations rather than the number of residents that may occupy the housing unit is more equitable because the average number of residents in the unit, based on unit size, is unreliable. The number of people residing in a particular housing unit will most likely vary in the years ahead as lifestyles change, families grow, children grow up, occupants age, or the unit becomes occupied by a different household as the previous occupants move out. Thus, using average family sizes as the basis will vary widely as the years go by. This would result in a constant reassessment of the impact fees due because the demand for services would vary as the number of residents in the unit varies. Instead, using an average fee per housing unit based on average household sizes results in ‘averaging’ the demand for services which would otherwise vary as the population in the unit changes over time.

The future increase in the number of housing units in the county is based on the population forecasts presented in the previous section.

A ‘household’ represents an occupied housing unit. Additional ‘vacant’ housing units, therefore, need to be added to the number of households in order to estimate the total number of housing units in the county. As shown on Table A-5, on the next page, future population numbers from Table A-3 are converted into the number of households expected in future years for the county as a whole. This conversion from population to the number of households is based on the average household size data taken from the latest Woods & Poole figures for the county.

The left-hand section of the table shows the Woods & Poole forecasts for total population living in households and the number of households in the county. The average household size numbers are calculated by dividing the household population figures by the number of households each year. This calculation, therefore, excludes the population living in group quarters (which are not housing units).

In 2022, the Census Bureau published updated figures indicating that the average household size in the county was 2.97052, which was higher than the Woods & Poole figure of 2.77 by 106.09%. This percentage was then applied to the Woods & Poole average estimates to calculate the actual average household size each year to 2050. The assumption is that the average population-per-household sizes in Pike County will ‘track’ proportionally the trend projected by Woods & Poole countywide. In this way, the average household sizes moving forward were still influenced by the socioeconomic assumptions made by Woods & Poole affecting future years, but not their specific numbers.

The adjusted average household size numbers are used to produce a calculation of the number of households estimated in future years based on the population forecast presented earlier in this Appendix. Given the tightly knit sociometric model that W&P uses, the relationship between population and households relative to average ratios between them is considered viable as guides to updating such ratios for Pike County.

To arrive at the estimated total housing units for each year, including vacant units, the number of households (i.e., occupied housing units) is increased by the applicable occupancy rate. For 2022, the Census estimates of total housing units and total households indicated that 90.36736% of all housing units were occupied. Applying this ‘occupancy rate’ the total number of housing units (occupied plus vacant) could be determined. All of these housing unit calculations are shown on the following Table A-5.

Table A-5: Countywide Housing Unit Forecasts: 2025-2050

	Pike County (Woods & Poole)				Pike County Projected				
	Population in Households	House-holds	Average HH Size*		Population	Average HH Size	House-holds	Occupancy Rate	Total Units
2021	19,250	6,875	2.8000	2021	19,540	2.9705	6,578	90.36736%	7,279
2022	19,750	7,130	2.7700	2022	19,955	2.9387	6,790	90.36736%	7,514
2023	20,257	7,366	2.7501	2023	20,461	2.9175	7,013	90.36736%	7,761
2024	20,379	7,465	2.7299	2024	20,758	2.8962	7,167	90.36736%	7,931
2025	20,563	7,560	2.7200	2025	21,060	2.8856	7,298	90.36736%	8,076
2026	20,732	7,650	2.7101	2026	21,365	2.8751	7,431	90.36736%	8,223
2027	20,970	7,738	2.7100	2027	21,676	2.8750	7,539	90.36736%	8,343
2028	21,122	7,823	2.7000	2028	21,990	2.8644	7,677	90.36736%	8,495
2029	21,344	7,905	2.7001	2029	22,310	2.8645	7,788	90.36736%	8,618
2030	21,477	7,984	2.6900	2030	22,634	2.8538	7,931	90.36736%	8,776
2031	21,681	8,060	2.6900	2031	22,962	2.8538	8,046	90.36736%	8,904
2032	21,878	8,133	2.6900	2032	23,296	2.8539	8,163	90.36736%	9,033
2033	22,069	8,204	2.6900	2033	23,634	2.8539	8,281	90.36736%	9,164
2034	22,260	8,275	2.6900	2034	23,977	2.8539	8,402	90.36736%	9,298
2035	22,532	8,345	2.7001	2035	24,326	2.8645	8,492	90.36736%	9,397
2036	22,721	8,415	2.7001	2036	24,679	2.8645	8,615	90.36736%	9,533
2037	22,910	8,485	2.7001	2037	25,037	2.8645	8,740	90.36736%	9,672
2038	23,096	8,554	2.7000	2038	25,401	2.8645	8,868	90.36736%	9,813
2039	23,368	8,623	2.7100	2039	25,770	2.8750	8,963	90.36736%	9,918
2040	23,558	8,693	2.7100	2040	26,144	2.8750	9,093	90.36736%	10,062
2041	23,745	8,762	2.7100	2041	26,524	2.8750	9,226	90.36736%	10,209
2042	23,940	8,834	2.7100	2042	26,909	2.8750	9,360	90.36736%	10,358
2043	24,230	8,908	2.7200	2043	27,300	2.8857	9,461	90.36736%	10,469
2044	24,436	8,984	2.7199	2044	27,696	2.8856	9,598	90.36736%	10,621
2045	24,651	9,063	2.7200	2045	28,098	2.8856	9,737	90.36736%	10,775
2046	24,869	9,143	2.7200	2046	28,506	2.8857	9,879	90.36736%	10,932
2047	25,095	9,226	2.7200	2047	28,920	2.8857	10,022	90.36736%	11,090
2048	25,331	9,313	2.7200	2048	29,340	2.8856	10,168	90.36736%	11,252
2049	25,573	9,402	2.7200	2049	29,766	2.8856	10,315	90.36736%	11,415
2050	25,824	9,494	2.7200	2050	30,199	2.8857	10,465	90.36736%	11,581
2025-2050 Increase					9,139		3,167		3,505

* Dividing total households by total population in households eliminates population in group quarters.

Multiplier: 106.0900% based on 2022 Census data.

Source: Woods & Poole Economics, Inc., 2024
Georgia Data Book, Pike County.

Sources: 2021 - 2023 County data - US Bureau of the Census.
2024-2050 County Population - 2000-2022 Growth Trend forecast.

■ Employment Forecasts

For the employment projections, we looked first at the countywide forecasts prepared by Woods & Poole (W&P). W&P counts jobs, not just employed people, which capture people holding two or more jobs, self-employed sole proprietors and part-time workers, as well as vacant positions. This gives a more complete picture than Census figures (which report only the number of people with jobs).

On Table A-6, as discussed previously, the total number of jobs shown are broken down into three categories for informational purposes only.

Table A-6: County-wide Employment Forecast (Jobs)

	2025	2030	2035	2040	2045	2050	2025-2050 Change	
							Number	Percent
Total Employment	6,939	7,812	8,802	9,927	11,220	12,701	5,762	45.4%
Farm Employment	301	304	306	308	310	312	11	3.5%
Forestry, Fishing	58	64	70	76	84	92	34	37.0%
Mining	6	6	6	6	6	6	0	0.0%
Total Not Building Related	365	374	382	390	400	410	45	11.0%
Federal Civilian	28	32	35	39	42	46	18	39.1%
Federal Military	52	53	55	56	58	59	7	11.9%
State & Local Government	761	807	854	901	949	994	233	23.4%
Total Government	841	892	944	996	1,049	1,099	258	23.5%
Utilities	17	19	20	21	23	24	7	29.2%
Construction	1,170	1,261	1,359	1,466	1,584	1,711	541	32.6%
Manufacturing	498	632	790	978	1,201	1,465	967	66.0%
Wholesale Trade	273	346	437	555	705	897	624	69.6%
Retail Trade	569	749	965	1,224	1,536	1,913	1,344	70.3%
Transportation & Warehousing	170	176	184	196	211	230	60	26.1%
Information	40	41	40	37	36	34	-6	-17.6%
Finance & Insurance	218	211	205	198	190	181	-37	-20.4%
Real Estate	550	636	718	799	877	954	404	42.3%
Professional & Technical Services	272	309	349	392	438	486	214	44.0%
Management of Companies	25	26	28	31	34	38	13	34.2%
Administrative & Waste Services	458	528	608	700	802	914	456	49.9%
Educational Services	173	200	233	269	309	351	178	50.7%
Health Care & Social Assistance	443	485	532	583	639	700	257	36.7%
Arts, Entertainment & Recreation	120	140	160	182	206	233	113	48.5%
Accommodation & Food Services	200	220	243	267	296	327	127	38.8%
Other Private Services	536	569	605	644	686	733	197	26.9%
Total Private Building Related	5,732	6,548	7,476	8,542	9,773	11,191	5,459	48.8%

Source: Woods & Poole Economics, Inc., 2024 Georgia Data Book, Pike County, as adjusted.

The Woods & Poole job numbers have been adjusted for Pike County because of an apparent under-count by Woods & Poole. The population forecast for Pike County by Woods & Poole to 2050 is only 26,014, compared to the population forecast for this report at 30,199, which is 16% higher. Looking

at every year beginning in 2025, the population forecast in this report progressively increases every year over the Woods & Poole forecast, beginning at 0.59% in 2024 and increasing smoothly to a difference of 16.09% in 2050. The jobs numbers shown on Table A-6 for each year have therefore been adjusted across the board by the applicable percentage representing the 'undercount' in the year indicated.

