



# Capital Improvements Element

## Fayette County Impact Fee Program

Including the following public facility category:

## Fire Protection

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**ROSS+associates**

urban planning & plan implementation  
in association with

**Hatley Plans LLC**

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## Introduction

The purpose of a Capital Improvements Element (CIE) is to establish where and when certain new public facilities are planned to be provided within a jurisdiction and the extent to which they may be financed through an impact fee program. A Capital Improvements Element is adopted as a chapter, or 'element', in a local government's Comprehensive Plan.

As required by the Georgia Development Impact Fee Act ("State Act" of "DIFA"), and defined by the Department of Community Affairs in its Development Impact Fee Compliance Requirements, the CIE must include the following for each capital facility category for which an impact fee will be charged:

- a **projection of needs** for the planning period (typically the next 20 years);
- the designation of **service areas** - the geographic area in which a defined set of public facilities provide service to development within the area;
- the designation of **levels of service** (LOS) - the service level that will be provided;
- a **schedule of improvements** ("Community Work Program") listing impact fee related projects and costs for at least the coming 5 years; and
- a description of **funding sources** anticipated for the planning period.

This document amends Fayette County's 2001 CIE and, as such, updates<sup>1</sup> the County's impact fee program that has been in place since that time. The sole public facility category that was included in the initial impact fee program—Fire Protection—is included and updated in this CIE.

### ■ Impact Fees Authorized

#### Impact Fees Authorized by the State

Impact fees are a form of revenue authorized and regulated in Georgia pursuant to O.C.G.A. §36-71-1 et seq., 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*, of the Georgia Administrative Code.

Under DIFA, a city or county can collect money from new development based on—and that does not exceed—that development's proportionate share of the cost to fund future public facilities that will be needed. Impact fees cannot be used to solve existing service deficiencies and must be spent only on public facilities that create new capacity to keep pace with the number of future residents and businesses as the county grows.

The key is that each 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 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.

Ultimately, and importantly, the services provided in the public facility categories for which impact fees are being charged must be the same for both the existing community and future growth.

<sup>1</sup> A 'CIE amendment' results in a new list of impact fee eligible capital projects. The CIE does not update the existing fee schedule to support funding of those projects; an amendment to the County's existing Development Impact Fee Ordinance would be required to change the fees.

### Categories for Assessment of Impact Fees

The chart below shows the public facility category and specific facility types that are eligible for impact fee funding under Georgia law and that are currently included in the County's impact fee program and thus addressed in this CIE. The service area—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.

**Table 1: Overview of Impact Fee Program - Public Facilities**

Public Facility Category	Eligible Facilities	Service Area	Level of Service Standard Based on ...
<b>Fire Protection</b>	Fire stations, fire trucks & auxiliary vehicles	Brooks, Woolsey, Tyrone & Unincorporated Area	Square footage of facilities and number of vehicles per day-night population

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

**Eligible Facilities**<sup>2</sup> under the Georgia Development Impact Fee Act (DIFA) are limited to capital items having a life expectancy of at least 10 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 program.

**Service Areas** are the geographic areas that the facilities serve, and the areas within which the impact fee can be collected. Monies collected in a service area for a public facility 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 assure 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.

### Intergovernmental Agreement

The County's fire protection services serve more than just the residents of the unincorporated county. Fayette County also provides these services to the jurisdictions of Brooks, Tyrone and Woolsey. DIFA specifies that Intergovernmental Agreements may be used to facilitate the collection of impact fees for system improvements. These agreements may be used to pool the resources of several local governments to build needed facilities. Fayette County has entered into the required intergovernmental agreement to allow the collection of impact fees for these services in the respective municipalities as well as in the unincorporated county.

<sup>2</sup> For a complete list of 'eligible facilities' allowed under DIFA, see 'public facilities' in the Glossary in this report. Fayette County's impact fee program, however, comprises only those listed above.

## ■ Forecasts

In order to accurately calculate the demand for future services in Fayette County, new growth and development must be quantified in future projections. These projections include forecasts for population, housing, and employment to the year 2045, which provide the baseline conditions from which the Level of Service (LOS) calculations are produced in the Fire Protection chapter.

This section presents a summary of the forecasts that have been identified as the most likely based on an analysis of past trends. For a more detailed description of the methodologies used in preparing the forecasts, see Appendix A included in this report.