Table A-7 provides a summary of future jobs in Pike County taken from Table A-6 for the years shown on that table and interpolated for each year in between. As noted above, it is the total jobs that impact fees can be applied to.

Table A-7 Summary - Countywide Jobs

	Total Jobs	Not Building Related	Government	Private Building Related
2025	6,939	365	841	5,732
2026	7,114	367	851	5,895
2027	7,288	369	861	6,058
2028	7,463	370	872	6,222
2029	7,637	372	882	6,385
2030	7,812	374	892	6,548
2031	8,010	376	902	6,734
2032	8,208	377	913	6,919
2033	8,406	379	923	7,105
2034	8,604	380	934	7,290
2035	8,802	382	944	7,476
2036	9,027	384	954	7,689
2037	9,252	385	965	7,902
2038	9,477	387	975	8,116
2039	9,702	388	986	8,329
2040	9,927	390	996	8,542
2041	10,186	392	1,007	8,788
2042	10,444	394	1,017	9,034
2043	10,703	396	1,028	9,281
2044	10,961	398	1,038	9,527
2045	11,220	400	1,049	9,773
2046	11,516	402	1,059	10,057
2047	11,812	404	1,069	10,340
2048	12,109	406	1,079	10,624
2049	12,405	408	1,089	10,907
2050	12,701	410	1,099	11,191
Increase 2025-	5,762	45	258	5,459
Percent of Total		0.78098%	4.47761%	94.74141%

For economic policymaking and recruitment, however, the vast majority of countywide jobs are projected to be in the business categories comprising the private building related jobs.

Summary: Data for Impact Fee Calculations

All of the public services considered in this report are delivered by the County throughout the county. These include the Sheriff's Office and Jail, the County Library, Animal Services, E911, Parks and Recreation and fire protection categories. Countywide growth forecasts are shown on Table A-8 for these

services.

For public facility categories that serve only residential uses, impact fees are assessed for each housing unit as building permits are issued. For services provided to both residential and nonresidential uses, the fees are based on the day-night population generated by the use.

Table A-8: Future Growth - Countywide

	Residential Uses	Nonresidential Uses		
	Housing Units	Population	Total Jobs	Day-Night Population
2025	8,076	21,060	6,939	27,999
2026	8,223	21,365	7,114	28,479
2027	8,343	21,676	7,288	28,964
2028	8,495	21,990	7,463	29,453
2029	8,618	22,310	7,637	29,947
2030	8,776	22,634	7,812	30,446
2031	8,904	22,962	8,010	30,972
2032	9,033	23,296	8,208	31,504
2033	9,164	23,634	8,406	32,040
2034	9,298	23,977	8,604	32,581
2035	9,397	24,326	8,802	33,128
2036	9,533	24,679	9,027	33,706
2037	9,672	25,037	9,252	34,289
2038	9,813	25,401	9,477	34,878
2039	9,918	25,770	9,702	35,472
2040	10,062	26,144	9,927	36,071
2041	10,209	26,524	10,186	36,710
2042	10,358	26,909	10,444	37,353
2043	10,469	27,300	10,703	38,003
2044	10,621	27,696	10,961	38,657
2045	10,775	28,098	11,220	39,318
2046	10,932	28,506	11,516	40,022
2047	11,090	28,920	11,812	40,732
2048	11,252	29,340	12,109	41,449
2049	11,415	29,766	12,405	42,171
2050	11,581	30,199	12,701	42,900
Increase 2025-50	3,505	9,139	5,762	14,901

Appendix B: Trip Generation

In order to calculate new growth and development's fair share of the cost of road improvements, it is necessary to establish how much of the future traffic on Pike County's roads will be generated by new growth, over and above the traffic generated by the county's residents and businesses today. This Appendix Section describes the process through which this determination is made.

■ Summary

A Level of Service must be established for road improvements to ensure that, ultimately, existing development and new growth are served equally. This Section also presents the process through which new growth and development's 'fair share' of road improvement costs is calculated, and tables summarizing the technical portions of this methodology are included.

Level of Service

The County has set its Level of Service for road improvements at LOS "D", a level below which a number of roads in the county operate. Using this LOS maximizes roadway capacity before traffic conditions actually break down (LOS "F").

All road improvement projects benefit existing and future traffic proportionally to the extent that relief from over-capacity conditions eases traffic problems for everyone. For example, since new growth by 2050 will represent a certain portion of all 2050 traffic, new growth would be responsible for that portions' cost of the road improvements.

It is noted that the cost-impact of non-Pike County generated traffic on the roads traversing the county (cross commutes) is offset by state and federal assistance. The net cost of the road projects that accrue to Pike County reasonably represents (i.e., is 'roughly proportional' to) the impact on the roads by Pike County residents driving to and from their homes, and business activity, including employees and customers arriving and leaving, deliveries of merchandise and shipments out (if any).

The basis for the road impact fee would therefore be Pike County's cost for the improvements divided by all traffic generated within the county in 2050 (existing today plus new growth)—i.e., the cost per trip times the traffic generated by new growth alone. For an individual land use, when a building permit is issued, the cost per trip would be applied to the number of trips that will be generated by that particular new development, assuring that new growth would only pay its 'fair share' of the road improvements that serve it.

Approach

This methodology proceeds along the following lines:

- Total traffic currently generated by Pike County residents and businesses in 2025 on the road system within the county is calculated from trip generation and commuting data. Various data sources are relied upon to determine current conditions, as explained in each appropriate section below.
- Future Pike County-generated traffic from new growth in the county is calculated from housing unit and employment forecasts to 2050.
- The portion of 2050 total traffic that is generated by new housing units and employment in the county establishes the percentage of Pike County's cost of the future road improvements that can be included in an impact fee.

Summary Table

The table below shows how the portion of 2050 traffic generated by new growth is calculated. The figures represent all trips generated by general land use, including pass-by and diverted trips.

Table B-1: Average Daily Trip Ends Generated by New Growth

	2025	2050	Increase	Percent New Growth Trip Ends
Residential Trips	75,018	107,964	32,946	
Nonresidential Trips	95,275	162,554	67,279	
Less: Internal Commutes*	(19,580)	(28,179)	(8,599)	
Net Trip Ends	150,713	242,339	91,626	37.81%

* Residents who work in Pike County. These trips to and from work are included in the residential trips.

The next table, below, calculates the Primary Trip Ends generated by existing and future traffic by deleting pass-by and diverted trips, as discussed in the next section, below.

Table B-2: Primary Daily Trip Ends Generated by New Growth

	Percent Primary Trip Ends*	Primary Trip Ends			Percent New Growth Primary Trip Ends
		2025	2050	Increase	
Residential Trips	100%	75,018	107,964	32,946	
Commercial	51%	43,920	71,266	27,346	
Industrial + Utility	92%	8,242	20,694	12,452	
Less: Internal Commutes	100%	(19,580)	(28,179)	(8,599)	
Net New Primary Trip Ends		107,600	171,745	64,145	37.35%

* Derived from 'Trip Generation Handbook' chapter, *Trip Generation*, 11th Edition, Institute of Transportation Engineers.

Overall, new residents and businesses located within Pike County will generate 37.35% (more accurately, 37.3491504%) of all Pike County vehicles on its roads by 2050. Thus, new growth's 'fair share' of the cost to the County to provide road improvements to serve current and future traffic cannot exceed this figure.

■ Pass-by and Diverted Trips

The impact of new growth and development on Pike County's road network is the increased traffic added to the system, expressed by transportation engineers as 'trips'. Every 'trip' has two ends—a beginning at its origin and an end at its destination (known as 'trip ends'). There are three types of trips, defined as:

A **Primary Trip** (and its trip ends)—a vehicle travelling from its original beginning to its intended final destination. Driving from one's home to one's place of work is an example of a primary trip.

A **Pass-by Trip**—a vehicle travelling along its usual route from its origin to its final destination that stops off at an intermediate location for any reason. A trip from home to work that stops along the way for gas, dropping off a child at daycare, picking up coffee or dinner, or for any other reason, represents a 'pass-by' trip at the intermediate location.

A **Diverted Trip** (previously called a diverted 'link' trip)—a vehicle that diverts from its normal primary route between its origin to its final destination and takes a different route to stop off at an intermediate location for any reason. While a pass-by trip remains on its normal route, a diverted trip changes its route to other roads to arrive at the intermediate stop.

New primary trips add vehicles to the road network. Pass-by and diverted trips involve the same vehicles stopping off between their original beginnings and their final destinations and therefore do not add new vehicles to the road network—the vehicles were already there on their way to their final destinations.

These different types of trips result in different types of 'trip ends'. On a home-to-daycare-to-work trip, for instance, there are two primary trip ends (home and work) and two pass-by or diverted trip ends: arriving at the daycare center and leaving from there to drive to work, for instance. The net impact on the road network, however, is created by the one vehicle and its two primary trip ends.

Impact fee calculations take note of these pass-by and diverted trip ends as not adding to the overall traffic on the road network and deletes them from the total trip ends reported in ITE's *Trip Generation* manual.

While the table above uses the overall average percentages of primary trip ends derived from ITE for broad land use categories, the actual percentage for each land use listed on the impact fee schedule for roads is applied to the total trip ends to determine the primary trip ends attributed to that particular land use.

■ Residential Trip Generation

Average trip generation rates published by the Institute of Transportation Engineers (ITE) differentiate between 'single-family detached housing' and 'apartments'. The closest correlations with the US Census definitions are 'single-family units' and 'multi-family units', which are shown on the following table.

Table B-3: Residential Units by Type: 2025 and 2050

	Total in 2023*	Percent	Total in 2025**	Increase 2025-2050	Total in 2050
Single-Family Units	7,352	95.41%	7,623	3,458	10,972
Multi-Family Units	354	4.59%	368	160	528
Total	7,706	100.0%	7,991	3,618	11,500

* Based on the 2022 1-Year American Community Survey data report (Census Bureau) for occupied housing units.

** See Appendix A: Future Growth for total housing unit projections.

The 2023 breakdown of housing units by type on the table above are taken from the most recent American Community Survey for Pike County (published by the Census Bureau). The 2023 percentage by housing type (single-family and multi-family) is calculated and applied to the total number of housing units projected in 2025. It is assumed that these percentages will persist into the future, producing a breakdown of the projected 3,618 new housing units forecast for the 2025-2050 period.

The next table, below, calculates the amount of traffic that is generated by the county's housing stock today, and the amount that will be generated in 2050.

Table B-4: Residential Trip Generation - 2025-2050 New Growth Increase

	ADT* Trip Ends	2025 Units	2025 ADT Trip Ends	2050 Units	2050 ADT Trip Ends	Increase 2025-2050	Percent New Growth Trip Ends
Single-Family Units	9.52	7,623	72,571	10,972	104,453	31,882	
Multi-Family Units	6.65	368	2,447	528	3,511	1,064	
Total		7,991	75,018	11,500	107,964	32,946	

* Average Daily Traffic (trip ends) on a weekday; Institute of Transportation Engineers *Trip Generation*, 11th Edition. Total includes trips to/from work.

The calculations are made on the basis of 'average daily traffic' on a normal weekday, using average trip generation rates derived through multiple traffic studies across the country (350 for single-family

and 86 for apartments) and published by ITE. The rates are expressed for ‘trip ends’—that is, traffic both leaving and coming to a housing unit.

Comparing traffic in 2025 to 2050, the future increase in trip ends can be calculated, which will represent 30.5% of all residential trip ends generated in the county.

It should be noted that the traffic generated includes trips to and from work and, more particularly, residents who work at a business within the county (i.e., internal commutes).

■ **Nonresidential Trip Generation**

Calculating traffic generated by businesses located in Pike County is more problematic than residential trips because there is no breakdown of types of businesses in the county that is readily available. In addition, while employment forecasts have been made in terms of the number of jobs, there is no data available for future floor areas, much less by detailed type of use.

The alternative is to view nonresidential traffic generation on a broad ‘average’ basis. For this, there is data available from ITE for a number of individual uses relating to the total number of trips generated per employee. These trips, of course, include not only trips taken by the employees (to/from work, lunch, etc.) but also customers and others that are attracted to the use, deliver to, serve it, or are served by it in some way.

The Average Daily Traffic (ADT) numbers on the following table, therefore, are calculated by dividing all trips to a use—employees, customers, deliveries to or from, etc.—by the number of employees alone. Since there is more data available for the average number of employees per 1,000 square feet of floor area, it enables a determination of the average total trips generated by the use by the same floor area (and thus the number per ‘1’ square foot of floor area for impact fee calculations).

The table on the following page shows the ‘trip ends per employee’ per 1,000 square feet of floor area for those uses for which impact fees are commonly collected and for which the data is available.

Overall, the average trip generation rate of all uses shown on the following table is 4.21 trips per employee for ‘industrial’ uses and 23.95 for all ‘commercial’ uses. The ‘industrial’ category includes such uses as manufacturing and assembly, storage, and transportation of goods; the ‘commercial’ category includes all sales and service uses such as stores, offices, motels, banks, amusements and private institutions. The last column shows the average rate for all ‘commercial’ uses listed, as opposed to the ‘industrial’ uses shown at the top of the column on its top left.

Although the ‘overall’ averages are useful for projecting total traffic generation, impact fees for particular uses will reflect the actual average trip generation rate for the specific use.

Table B-5: ITE Trips-per-Employee Data

ITE Category	ITE CODE	LAND USE	Trip Ends per Employee	Average Trip Ends by Category	Average Trip Ends All Commercial
Industrial (100-199)	110	General Light Industrial	3.10	4.21	23.95
	140	Manufacturing	2.51		
	150	Warehousing	5.05		
	156	High-Cube Hub Warehouse	6.77		
	180	Specialty Trade Contractor	3.63		
Lodging (300-399)	310	Hotel or Conference Motel	14.34	13.58	
	320	Motel	12.81		
Recreational (400-499)	445	Movie Theater	55.12	38.03	
	480	Amusement Park	24.02		
	491	Racquet/Tennis Club	45.71		
	495	Recreational Community Center	27.25		
Institutional (500-599)	560	Church/Place of Worship	20.02	33.05	
	565	Day Care Center	21.38		
	566	Cemetery	57.75		
Medical (600-699)	610	Hospital	3.77	6.99	
	620	Nursing Home	3.31		
	630	Clinic	13.90		
Office (700-799)	710	General Office Building	3.33	4.27	
	714	Corporate Headquarters Building	2.31		
	715	Single-Tenant Office Building	3.85		
	720	Medical-Dental Office Building	8.71		
	760	Research and Development Center	3.37		
	770	Business Park	4.04		
Retail (800-899)	812	Building Materials and Lumber Store	24.77	30.21	
	814	Variety Store	95.59		
	815	Free-Standing Discount Store	24.63		
	816	Hardware/Paint Store	27.69		
	817	Nursery (Garden Center)	21.83		
	818	Nursery (Wholesale)	23.40		
	820	Shopping Center	17.42		
	826	Strip Retail Plaza	25.63		
	840	Automobile Sales (New)	11.20		
	843	Auto Parts Store	33.73		
	848	Tire Store	16.78		
	850	Supermarket	43.86		
	857	Discount Club	32.21		
	861	Sporting Goods Superstore	4.44		
	881	Pharmacy/Drugstore w/drive-through	69.17		
	890	Furniture Store	10.93		
Services (900-999)	912	Drive-in Bank	32.73	25.19	
	932	High-Turnover (Sit-Down) Restaurant	21.26		
	934	Fast-Food Restaurant	44.52		
	941	Quick Lubrication Vehicle Shop	16.00		
	943	Automobile Parts & Service	11.44		

Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers, where survey results given for key land uses.

The next table provides a breakdown between commercial and industrial employment in the county today and projected to 2050.

The table is based on the numbers of employees calculated for each 'commercial' land use category and each 'industrial' category, taken from the employment projections in Appendix A. The focus is on the 'private building related' employment figures because these categories are assessed impact fees, as opposed to the 'not building related' and 'government' employment categories.

Table B-6: Private Building-Related Employment 2025-2050

	2025 Building Related Employees	2050 Building Related Employees	Change
Retail Trade	569	897	328
Information	40	34	-6
Finance & Insurance	218	181	-37
Real Estate	550	954	404
Professional & Technical Services	272	486	214
Management of Companies	25	38	13
Administrative & Waste Services	458	914	456
Educational Services	173	351	178
Health Care & Social Assistance	443	700	257
Arts, Entertainment & Recreation	120	233	113
Accommodation & Food Services	200	327	127
Other Private Services	536	733	197
Total Commercial	3,604	5,848	2,244
Utilities	17	24	7
Construction	1,170	1,711	541
Manufacturing	498	1,465	967
Wholesale Trade	273	1,913	1,640
Transportation & Warehousing	170	230	60
Total Industrial+Utility	2,128	5,343	3,215

Lastly, the following table calculates the total number of trip ends that will be generated by new nonresidential growth in future traffic on Pike County's roads, and the percentage of that growth in relation to total trip ends on the county's roads in 2050 (43.7%). The table provides a breakdown between commercial and industrial employment in the county and calculates trip ends generated by each.

We know from the 2010 Census (the latest data available) how many people living in Pike County also worked in Pike County based on commuting patterns. That percentage (26.10%) is assumed to be the current percentage of internal commutes also. These 'internal commutes' are included in the residential trip generation calculations and so are subtracted from the nonresidential count in order to avoid 'double counting'.

Table B-7: Nonresidential Trip Generation - 2025-2050 New Growth Increase

	2025 Employees	2025 Trip Ends	2050 Employees	2050 Trip Ends	2025-2050 Increase	Percent New Growth Trip Ends
Commercial	3,604	86,316	5,848	140,060	53,744	
Industrial + Utility	2,128	8,959	5,343	22,494	13,535	
Total	5,732	95,275	11,191	162,554	67,279	
Less: Internal Commutes at: 26.10%		(19,580)		(28,179)	(8,599)	
Net Nonres Trip Ends		75,695		134,375	58,680	
						43.7%

The table above shows the number of trip ends currently generated by Pike County businesses based on 2025 employment data (from Appendix A). The same calculations are made for the year 2050 based on projected employment in the county, and the difference between 2025 and 2050 represents trip ends generated by future nonresidential growth and development.

From the total of all nonresidential trips, the number of trips to/from work generated by county residents is deducted, as discussed above.

The net total of all trips generated exclusively by county businesses (134,375) comes to 43.7% of all such nonresidential trip ends in 2050.