**Table 3: Future Growth Projections**

Year	Fire Protection Service Area			
	Population	Housing Units	Employees	Day-Night Population
2023	63,460	23,264	18,545	82,005
2024	64,146	23,467	18,839	82,985
2025	64,840	23,760	19,426	84,266
2026	65,541	24,048	19,896	85,437
2027	66,249	24,230	20,366	86,615
2028	66,966	24,511	20,836	87,802
2029	67,690	24,786	21,306	88,996
2030	68,422	25,056	21,777	90,199
2031	69,162	25,323	22,292	91,454
2032	69,909	25,587	22,807	92,716
2033	70,665	25,849	23,323	93,988
2034	71,429	26,110	23,838	95,267
2035	72,202	26,484	24,354	96,556
2036	72,982	26,748	24,923	97,905
2037	73,772	27,015	25,492	99,264
2038	74,569	27,282	26,060	100,629
2039	75,376	27,550	26,629	102,005
2040	76,191	27,939	27,198	103,389
2041	77,014	28,218	27,817	104,831
2042	77,847	28,507	28,435	106,282
2043	78,689	28,804	29,055	107,744
2044	79,540	29,109	29,673	109,213
2045	80,400	29,416	30,292	110,692
<b>2023-2045 Increase</b>	<b>16,940</b>	<b>6,152</b>	<b>11,747</b>	<b>28,687</b>

Table 3 shows the projections used in calculating the maximum impact fees for county facilities in the Fire Protection service area (unincorporated area plus the Towns of Brooks, Tyrone and Woolsey).

The population figures represent a projection forward of past annual population figures (i.e., the past growth rate) reported by the Census Bureau through 2022.

To calculate the number of housing units anticipated in the future, the number of households (which equates to the number of occupied housing units) is calculated by dividing the most recently reported average household size in the county into the population forecasts, and then that is expanded to the total number of housing units by adding in vacant units.

Employment forecasts are based on Woods & Poole Economics, Inc.<sup>3</sup> data, as further described in the Appendix.

The number of housing units is used in calculating appropriate maximum impact fees for residential uses. The 'day-night' population (described on the next page) is used to calculate the maximum fee for all non-residential uses.

<sup>3</sup> Woods & Poole is a nationally recognized independent firm that specializes in long-term county economic data and demographic data projections. Their employment data include both full-time and part-time jobs by place of work.

Housing units are used to calculate impact fees for residential uses; however, fire protection services are provided to non-residential uses as well. As such, impact fees for this public service is also based on the projected day-night population, which combines the area's number of residents ('population') and businesses ('value-added' jobs<sup>4</sup>), because the services are available on a 24-hour basis. The use of the day-night population in impact fee calculations is based upon the clear rational nexus between persons and services demanded on a 24-hour basis.

The Fire & Emergency Services Department, for instance, protects one's house from fire whether or not the residents are at home, and protects stores and offices whether or not they are open for business. Thus, this 'day-night' population is a measure of the total services demanded of a 24-hour service provider facility and a fair way to allocate the costs of such a facility among all of the beneficiaries.

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<sup>4</sup> 'Value-added' jobs are jobs in employment categories that create new or expanded places of business and are subject to building permits and thus impact fee assessments. They exclude governmental jobs which are exempt from impact fee assessments, as well as construction and agricultural jobs since they are transitory or non-site specific in nature and don't require building permits; as such, they are not assessed impact fees.



## Fire Protection

### ■ Introduction

Fire protection is provided by the County through its Fire & Emergency Services Department. The department is a combination fire suppression and emergency medical response department. This chapter addresses only fire-related services; fire and EMS services cover different geographical areas (service areas), and EMS is not addressed in this CIE.

The following table shows the existing buildings and vehicles that are utilized in providing fire protection services. Because several of the buildings combine both fire and EMS functions, the square footage shown below is isolated to the building area used for fire protection services. For the Headquarters, no acreage is shown, as the building area is just a portion of the larger County Annex building. And for the Training Facility, no square footage is shown, because building construction is in the preliminary stage.

**Table 4: Existing Inventory of Fire Protection Facilities**

Description	Square Feet*	Acres	Fire Apparatus**							Support Vehicles***
			Engine	Quint	Tanker	Brush	Rescue	Squad	Battalion	
<i>Building Area</i>										
Headquarters	4,105									
Station 1	4,275	0.85	2							
Station 2	6,102	1.40		1	1			1		
Station 3	7,125	6.60	2					1		2
Station 4	7,667	5.00	1				1		1	
Station 5	4,275	3.80	1		1					
Station 6	5,600	2.50	2		1					
Station 7	5,700	3.85	1			1				4
Station 10	4,275	4.70		1				1		
Station 11	4,500	3.80	1							
Supply Depot	6,120	2.50								2
Training Facility		9.50								
<i>Total Square Feet</i>	<b>59,744</b>	<b>44.50</b>								
<i>Total Vehicles</i>			<b>10</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>8</b>

\* Portion of Fire/EMS Stations dedicated to fire protection services.