The results of the residential and nonresidential trip generation analyses are combined on the Summary table at the beginning of this Appendix for an overall calculation of new growth's share of future traffic generated by Pike County residents and businesses. From these figures, as discussed above, pass-by and diverted trip ends are then deleted to determine primary trip ends, which more closely relates to vehicles on the road and thus contribute to traffic congestion.

■ Terminology

This Methodology uses the term 'average daily traffic' (ADT) for a weekday, which is defined by ITE as the 'average weekday vehicle trip ends', which are "the average 24-hour total of all vehicle trips counted from a study site from Monday through Friday."

Additionally, ITE defines a 'trip or trip end' as "a single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site. For trip generation purposes, the total trip ends for a land use over a given period of time are the total of all trips entering plus all trips exiting a site during a designated time period".

Lastly, ITE defines 'average trip rate' as "the weighted average of the number of vehicle trips or trip ends per unit of independent variable (for example, trip ends per occupied dwelling unit or employee) using a site's driveway(s). The weighted average rate is calculated by dividing the sum of all independent variable units where paired data is available. The weighted average rate is used rather than the average of the individual rates because of the variance within each data set or generating unit. Data sets with a large variance will over-influence the average rate if they are not weighted.

Appendix C: Adjustments and Credits

■ Cost Adjustments

Calculations related to impact fees are made in terms of the 'present value' of past and future amounts of money, including project cost expenditures and credits for future revenue.

The Georgia Development Impact Fee Act defines 'present value' as "the current value of past, present, or future payments, contributions or dedications of goods, services, materials, construction, or money." This section describes the methodologies used to make appropriate adjustments to capital improvement project cost figures, both past and future, to convert these costs into current dollars as required by the Impact Fee Act.

Calculations for present value (PV) differ when considering past expenditures versus future costs. In both cases, however, the concept is the same—the 'actual' expenditure made or to be made is adjusted to the current year using appropriate rates—an inflation rate for past expenditures and a discount rate for future costs that have been inflated to the year of expenditure. In essence, the present value is considered in light of the value of money as it changes over time because of inflation.

Past Expenditures

Past expenditures are considered in impact fee calculations only for previous expenditures for projects that created excess capacity for new development and are being recouped. An expenditure that was made in the past is converted to PV using the inflation rate of money—in this case the Consumer Price Index (CPI). Although this approach ignores the value of technological innovation (i.e., better computers are available today for the same or lower historical prices) and evolving land prices (often accelerated beyond inflation by market pressures), the approach best captures today's value of the money actually spent. For instance, it is not important that you can buy a better computer today for the same price that was paid five years ago; what is important is the money was spent five years ago and what that money would be worth today had it been saved instead of spent.

Future Cost Projections

An important consideration in estimating project costs for impact fee collections is that the State law provides that all costs be calculated in 'present value', which the law defines as the "current value of past, present, or future payments, contributions or dedications of goods, services, materials, construction, or money". That is, what will a project cost in the year it is anticipated to occur given future inflation, but calculated in today's dollars?

In order to determine the 'present value' of a project expenditure that will be made in the future, the future cost projection of the expenditure is determined. To calculate the 'present value' of any project cost, two figures are needed—the future cost of the project anticipated in the year the expenditure will be made, and the Discount Rate. Given the current cost of a project, that cost is first inflated into the future to the target expenditure year to establish the estimated future cost when the expenditure will be made. The future cost is then deflated to the present using the Discount Rate, which establishes the 'present value' for the project in current dollars. These two formulas are:

$$\text{Future Cost} = \text{Current Cost} \times (1 + \text{Inflation Rate})^{\text{Year of Expenditure} - \text{Current Year}}$$

$$\text{Present Value} = \text{Future Cost divided by } (1 + \text{Discount Rate})^{\text{Current Year} - \text{Year of Expenditure}}$$

In this section, two important adjustments are discussed that are required to convert current costs into future cost figures, and then back into current dollars.

First, an appropriate cost inflator is identified. This adjustment factor is important in determining the future cost of a project, based on current cost estimates. The cost inflator may be based on anticipated inflation in construction or building costs, or on anticipated inflation in the value of money (for capital projects that do not include a construction component). In essence, costs increase over time. By identifying the appropriate inflation rate that is related to the type of project (building construction, project construction or non-construction), current cost estimates can be used to predict future costs in the year they are expected to occur.

The second cost adjustment is a deflator—the Discount Rate. Essentially, the Discount Rate is the interest rate that accrues to monies being held in escrow. That is, as impact fees are collected and 'saved up' over the years for future expenditure, they increase at the rate that the account is accruing interest. Having determined the inflated cost of a project at some future date, the cost in today's dollars can be reduced to the extent that interest will increase the funds on hand as they build up. This calculation determines how much money would need to be placed in the account today so that, with interest, it will grow to the amount needed for that future expenditure at that time. This is the Present Value of that future expenditure—i.e., the future cost in today's dollars.

Together, the inflated cost of a project to the year it is estimated to occur, minus the interest that will be accrued as the money is saved up, results in the 'current value' (the cost in today's dollars) as required by the Georgia Impact Fee Law. This process is referred to as the 'future cost projection' or the 'net present value', both of which have the same meaning.

Note that, since the interest is gained at the stated rate each year, one could calculate how much interest would accrue each year as the account grows. Alternately, one could apply $\frac{1}{2}$ of the actual rate to the entire project cost, raised by the power of the number of years, as the 'average' future total funds on hand for the project. Thus, the so-called 'discount rate' is used to inflate a project's cost today to what the cost would be in the year the money is expected to be expended. Either approach—year-by-year or averaged at 50% of the rate—would produce the same result mathematically.

■ Cost Inflatoms

Three different cost inflators are used in the impact fee calculations, based on the type of project being considered. For projects that require construction of a structure (such as a fire station expansion), a 'building cost inflator' is used. For infrastructure projects, a 'construction cost inflator' is used as the appropriate inflation rate. For all non-construction types of projects (such as a fire truck or park land), an inflation rate is used that is based on the Consumer Price Index. These different types of inflators are discussed below.

Engineering News Record's Cost Indexes

ENR publishes both a Building Cost Index (BCI) and a Construction Cost Index (CCI) that are widely used in the construction industry. The indexes are based on annual cost increases of various construction materials and applicable labor rates and are calibrated regionally. For calculation of the CCI and the BCI, ENR sets its indexes in 1913 at 100.

Building Cost Inflator

The inflator for future construction costs for buildings is based on ENR's Building Cost Index (BCI) for each year from 2014 through 2024 and is calculated in the same manner as described above for the Construction Cost Inflator. Table C-1 shows the results.

Table C-1: Building Cost Inflator - BCI

Year	Amount	BCI*		Effect of Inflation	
		1913=100	2014=1.0	BCI	Avg. Rate =
					3.8445730%
2014	\$ 100,000.00	4,076.81	1.000000	\$ 100,000.00	\$ 100,000.00
2015		4,108.05	1.007662	\$ 100,766.18	\$ 103,844.57
2016		4,126.72	1.012242	\$ 101,224.24	\$ 107,836.95
2017		4,278.39	1.049446	\$ 104,944.63	\$ 111,982.82
2018		4,408.94	1.081468	\$ 108,146.79	\$ 116,288.09
2019		4,523.59	1.109591	\$ 110,959.08	\$ 120,758.87
2020		4,615.43	1.132118	\$ 113,211.78	\$ 125,401.53
2021		5,335.09	1.308642	\$ 130,864.23	\$ 130,222.68
2022		6,314.94	1.548991	\$ 154,899.11	\$ 135,229.19
2023		6,302.02	1.545822	\$ 154,582.16	\$ 140,428.17
2024		6,450.40	1.582217	\$ 158,221.71	\$ 145,827.04
				\$ 1,337,819.91	\$ 1,337,819.91

* Building Cost Index, Atlanta Region.
Source: Engineering News Record, Annual Average Indices.

Table C-1 assumes a building construction project that cost \$100,000 in 2014, and how much the same project would cost in each subsequent year due to inflation using the Building Cost Index published by ENR for the Atlanta region.

Setting the 2014 Building Cost Index (BCI) at '1.0,' the increase in the BCI as a multiple of 2014 is also shown on the table. The equivalent cost of the same project in each subsequent year is calculated by multiplying the BCI multiplier times \$100,000. In 2015, for instance, the same building project would have cost a few pennies more than \$100,766 due to inflation in construction materials and personnel costs.

When the total for all such projects is summed for the 2014-2024 period (\$1,337,819.91), the equivalent average annual rate of increase is calculated as the percentage that would produce the same total. This percentage is used in the text of this report as the applicable average inflator for building construction projects that will begin in future years.

Construction Cost Inflator

The inflator for future construction costs for other types of projects is based on ENR's Construction Cost Index.

Table C-2 presents a calculation of the annual average rate of increase reflected in the cost of construction of a capital project other than a building. (These would include such projects as road improvements, trails, baseball fields and other projects that do not involve buildings.) For this analysis, the 2014-2024 ten-year period is also used as a base time period for an estimate of average future construction cost increases due to inflation in labor and materials costs. The Construction Cost 10-year average inflation rate is calculated in the same manner as described above for the Building Cost Inflator.