\*\* Heavy vehicles expected to be kept for 10 years or more in service. Includes frontline and reserve vehicles.

\*\*\* Other vehicles expected to be kept for 10 years or more in service. Includes rescue boats, specialized trailers, ATVs, UTVs and golf carts.

### ■ Service Area

The service area includes the unincorporated area of the county as well as the Towns of Brooks, Tyrone and Woolsey. This is the Fayette County Fire District. The Cities of Fayetteville and Peachtree City have their own fire departments and operate independently from the County system. All residents and employees in the service area have equal access to the benefits of fire protection services, which operate as a coordinated system with each station backing up other stations in the system.

## ■ Level of Service and Forecasted Demand

'Level of Service' (LOS) is the relationship between service capacity and service demand for public facilities. The LOS calculations are the basis for determining the facilities needed to serve new growth so that the adopted LOS is maintained for both existing and future development.

The LOS for fire protection services in Fayette County is determined two ways:

- 1) By utilizing a forward-looking approach that combines the existing inventory of **square footage** (59,744 on Table 4) and **fire apparatus** (23, as totaled from the figures on Table 4) currently used by the Fire and Emergency Services Department, with future system improvements planned to serve the Fire District.

These improvements include the construction of five additional fire stations with approximately 35,546 square feet in building area for fire protection (this figure does not include space for EMS functions that will also occupy the fire stations), the construction of a 9,500 square foot classroom building on the fire training facility site, as well as seven additional fire apparatus.

The future system improvements that are needed to support an increase in residents and employees help establish the adopted LOS because they – along with existing facilities and vehicles that are adequate to meet current needs – are deemed the total number sufficient to serve the service area population through 2045.

- 2) By basing the adopted LOS for **acreage** and **supporting vehicles** on the current number of each that serve the existing service area population. These are the inventories (from Table 4) of acreage occupied by Fire & Emergency Services buildings and supporting vehicles that currently serve residents and businesses. There are no specific future plans for land acquisition and purchase of supporting vehicles, and existing service levels and quality of services are adequate to meet current needs. Accordingly, these existing service levels establish the basis upon which the needs of future growth and development are to be met.

The adopted LOS for all facility types is calculated by dividing the totals of each system component type shown on Table 5 on the next page by the applicable day-night population: 2045 day-night population for the existing *and planned* building area and fire apparatus, and 2023 for existing acreage and supporting vehicles.

Day-night population is used as a measure in that fire protection is a 24-hour service provided continuously to both residences and businesses in the service area.

The LOS standard is then multiplied by the increase in day-night population to 2045 to produce the future demand for fire protection facilities created by future growth, as shown under 'New Growth Demand'.



Table 5: Level of Service and New Growth Demand

Facility	Service Area Population	Level of Service	Service Area Growth	New Growth Demand*
Existing & Planned Building Area (square feet)	2045 Day-Night Population	Square Feet per Day-Night Population	Day-Night Population Increase to 2045	Square Feet of Additional Floor Area Needed
104,790	110,692	0.9467	28,687	27,157
Existing & Planned Fire Apparatus	2045 Day-Night Population	Fire Apparatus per Day-Night Population	Day-Night Population Increase to 2045	Additional Fire Apparatus Needed
28	110,692	0.000253	28,687	7.26
Existing Support Vehicles	2023 Day-Night Population	Vehicles per Day-Night Population	Day-Night Population Increase to 2045	Additional Support Vehicles Needed
8	82,005	0.000098	28,687	2.80
Existing Acreage	2023 Day-Night Population	Square Feet per Day-Night Population	Day-Night Population Increase to 2045	Additional Acreage Needed
44.50	82,005	0.0005	28,687	15.57

\* Seven fire apparatus and two support vehicles will be added to the fleet at 100% impact fee eligibility.

### Impact Fee Eligibility

Based on the adopted Level of Service standards, Table 5 calculates the fire protection facilities that are needed to serve new growth in 2045. These 'New Growth Demand' figures show the actual number of the various facility types that are 'demanded' by new growth. New growth is defined and quantified as the increase in day-night population from 2023 to 2045.

Using a future-system approach to determine new growth demand for building area, only 27,157 square feet in additional building area is technically needed to serve future growth and is therefore impact fee eligible. This reveals a shortfall of 17,899 in planned square footage for fire protection services (based on subtracting 27,157 from the 45,056 total square feet planned for five future stations – not including space for EMS functions in those stations – and the classroom training building) that must be funded from sources other than impact fees.

The impact fee eligibility of each building project is based on the percentage of a floor area dedicated to fire protection services. For example, the total proposed floor area of Station 13 is 8,500, which includes space for both fire protection and EMS services. But the portion dedicated to fire protection services is expected to be approximately 6,635 or 75% of the total building. This is therefore the portion of the entire project that can be funded with impact fees.

For vehicles, new growth only requires 7.26 fire apparatus and 2.8 support vehicles. But since a portion of a vehicle cannot be acquired, the numbers are rounded to whole vehicles. As noted in the table, seven new fire apparatus and two support vehicles will be acquired. These numbers are slightly less than what is technically required to meet the demand for the future system and therefore allow the proposed vehicles to be 100% impact fee eligible. In addition, 15.57 additional acres can be purchased that are fully impact fee eligible.

## ■ Projects to Meet Future Demand

### Schedule for Implementation

Table 6 lists the capital project costs and a proposed schedule to provide the fire protection system improvements needed to attain the applicable Level of Service standards. The annual budget process, however, will determine and potentially revise the schedule since it is difficult to program all future improvements with complete certainty.

**Table 6: Schedule of Capital Projects to Meet Future Demand**

Year *	Capital Project	Number of Fire Apparatus	Number of Specialized Vehicles	Number of Acres**	Square Footage ***		
					Total Proposed	Impact Fee Eligible #	Impact Fee Eligible %
2025	Training Ctr. Classroom Bldg.(sq.ft.)				9,500	9,500	100%
2026	Fire Apparatus	1					100%
	Station 12/HQ (sq.ft.)				17,500	10,046	57%
2027							
2028							
2029	Specialized Vehicle		1				100%
2030	Acreage			3.89			100%
2031	Fire Apparatus	2					100%
	Station 13 (sq.ft.)				8,500	6,375	75%
2032							
2033							
2034	Specialized Vehicle		1				100%
2035	Acreage			3.89			100%
2036	Fire Apparatus	2					100%
	Station 14 (sq.ft.)				8,500	1,236	15%
2037							
2038							
2039							
2040	Acreage			3.89			100%
2041	Fire Apparatus	1					100%
	Station 15 (sq.ft.)				8,500	0	0%
2042							
2043							
2044	Acreage			3.89			100%
2045	Fire Apparatus	1					100%
	Station 16 (sq.ft.)				8,500	0	0%
<b>TOTALS:</b>		<b>7</b>	<b>2</b>	<b>15.57</b>	<b>61,000</b>	<b>27,157</b>	

\* Dates subject to change during the annual budgeting and "Annual CIE Update" processes.

\*\* Actual acreage needed per future fire station may deviate from these numbers. The total acreage overall that can be funded with impact fees, however, is 15.57 acres.

\*\*\* Note 1: 'Total Proposed' square footage of each fire station includes the total floor area, which includes space for both fire protection and EMS functions.

\*\*\* Note 2: 'Impact Fee Eligible #' square footage for each fire station is the space to be occupied solely for fire protection services. In addition, the floor area of future Station 12/HQ excludes the 4,105 of existing HQ space in the County Annex that is being replaced.

\*\*\* Note 3: 'Impact Fee Eligible %' percentages for building projects may change depending on actual project size, if different than the proposed project size. For each building project, the percent is calculated by dividing the amount of floor area for fire protection use by the total building size.

It is important to note that the 22,157 square feet required to meet the demands of new growth may be allocated across multiple projects as determined by the County. As shown on Tables 6 and 7, this allocation is shown across several projects that are anticipated to occur in a sequential fashion. However, the total impact fee eligible building area (27,157 square feet) may be distributed among future buildings in a different configuration than shown on the tables, as long as the total square footage to be funded with impact fees does not exceed 27,157 square feet. Note this may change impact fee eligibility ('Impact Fee Eligible %' figures): for each building project, the percent is calculated by dividing the amount of floor area for fire protection use by the total building size.