Table C-2: Construction Cost Inflator - CCI

Year	Amount	CCI*		Effect of Inflation	
		1913=100	2014=1.0	CCI	Avg. Rate =
					2.70512025%
2014	\$ 100,000.00	6,147.52	1.000000	\$ 100,000.00	\$ 100,000.00
2015		6,245.74	1.015977	101,597.68	\$ 102,705.12
2016		6,277.14	1.021084	102,108.40	\$ 105,483.42
2017		6,433.18	1.046468	104,646.81	\$ 108,336.87
2018		6,592.98	1.072461	107,246.13	\$ 111,267.51
2019		6,681.50	1.086860	108,686.01	\$ 114,277.43
2020		6,750.41	1.098070	109,807.02	\$ 117,368.78
2021		7,414.97	1.206172	120,617.19	\$ 120,543.74
2022		8,361.71	1.360177	136,017.66	\$ 123,804.59
2023		8,252.72	1.342446	134,244.62	\$ 127,153.66
2024		8,395.23	1.365629	136,562.92	\$ 130,593.32
				\$ 1,261,534.44	\$ 1,261,534.44

* Construction Cost Index, Atlanta Region.
Source: *Engineering News Record*, Annual Average Indices.

CPI Inflator

For projects that do not involve construction, only the future value of money needs to be considered (without regard to inflation in labor or materials costs). For this calculation, the Consumer Price Index (CPI) is used, assuming past experience will continue into the foreseeable future.

Table C-3 shows the CPI figures for every year since 1982, when the current CPI was first calibrated. By 2024 the CPI had risen considerably over the 1982 CPI. The first column under the 'CPI' heading on Table C-3 shows the average annual CPI figures. Using 2024 as the base (2024=1.0), the second column under 'CPI' on the table shows the multipliers that would convert an amount of money spent in each year into current present value dollars.

Table C-3: Non-Construction Cost Inflation - CPI

Year	Amount	CPI*		Present Value: CPI	Long Term Inflation =	10-Year Inflation =
		1982-84=100	2024=1.0			
Year	Amount	1982-84=100	2024=1.0	Present Value: CPI	Long Term Inflation =	10-Year Inflation =
					2.68667405%	
1982	\$ 10,000	96.50	3.03269	\$ 32,488.60	\$ 30,450.31	
1983	\$ 10,000	99.60	2.93830	\$ 31,477.41	\$ 29,653.61	
1984	\$ 10,000	103.90	2.81670	\$ 30,174.69	\$ 28,877.76	
1985	\$ 10,000	107.60	2.71984	\$ 29,137.08	\$ 28,122.21	
1986	\$ 10,000	109.60	2.67021	\$ 28,605.38	\$ 27,386.42	
1987	\$ 10,000	113.60	2.57619	\$ 27,598.15	\$ 26,669.89	
1988	\$ 10,000	118.30	2.47384	\$ 26,501.69	\$ 25,972.11	
1989	\$ 10,000	124.00	2.36012	\$ 25,283.47	\$ 25,292.58	
1990	\$ 10,000	130.70	2.23913	\$ 23,987.38	\$ 24,630.83	
1991	\$ 10,000	136.20	2.14871	\$ 23,018.72	\$ 23,986.39	
1992	\$ 10,000	140.30	2.08592	\$ 22,346.04	\$ 23,358.81	
1993	\$ 10,000	144.50	2.02529	\$ 21,696.54	\$ 22,747.66	
1994	\$ 10,000	148.20	1.97473	\$ 21,154.86	\$ 22,152.49	
1995	\$ 10,000	152.40	1.92031	\$ 20,571.85	\$ 21,572.90	
1996	\$ 10,000	156.90	1.86523	\$ 19,981.84	\$ 21,008.47	
1997	\$ 10,000	160.50	1.82340	\$ 19,533.64	\$ 20,458.81	
1998	\$ 10,000	163.00	1.79543	\$ 19,234.05	\$ 19,923.53	
1999	\$ 10,000	166.60	1.75663	\$ 18,818.43	\$ 19,402.25	
2000	\$ 10,000	172.20	1.69951	\$ 18,206.45	\$ 18,894.62	
2001	\$ 10,000	177.10	1.65248	\$ 17,702.71	\$ 18,400.26	
2002	\$ 10,000	179.90	1.62676	\$ 17,427.18	\$ 17,918.84	
2003	\$ 10,000	184.00	1.59052	\$ 17,038.86	\$ 17,450.02	
2004	\$ 10,000	188.90	1.54926	\$ 16,596.88	\$ 16,993.46	
2005	\$ 10,000	195.30	1.49849	\$ 16,053.00	\$ 16,548.84	
2006	\$ 10,000	201.60	1.45166	\$ 15,551.34	\$ 16,115.86	
2007	\$ 10,000	207.34	1.41146	\$ 15,120.67	\$ 15,694.21	
2008	\$ 10,000	215.30	1.35927	\$ 14,561.57	\$ 15,283.59	
2009	\$ 10,000	214.54	1.36412	\$ 14,613.56	\$ 14,883.71	
2010	\$ 10,000	218.06	1.34211	\$ 14,377.73	\$ 14,494.30	
2011	\$ 10,000	224.94	1.30104	\$ 13,937.78	\$ 14,115.07	
2012	\$ 10,000	229.59	1.27466	\$ 13,655.19	\$ 13,745.77	
2013	\$ 10,000	232.96	1.25626	\$ 13,458.06	\$ 13,386.13	3.712374%
2014	\$ 10,000	236.74	1.23621	\$ 13,243.23	\$ 13,035.90	
2015	\$ 10,000	237.02	1.23474	\$ 13,227.53	\$ 12,694.83	\$ 13,882.74
2016	\$ 10,000	240.01	1.21936	\$ 13,062.73	\$ 12,362.68	\$ 13,385.81
2017	\$ 10,000	245.12	1.19393	\$ 12,790.27	\$ 12,039.23	\$ 12,906.66
2018	\$ 10,000	251.11	1.16546	\$ 12,485.32	\$ 11,724.24	\$ 12,444.67
2019	\$ 10,000	255.66	1.14472	\$ 12,263.13	\$ 11,417.48	\$ 11,999.22
2020	\$ 10,000	258.81	1.13077	\$ 12,113.66	\$ 11,118.76	\$ 11,569.71
2021	\$ 10,000	270.97	1.08003	\$ 11,570.11	\$ 10,827.85	\$ 11,155.57
2022	\$ 10,000	292.65	1.00000	\$ 10,712.79	\$ 10,544.55	\$ 10,756.26
2023	\$ 10,000	305.98	0.95646	\$ 10,246.32	\$ 10,268.67	\$ 10,371.24
2024	\$ 10,000	313.52	1.00000	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
1982-24	\$ 430,000			\$ 791,625.90	\$ 791,625.90	
2015-24	\$ 100,000			\$ 118,471.87	\$ 118,471.87	

*Consumer Price Index data is from the U. S. Department of Labor, Bureau of Labor Statistics.

Using an annual expenditure of \$10,000 as an example, the multipliers on Table C-3 yield the figures shown for the CPI on the table under the 'present value' heading. Cumulatively, the \$430,000 spent over the 1982-2024 period would have a total present value of \$791,625.90 in today's dollars. Considering the present value figures for the \$10,000 annual expenditures, an average annual inflation rate of almost 2.69% yields the same total amount over the 1982-2024 period.

The 42-year average of annual CPI change (the period of 1982-2024) shown on Table C-3 would be useful in estimating the present value (PV) of past expenditures but would not be the best indicator of future change because of the long timeframe covered. Looking only at the change in CPI for the 10 years from 2015 to 2024, an average annual inflation rate of a bit more than 3.71% (3.712374%) best captures the change over that period. This rate (compared to the 1982-2024 period) is assumed to be experienced 'on average' in future years and is used for inflator calculations for future non-construction expenditures where the value of money is the issue.

■ Other Fees and Charges

In addition to the net impact fees for each public facility category, there are two additional charges than can be assessed in an impact fee program. Based on the definition of 'system improvement costs', there are possible impact fee charges beyond the categories already discussed that are allowed under state law. These may be directly or indirectly related to the cost of capital projects and can include a fee for the administration of the impact fee program as well as a fee to recoup the cost to prepare the Capital Improvements Element. Specifically, DIFA allows for the collection of impact fees reflecting:

"administrative costs, provided that such administrative costs shall not exceed 3 percent of the total amount of the costs"

And, *"expenses incurred for qualified staff or any qualified engineer, planner, architect, landscape architect, or financial consultant for preparing or updating the capital improvement element"*.

Program Administration

A surcharge of 3%, the maximum allowable under state law, has been added to the subtotal of impact fees for the individual categories. The fees collected in this category can be used for all costs related to the administration of the impact fee program and are reported annually to the State just like the other service categories. Like any fee, this must have some rational and reasonable connection to the service rendered. Commonly, the administrative fee collected is used to offset some or all of the cost to handle impact fee calculations by the building permit staff, some or all of the cost for the finance department to process, record and distribute impact fees, and some or all of the cost for the management and oversight of the program by administrative staff, including site inspections when needed. In addition, a 1.5% surcharge for the recoupment of the cost to prepare the Capital Improvements Element has been added to the subtotal of the individual category impact fees in addition to the administration fee.

Glossary

The following terms used in this Report are based on those in the Georgia Development Impact Fee Act. Additional definitions of residential and nonresidential uses follow, based on the *Trip Generation Manual*, Institute of Transportation Engineers, 11th Edition (ITE).⁸ The residential and nonresidential land uses are those used in the public facility chapters and listed in the Impact Fee Schedule.

■ General Terms

Capital improvement: An improvement with a useful life of 10 years or more, by new construction or other action, which increases the service capacity of a public facility.

Capital Improvements Element: A component of a comprehensive plan adopted pursuant to Chapter 70 of the Development Impact Fee Act which sets out projected needs for system improvements during a planning horizon established in the comprehensive plan, a schedule of capital improvements that will meet the anticipated need for system improvements, and a description of anticipated funding sources for each required improvement.

Development: Any construction or expansion of a building, structure, or use, any change in use of a building or structure, or any change in the use of land, any of which creates additional demand and need for public facilities.

Development impact fee: A payment of money imposed upon development as a condition of development approval to pay for a proportionate share of the cost of system improvements needed to serve new growth and development.

Eligible facilities: Capital improvements addressed in this report, authorized by the Georgia Development Impact Act, include the following categories:

- Library Services
- Parks and Recreation
- Animal Control
- Fire Protection and EMS
- Sheriff's Office and E-911
- Roads, streets, and bridges

Impact cost: The proportionate share of capital improvements costs to provide service to new growth, less any applicable credits.

Impact fee: The impact cost plus surcharges for program administration and recoupment of the cost to prepare the Capital Improvements Element.

⁸ Where uncertainty exists or interpretation is needed, reference to the definitions in the County's Unified Development Code, or a source document such as the *North American Industrial Classification System* (from the U.S. Office of Management and Budget; latest edition available on the U.S. Census Bureau website), or a comprehensive dictionary (such as the *New Oxford American Dictionary* or *Webster's American Dictionary of the English Language*) may be helpful as an objective means of distinguishing among the types of land uses set out in the schedules.

Level of service: A measure of the relationship between service capacity and service demand for public facilities in terms of demand to capacity ratios or the comfort and convenience of use or service of public facilities or both.

Present value: The current value of past, present, or future payments, contributions or dedications of goods, services, materials, construction, or money.

Project improvements: Site improvements and facilities that are planned and designed to provide service for a particular development project and that are necessary for the use and convenience of the occupants or users of the project and are not system improvements. The character of the improvement shall control a determination of whether an improvement is a project improvement or system improvement and the physical location of the improvement on site or off site shall not be considered determinative of whether an improvement is a project improvement or a system improvement. If an improvement or facility provides or will provide more than incidental service or facilities capacity to persons other than users or occupants of a particular project, the improvement or facility is a system improvement and shall not be considered a project improvement. No improvement or facility included in a plan for public facilities approved by the governing body of the municipality or City shall be considered a project improvement.

Proportionate share: That portion of the cost of system improvements which is reasonably related to the service demands and needs of the project.

Rational nexus: The clear and fair relationship between fees charged and services provided.

Service area: A geographic area defined by a municipality, county, or intergovernmental agreement in which a defined set of public facilities provides service to development within the area. Service areas shall be designated on the basis of sound planning or engineering principles or both.

System improvement costs: Costs incurred to provide additional public facilities capacity needed to serve new growth and development for planning, design and construction, land acquisition, land improvement, design and engineering related thereto, including:

- the cost of constructing or reconstructing system improvements or facility expansions, including but not limited to the construction contract price, surveying and engineering fees, and
- related land acquisition costs (including land purchases, court awards and costs, attorneys' fees, and expert witness fees), and
- expenses incurred for qualified staff or any qualified engineer, planner, architect, landscape architect, or financial consultant for preparing or updating the capital improvement element, and
- administrative costs, provided that such administrative costs shall not exceed 3 percent of the total amount of the costs.

Projected interest charges and other finance costs may be included if the impact fees are to be used for the payment of principal and interest on bonds, notes, or other financial obligations issued by or on behalf of the county to finance the capital improvements element but such costs do not include routine and periodic maintenance expenditures, personnel training, and other operating costs. System improvement costs do not include routine and periodic maintenance expenditures, personnel training, and other operating costs.

System improvements: Capital improvements that are public facilities and are designed to provide service to the community at large, in contrast to "project improvements."

■ Residential Land Use Definitions

Land Use Category	ITE Code	Description
Single-Family Detached Housing	210	A single-family detached housing site includes any single-family detached home on an individual lot.
Single-Family Attached Housing (aka duplex or tri-plex)	215	Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.
Multi-Family Housing (Low-Rise)	220	Low-rise multi-family housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwellings and that have two or three floors (levels).
Multi-Family Housing (Mid-Rise)	221	Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, lobby, elevator, and a set of hallways.
Multi-Family Housing (High-Rise)	222	High-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual dwelling units is through an outside building entrance, lobby, elevator, and a set of hallways.
Affordable Housing	223	Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.
Off-Campus Student Apartment (Low-Rise)	225	An off-campus student apartment (low-rise) houses college or university students in structures with two or three floors of living space. The apartments are typically rented by the bedroom and most contain a common area or shared living space (living room, kitchen, dining area). Each bedroom typically has a private bath. These apartments are sometimes called independent bedroom apartments.
Off-Campus Student Apartment (Mid-Rise)	226	An off-campus student apartment (mid-rise) complex houses college or university students in structures with between four and 10 floors of living space. The apartments are typically rented by the bedroom and most contain a common area or shared living space (living room, kitchen, dining area). Each bedroom typically has a private bath. These apartments are sometimes called independent bedroom apartments.
Low-Rise Residential with Ground-Floor Commercial	230	This is a mixed-use multifamily housing building with two or three floors of residential living space and commercial space open to the public on the ground level. These facilities are typically found in dense multi-use urban and city center core settings.
Mid-Rise Residential with Ground-Floor Commercial	231	This is a mixed-use multifamily housing building with between four and 10 floors of residential space and commercial space open to the public on the ground level. These facilities are typically found in dense multi-use urban and city center core settings.
Mobile Home Park	240	A mobile home park generally consists of manufactured homes that are sited and installed on permanent foundations. The mobile home park typically includes community facilities such as a recreation room, swimming pool, and laundry facilities.
Senior Adult Housing—Single-Family	251	These are independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically a minimum of 55 years of age for at least one resident of the household. Residents in these communities are typically considered active and requiring little to no medical supervision. The dwelling units can be either detached or attached, and may include amenities such as a golf course, swimming pool, 24-hour security, transportation, and common recreation facilities.

Land Use Category	ITE Code	Description
Senior Adult Housing—Multi-Family	252	These are independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically a minimum of 55 years of age for at least one resident of the household. Residents in these communities are typically considered active and requiring little to no medical supervision. The dwelling units share both floors and walls with other units in the residential building.
Congregate Care Facility	253	This is an independent living development that provides centralized amenities such as dining, housekeeping, communal transportation, and organized social/recreational activities. Each individual dwelling unit often has a kitchenette. Assistance is typically available for housekeeping or minor household maintenance. Limited medical services (such as nursing and dental) may or may not be provided. The residents may contract additional medical services or personal assistance.
Assisted Living	254	An assisted living complex is a residential setting that provides either routine general protective oversight or assistance with activities necessary for independent living to people with mental or physical limitations. The typical resident has difficulty managing in an independent living arrangement but does not require nursing home care. Its centralized services typically include dining, housekeeping, social and physical activities, medication administration, and communal transportation. The complex commonly provides separate living quarters for each resident. Alzheimer's and ALS care are commonly offered at an assisted living facility; living quarter for these patients may be located separately from the other residents. Assisted care commonly bridges the gap between independent living and a nursing home. (See ITE 620 under nonresidential uses.) This use is sometimes known as personal care, residential care, or domiciliary care.
Continuing Care Retirement Community (CCRC)	255	This land use provides multiple elements of senior adult living. A CCRC enables a resident to transition in place from independent living to increased care as the medical needs of the resident change. Housing options may include various combinations of senior adult housing (both single-family and multi-family), congregate care, assisted living, and nursing homes. The community may also contain special services such as medical, dining, recreational, communal transportation, and some limited supporting retail facilities. A CCRC is usually a self-contained village.
Recreational Homes	260	This is either (1) a second home used by its owner periodically for recreation or (2) a home rented by its owner to others on a short-term or seasonal basis. Some sites are located within a resort that contains local services and complete recreational facilities. Recreational homes are distinguished from timeshares (ITE 265).
Timeshare	265	A timeshare is a development where multiple purchasers buy interests in the same property and each purchaser receives the right to use the facility for a period of time each year. The shared property is commonly a vacation or recreational condominium.
Residential Planned Unit Development	270	A residential planned unit development (PUD) is defined as containing any combination of residential land uses. These uses might also contain supporting services such as limited retail and recreational facilities.