In addition, impact fee-eligible square footage may only be allocated across future projects that add building area, as follows:

- expansion of an existing building;
- construction of an additional building (such as another fire station to expand service); and/or
- replacement of an existing building with a larger building\*

\*Building replacement projects are impact fee eligible to the extent that the new building adds square footage to the existing building footprint. In other words, the impact fee eligible portion of the project is the difference in size between the existing and proposed replacement. Building replacement projects that result in the same or smaller building size are not impact fee eligible.

### **Project Costs to Meet Future Demand**

As shown on Table 7 on the next page, 'Total Cost Estimate (current \$)' figures are converted to 'New Growth's Share' dollars based on the percentage that each improvement is impact fee eligible. The Net Present Value (NPV) of the impact fee eligible cost estimates are calculated by increasing the current estimated costs to the target years on the table using Engineering News Record's (ENR) 10-year average building cost inflation (BCI) rate for future building area and the 10-year average CPI rate for the vehicles and acreage. All project costs are then reduced to the current year using the Net Discount Rate.

As noted on the previous page, the actual pace and timing proposed to meet future demand generated by population and business growth may occur sooner (or later), and the Annual CIE Update report can be updated to reflect these changes based on decisions made during the annual budgeting process.

**Table 9: Costs to Meet Future Demand for Fire Protection Facilities**

Year	Capital Project	Total Number Proposed	Total Cost Estimate (current \$)*	% Impact Fee Eligible	New Growth's Share	Net Present Value**
2025	Training Ctr. Classroom Bldg.(sq.ft.)	9,500	\$ 4,000,000.00	100.00%	\$ 4,000,000.00	\$ 4,055,755.67
2026	Fire Apparatus	1	\$ 860,000.00	100.00%	\$ 860,000.00	\$ 871,949.62
	Station 12/HQ (sq.ft.)	17,500	\$ 6,187,145.00	57.41%	\$ 3,551,863.17	\$ 3,626,385.05
2027						
2028						
2029	Specialized Vehicle	1	\$ 21,600.00	100.00%	\$ 21,600.00	\$ 22,512.96
2030	Acreage	3.89	\$ 116,752.00	100.00%	\$ 116,752.00	\$ 122,529.21
2031	Fire Apparatus	2	\$ 1,720,000.00	100.00%	\$ 1,720,000.00	\$ 1,817,607.93
	Station 13 (sq.ft.)	8,500	\$ 3,005,185.00	75.00%	\$ 2,253,888.75	\$ 2,382,207.82
2032						
2033						
2034	Specialized Vehicle	1	\$ 21,600.00	100.00%	\$ 21,600.00	\$ 23,303.17
2035	Acreage	3.89	\$ 116,752.00	100.00%	\$ 116,752.00	\$ 126,829.99
2036	Fire Apparatus	2	\$ 1,720,000.00	100.00%	\$ 1,720,000.00	\$ 1,881,406.15
	Station 14 (sq.ft.)	8,500	\$ 3,005,185.00	14.54%	\$ 437,031.55	\$ 478,177.83
2037						
2038						
2039						
2040	Acreage	3.89	\$ 116,752.00	100.00%	\$ 116,752.00	\$ 131,281.74
2041	Fire Apparatus	1	\$ 860,000.00	100.00%	\$ 860,000.00	\$ 973,721.84
	Station 15 (sq.ft.)	8,500	\$ 3,005,185.00	0.00%	\$ -	\$ -
2042						
2043						
2044	Acreage	3.89	\$ 116,752.00	100.00%	\$ 116,752.00	\$ 134,955.38
2045	Fire Apparatus	1	\$ 860,000.00	100.00%	\$ 860,000.00	\$ 1,000,969.38
	Station 16 (sq.ft.)	8,500	\$ 3,005,185.00	0.00%	\$ -	
			<b>\$ 28,738,093.00</b>		<b>\$ 16,772,991.47</b>	<b>\$ 17,649,593.74</b>

\*Source: Fayette County Fire and Emergency Services Department (including cost information for the previous construction of Station 4 and current prevailing rates for various vehicle types; a unit cost of \$30,0000 / acre is also utilized).

\*\* NPV for building area based on 10-year average annual Building Cost Index (BCI). NPV for vehicles and land are based on the 10-year average annual Consumer Price Index (CPI).