■ Nonresidential Land Use Definitions

Land Use Category	ITE Code	Description
All Suites Hotel	311	Places of lodging for travelers and tourists that provide sleeping accommodations, a small restaurant and lounge, and a small amount of meeting space. Each suite includes a sitting room and separate bedroom. An in-room kitchen is often provided. <i>In contrast, see Hotel or Conference Hotel (ITE 310) and Motel (ITE 320).</i>
Amusement Park	480	An outdoor facility that contains rides, entertainment, refreshment stands, and picnic areas.
Auto Parts Store	843	Retail store specializing in the sale of automobile parts for maintenance and repair. The facilities within this land use are not typically equipped for on-site vehicle repair. <i>In contrast, see Automobile Parts and Service (ITE 943) and Tire Store (ITE 848).</i>
Automobile Parts and Service	943	Facilities specializing in the sale of automobile parts for do-it-yourself maintenance and repair including tires, batteries, oil, and spark plugs. A full array of on-site services for motor vehicles is also available. An automotive parts and service center may also sell automobile parts to retailers and repair facilities. <i>In contrast, see Auto Parts Store (ITE 843) and Tire Store (ITE 848).</i>
Automobile Sales (New)	840	Dealerships offering new cars for sale or lease. Automobile services, parts sales, and used car sales may also be available. Some dealerships also provide truck sales and service. <i>In contrast, see Automobile Sales, Used (ITE 841) and Recreational Vehicle Sales (ITE 842).</i>
Automobile Sales (Used)	841	Dealerships offering used cars for sale or lease. Automobile services and parts sales may also be available. Some dealerships also provide truck sales and service. <i>In contrast, see Automobile Sales, New (ITE 840) and Recreational Vehicle Sales (ITE 842).</i>
Building Materials and Lumber Store	812	A free-standing building that sells hardware, building materials and lumber. The lumber may be stored in the main building or in a yard or storage sheds. <i>In contrast, see Hardware/Paint Store (ITE 816).</i>
Business Park	770	A group of flex-type or incubator one- or two-story buildings served by a common roadway system. The tenant space is flexible and lends itself to a variety of uses, although a greater percentage of uses is typically industrial/warehousing. The rear side of the building is often served by a garage door. Tenants may be start-up companies or small mature companies that require a variety of space. The space may include offices, retail and wholesale stores, restaurants, recreational areas and warehousing, manufacturing, light industrial, or scientific research functions. <i>In contrast, see Office Park (ITE 750) and Research and Development Center (ITE 760).</i>
Car Wash & Detail Center	949	A facility that provides for the manual cleaning of the exterior of vehicles as well as interior car-detailing services. <i>In contrast, see Self-Service Car Wash (ITE 945).</i>
Cemetery	566	A place for burying the deceased, possibly including buildings used for funeral services, a mausoleum, and a crematorium.
Church/Place of Worship	560	A building in which public worship services are held. A church, synagogue or any other religious facility generally houses an assembly hall or sanctuary and may also house meeting rooms, classrooms, and, occasionally, dining, catering, or event facilities. Some may offer day care or extended care programs during the week.

Land Use Category	ITE Code	Description
Clinic	630	A facility that provides limited diagnostic and outpatient care but is unable to provide prolonged in-house medical and surgical care. A clinic may have a lab facility and supporting pharmacy. <i>In contrast, see Hospital (ITE 610) and Medical-Dental Office Building (ITE 720).</i>
Convenience Store with Gas	945	A facility with a co-located convenience store and gas station. The convenience store sells groceries and other everyday items that a person may need or want as a matter of convenience. Some stores offer limited seating. The gas station sells automotive fuels such as gasoline and diesel. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations. <i>In contrast, see Gasoline/Service Station (944) and Truck Stop (ITE 950).</i>
Corporate Headquarters Building	714	A single tenant office building that houses the corporate headquarters of a company or organization, which generally consists of offices, meeting rooms, space for file storage and data processing, an employee restaurant or cafeteria, and other service functions. This category includes a regional headquarters building of a state-wide or national company. <i>In contrast, see General Office Building (ITE 710) and Single-Tenant Office Building (ITE 715).</i>
Daycare Center	565	A facility that cares for preschool age children, normally during the daytime hours. The facility generally includes classrooms, offices, eating areas, and a playground. After-school care for school age children may also be provided.
Discount Club	857	A discount store or warehouse where shoppers pay a membership fee in order to take advantage of discounted prices on a wide variety of items such as food, clothing, household items, tires and appliances; many items are sold in large quantities or bulk.
Drive-in Bank	912	It contains banking facilities for both the motorist while in a vehicle, and someone who walks into the building. The drive-in lanes may or may not provide an automatic teller machine (ATM).
Fast Casual Restaurant	930	A sit-down restaurant with no (or very limited) wait staff or table service. A customer typically orders off a menu board, pays for food before the food is prepared, and seats themselves. The menu generally contains higher-quality, made-to-order food items with fewer frozen or processed ingredients than at a fast-food restaurant. Most patrons eat their meal within the restaurant, but a significant proportion of the restaurant sales can be carry-out orders. <i>In contrast, see Fast Food Restaurant (ITE 934), Fine Dining Restaurant (ITE 931), and High-Turnover (Sit Down) Restaurant (ITE 932).</i>
Fast Food Restaurant	934	Any fast-food restaurant with a drive-through window. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron generally orders from a menu board and pays before receiving the meal. <i>In contrast, see Fast Casual Restaurant, (ITE 930), Fine Dining Restaurant (931) and High-Turnover (Sit Down) Restaurant (ITE 932).</i>
Fine-Dining Restaurant	931	A full-service eating establishment with a typical duration of stay of at least 1 hour. A fine dining restaurant generally does not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires a reservation and is generally not part of a chain. A patron commonly waits to be seated, is served by wait staff, orders from a menu and pays after the meal. Some sites have lounge or bar facilities (serving alcoholic beverages), but meal service is the primary draw to the restaurant. <i>In contrast, see Fast Casual Restaurant (930), Fast Food Restaurant (ITE 934), and High-Turnover (Sit Down) Restaurant (ITE 932).</i>

Land Use Category	ITE Code	Description
Free-Standing Discount Store	815	A retail store that generally offers centralized cashiering and sells products that are advertised at discount prices. Discount stores offer a variety of customer services and typically maintain long store hours 7 days a week. The stores included in this land use are often the only ones on the site but they can also be found in mutual operation with a related or unrelated garden center and/or service station. A free-standing discount store can also be found on a separate parcel within a retail complex. <i>In contrast, see Variety Store (ITE 814).</i>
Furniture Store	890	A full-service retail facility that specializes in the sale of furniture and often carpeting. A furniture store is generally large and may include storage areas. Both traditional retail furniture stores and warehouse stores with showrooms are included in this category. Although some home accessories may be sold, a furniture store primarily focuses on the sale of pre-assembled furniture. A majority of items sold at these facilities are ordered for delivery.
Gasoline/Service Station	944	A gasoline/service station where the primary business is the fueling of motor vehicles. The sites included generally have a small building (less than 2,000 gross square feet) that houses a cashier and limited space for motor vehicle maintenance supplies and general convenience products. Service stations may also have ancillary facilities for servicing and repairing motor vehicles, as well as a car wash. <i>In contrast, see Convenience Store with Gas (ITE 945) and Truck Stop (ITE 950).</i>
General Light Industrial	110	A free-standing facility with minimal office space devoted to a single industrial use, but having an emphasis on activities other than manufacturing. Typical light industrial activities include printing, material testing, and assembly of data processing equipment. <i>In contrast, see Manufacturing (ITE 140).</i>
General Office Building	710	An office building greater than 10,000 square feet and where affairs of a business, commercial or industrial organization, professional person or firm are conducted. The building is designed to contain multiple tenants that can include, as examples, professional services, insurance companies, investment brokers, banking institutions, a restaurant, or other service retailers. <i>In contrast, see Business Park and Corporate Headquarters Building, above, and Medical-Dental Office Building, Office Park, Research and Development Center, and Single-Tenant Office Building)</i>
Hardware/Paint Store	816	A free-standing building that sells hardware and paint supplies. <i>(In contrast, see Building Materials and Lumber Store, above.)</i>
High Cube Warehouse		A high-cube warehouse (HCW) is a building used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. The warehouse typically has a ceiling height of 24 feet or more and has a high level of on-site automation and logistics management. The warehouse can be free-standing or located in an industrial park. The amount of office/employee welfare space is typically an insignificant portion of the overall building square footage
High Cube Parcel Hub Warehouse	156	A high-cube warehouse (HCW) that serves as a regional and local freight-for-warder facility for time sensitive shipments via airfreight and ground carriers. A site can also include truck maintenance, washing, or fueling facilities. Some limited assembly and repackaging may occur within the facility. <i>In contrast, see High-Cube Warehouse, Fulfillment (ITE 155), High-Cube Warehouse, Short-Term (ITE 154) and Warehousing (150).</i>

Land Use Category	ITE Code	Description
High-Cube Warehouse, Fulfillment	155	A high-cube warehouse (HCW; see footnote) with either a sort or non-sort facility. A sort facility is a fulfillment center that ships out smaller items, requiring extensive sorting, typically by manual means. A non-sort facility is a fulfillment center that ships large box items that are processed primarily with automation rather than through manual means. Some limited assembly and repackaging may occur within the facility. <i>In contrast, see High-Cube Parcel Hub Warehouse (ITE 156), High-Cube Warehouse, Short-Term (ITE 154) and Warehousing (ITE 150).</i>
High-Cube Warehouse, Short-Term	154	A high-cube warehouse (HCW; see footnote) that is a distribution facility for the movement of large volumes of freight with only short-term storage of products. Some limited assembly and repackaging may occur within the facility. <i>In contrast, see High-Cube Parcel Hub Warehouse (ITE 156), High-Cube Warehouse, Fulfillment (ITE 155) and Warehousing (ITE 150).</i>
High-Turnover (Sit-Down) Restaurant	932	Sit-down, full-service eating establishments with a typical duration of stay of 60 minutes or less. This type of restaurant is usually moderately priced, frequently belongs to a restaurant chain, and is commonly referred to as casual dining. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours a day. These restaurants typically do not accept reservations. A patron commonly waits to be seated, is served by wait staff, orders from a menu, and pays after the meal. Some facilities offer carry-out for a small proportion of its customers. Some facilities may also contain a bar area for serving food and alcoholic drinks. <i>In contrast, see Fast Casual Restaurant (ITE 930), Fast Food Restaurant (934), and Fine Dining Restaurant (ITE 931).</i>
Hospital	610	Any institution where medical or surgical care and overnight accommodation is given to nonambulatory and ambulatory patients. <i>In contrast, see Clinic (ITE 630) and Medical-Dental Office Building (ITE 720).</i>
Hotel or Conference Hotel	310	A place of lodging for travelers and tourists that provides sleeping accommodation and supporting facilities such as a full-service restaurant, shops, cocktail lounge, meeting rooms, banquet room, and convention facilities. A swimming pool or another recreational facility such as a fitness room is also typically provided. <i>In contrast, see All-Suites Hotel (ITE 311) and Motel (ITE 320).</i>
Manufacturing	140	Facility where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to actual production of goods, a manufacturing facility typically has an office and may provide space for warehouse, research, and associated functions. <i>In contrast, see General Light Industrial (ITE 110).</i>
Medical-Dental Office Building	720	A facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical or surgical care. One or more private physicians or dentists generally operate this type of facility. <i>In contrast, see Clinic (ITE 630) and General Office Building (ITE 710).</i>
Motel	320	A place of lodging for travelers and tourists that provides sleeping accommodation and provides little or no meeting space and few supporting facilities. Exterior corridors accessing rooms (immediately adjacent to a parking lot) is common for a motel. <i>In contrast, see All Suites Hotel (ITE 311) and Hotel or Conference Hotel (ITE 310).</i>
Movie Theater	445	A building where movies are screened for public entertainment. A theater includes a lobby, refreshment area, and audience seating for each movie screen.
Nursery (Garden Center)	817	A free-standing building with an outside storage area for planting or landscape stock that primarily serves the general public. Some have large greenhouses and offer landscaping services. Most have office, storage, and shipping facilities. <i>In contrast, see Nursery (Wholesale), ITE 818.</i>

Land Use Category	ITE Code	Description
Nursery (Wholesale)	818	A free-standing building with an outside storage area for planting or landscape stock that primarily serves contractors and suppliers. Some have large green-houses and offer landscaping services. Most have office, storage, and shipping facilities. <i>In contrast, see Nursery (Garden Center), ITE 817.</i>
Nursing Home	620	A facility whose primary function is to provide 24-hour per day care for people unable to care for themselves. The term is applicable not only to rest homes, but also to chronic care and convalescent homes. Assisted living and continuing care retirement communities can be included in this category.
Office Park	750	General office buildings and support services, such as banks, restaurants, and service stations, arranged in a park- or campus-like atmosphere. <i>In contrast, see Business Park (ITE 770) and Research and Development Center (760).</i>
Pharmacy/Drugstore – no drive through	880	A retail facility that primarily sells prescription and non-prescription drugs. A pharmacy/drugstore also typically sells cosmetics, toiletries, medications, stationery, personal care products, limited food products, and general merchandise.
Pharmacy/Drugstore – with drive through	881	A pharmacy/drugstore (see above) with a drive-through window.
Private Elementary School	520	A privately owned, state accredited school that serves students attending kindergarten through fifth or sixth grade.
Private High School	534	A privately owned, state accredited school that serves students who have completed middle school / junior high school.
Private Middle School (Junior High)	522	A privately owned, state accredited school that serves students who have completed elementary school and have not yet entered high school.
Quick Lubrication Vehicle Shop	941	A business where the primary activity is to perform oil change services for vehicles. Other ancillary services may include preventive maintenance, such as fluid and filter changes. Automobile repair service is generally not provided. <i>In contrast, see Automobile Parts & Service (ITE 943).</i>
Racquet/Tennis Club	491	A membership-based indoor or outdoor facility that primarily caters to racquet sports (tennis, racquetball, pickle ball, handball, squash), and may include ancillary facilities such as whirlpools, saunas, weight rooms, snack bars, small retail stores, and daycare.
Recreational Community Center	495	A stand-alone facility similar to and including YMCAs. These facilities often include classes and clubs for adults and children, a day care or nursery school, meeting rooms and other social facilities, swimming pools and whirlpools, saunas, tennis, racquetball, handball, pickle ball, basketball and volleyball courts; outdoor athletic fields/courts, exercise classes, weightlifting and gymnastics equipment, locker rooms, and a restaurant or snack bar. Public access is typically allowed and a membership fee may be charged.
Recreational Vehicle (RV) Sales	842	A free-standing facility that specializes in the sales of new RVs. Recreational vehicle services, parts and accessories sales, and substantial used RV sales may also be available. Some RV dealerships may also include boat sales and servicing. <i>In contrast, see Automobile Sales, New (ITE 840) and Automobile Sales, Used (ITE 841).</i>
Research & Development Center	760	A facility or group of facilities devoted almost exclusively to research and development activities. While they may also contain offices and some light fabrication areas, the primary function is that of scientific research and product or business development. <i>In contrast, see Office Park (ITE 750) and Business Park (ITE 770).</i>
Self-Service Car Wash	945	Facility that allows for the manual cleaning of vehicles by providing stalls for the driver to park and wash the vehicle. <i>In contrast, see Car Wash & Detail Center (ITE 949).</i>

Land Use Category	ITE Code	Description
Shopping Center	820	An integrated group of commercial establishments that is planned, developed, owned and managed as a unit and often has more than one anchor store. It is related to its market area in terms of size, location, and type of store. Individual stores, recreational facilities, movie theaters, office space, eating establishments and other uses located within a shopping center building are each charged the shopping center impact fee rate because the rate already assumes a wide variety of uses that are commonly found in shopping centers. <i>In contrast, see Strip Retail Plaza (ITE 822).</i>
Single-Tenant Office Building	715	A free-standing building exclusively occupied by a single business or company and generally contains its offices, meeting rooms, space for file storage and data processing, and possibly other service functions including an employee restaurant or cafeteria. <i>In contrast, see General Office Building (ITE 710), Corporate Headquarters Building (ITE 714), and Small Office Building (ITE 172).</i>
Small Office Building	712	A smaller-scale office building (generally, 10,000 square feet of gross floor area or less) that typically houses a single tenant. It is a location where affairs of a business, commercial or industrial organization, or professional person or firm are conducted. <i>In contrast, see General Office Building (ITE 710), Corporate Headquarters Building (ITE 714), and Single-Tenant Office Building (ITE 715).</i>
Specialty Trade Contractor	180	A business primarily involved in providing contract repairs and services to meet industrial or residential needs. This land use includes businesses that provide the following services: plumbing, heating and cooling, machine repair, electrical and mechanical repair, industrial supply, roofing, locksmith, weed and pest control, and cleaning.
Sporting Goods Superstore	861	A free-standing facility that specializes in the sale of athletic and outdoor-oriented merchandise. It typically offers a variety of customer services and centralized cashiering and maintains long store hours 7 days a week. Examples of items sold in these stores include outdoor/athletic clothing, sports equipment, shoes, and hunting/boating/fishing gear. Some may also carry automotive supplies.
Strip Retail Plaza	822	An integrated, open-air group of commercial establishments that is planned, developed, owned, and managed as a unit. Strip retail plazas are smaller than shopping centers and do not contain a supermarket or other major tenant "anchor". Individual establishments located within a strip retail plaza building are each charged the strip retail plaza impact fee rate because the rate already assumes a wide variety of uses that are commonly found in shopping centers. <i>In contrast, see Shopping Center (ITE 820).</i>
Supermarket	850	A free-standing retail store that sells a complete assortment of food, beverage, food preparation materials, and household products. A supermarket may also provide additional products and services such as a bakery, dry cleaning, floral arrangements, greeting cards, a limited-service bank, and a pharmacy. This category includes both traditional supermarkets and discount supermarkets.
Tire Store	848	Primary business is the sales and marketing of tires for automotive vehicles. Services offered by these stores usually include tire installation and repair, as well as other limited automotive maintenance or repair services as an accessory use. These stores generally do not contain large storage or warehouse areas. <i>In contrast, see Auto Parts Store (ITE 843) and Automotive Parts & Service (ITE 943).</i>
Truck Stop	950	A facility located adjacent to an interstate highway interchange that provides commercial vehicle fueling, space and supplies for self-service vehicle maintenance, and other services specific to the needs of truckers (e.g., showers, on-site truck parking area). The facility typically contains a convenience store, restroom facilities, and one or more restaurants (either fast-food or high-turnover sit-down). <i>In contrast, see Convenience Store with Gas (ITE 945) and Gasoline/Service Station (ITE 944).</i>

Land Use Category	ITE Code	Description
University		A 4-year university or college that may or may not offer graduate programs.
Variety Store	814	A retail store that sells a broad range of inexpensive items often at a uniform price. A variety store is commonly referred to as a “dollar store.” Items typically sold at a variety store include kitchen supplies, cleaning products, home office supplies, food products, household goods, decorations, and toys. <i>In contrast, see Free-Standing Discount Store (ITE 815).</i>
Veterinary Clinic	640	A facility that specializes in the medical care and treatment of animals. Includes the term “Animal Hospital.”
Warehousing	150	A facility that is primarily devoted to the storage of materials, but it may also include office and maintenance areas. <i>In contrast, see High-Cube Warehouse classifications (ITE 156, 155 and 154).</i>