## 5-Year Community Work Program (CWP)

### NOTE:

- The capital projects listed below are those anticipated to be implemented in the *near-term* (between 2024/25 and 2029) **If a specific project in the body of this CIE is not included below, it is because implementation is expected to occur after 2029.**
- For a *complete list* of impact fee eligible capital projects, refer to Fire Protection chapter in this CIE.
- The *maximum number* of each type of impact fee eligible project is included in Fire Protection chapter of the CIE and cannot be exceeded by what is shown below or cumulatively in future Community Work Programs. (Any additional projects of the same type that may be desired must be funded from sources other than impact fees.)
- Impact fee funding* for each project cannot exceed the maximum percentage established below (see the Funding Source column) and as shown in the Fire Protection chapter of this CIE.

### 5-Year Community Work Program: Impact Fee Eligible Projects

Category	Project	2024/25	2026	2027	2028	2029	Responsible Party	Total Cost Estimate*	Funding Source**	Notes
Fire Protection	Training Center -- Classroom Building	✓					Fire & Emergency Services	\$ 4,055,756	Up to 100% Impact Fees; Local Taxation Sources	
Fire Protection	Fire Apparatus (1)		✓				Fire & Emergency Services	\$ 871,950	Up to 100% Impact Fees; Local Taxation Sources	
Fire Protection	Station 12/HQ		✓	✓			Fire & Emergency Services	\$ 3,626,385	Up to 57.41 % Impact Fees; Local Taxation Sources	% based on portion of proposed total building area to be used for fire services; % may change if actual total building area differs (See Fire Protection Chapter)
Fire Protection	Specialized Vehicle (1)					✓	Fire & Emergency Services	\$ 22,513	Up to 100% Impact Fees; Local Taxation Sources	

\* Net Present Value costs (rounded) based on information in Fire Protection chapter; actual costs may vary.

\*\* Local Taxation Sources include but are not limited to the General Fund, SPLOST, or other County taxation sources, as determined during the annual budget adoption process.

## Glossary

*The following terms are used in this Report. Where possible, the definitions are taken directly from the Georgia Development Impact Fee Act.*

**Capital improvement:** an improvement with a useful life of ten 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<sup>5</sup>:** capital improvements in one of the following categories:

- (A) Water supply production, treatment, and distribution facilities;
- (B) Waste-water collection, treatment, and disposal facilities;
- (C) Roads, streets, and bridges, including rights of way, traffic signals, landscaping, and any local components of state or federal highways;
- (D) Storm-water collection, retention, detention, treatment, and disposal facilities, flood control facilities, and bank and shore protection and enhancement improvements;
- (E) Parks, open space, and recreation areas and related facilities;
- (F) Public safety facilities, including police, fire, emergency medical, and rescue facilities; and
- (G) Libraries and related facilities.

**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.

**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.

**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

<sup>5</sup> Eligible facilities addressed in this report fall under category (F); public safety facilities are isolated to fire protection services.



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:** means 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, city, or intergovernmental agreement in which a defined set of public facilities provide 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 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, 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 municipality or city to finance the capital improvements element but such 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.'

## Appendix A – Future Growth Forecasts

In order to accurately calculate the demand for future services in Fayette County, new growth and development must be quantified in future projections. These projections include forecasts for population, housing, and employment to the year 2045 and provide the base-line conditions from which Level of Service calculations are produced.

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 are used to calculate impact costs when the cost is assessed when a building permit is issued. 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 the unit may become vacant during future re-sales or turnovers.
- Employment forecasts are refined to reflect 'value-added' employment figures. This reflects an exclusion of jobs considered to be transitory or non-site specific in nature, and thus not requiring building permits to operate (i.e., are not assessed impact fees), as well as governmental uses that are not subject to impact fees.

'Value-added' 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 protection.

### ■ Historic Population Growth

Every year, the US Census Bureau estimates the population in Fayette County and its cities between decennial censuses (e.g., 2000 and 2010). Unlike the decennial censuses, which are 'as of' April 1, the annual estimates are 'as of' July 1 of each year. Subsequently, in 2023 the Census Bureau provided annual estimates that revised the previously published estimates for 2020 and 2021 and added an estimate for 2022.

All of the annual estimates beginning in 2000 are shown in Table A-1. They are broken out by jurisdiction, with subtotals for the Fire Protection service area (the 'Fire District') shown, as well as totals for the entire county.

The service area for Fire Protection experienced a population increase of almost 13% between 2000 and 2010. This dropped slightly in the subsequent decade, resulting in an overall increase of 22% for the 21-year period.

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*
Unincorporated Area	44,364	45,063	45,563	46,218	46,802	47,735	48,486	48,647	48,504	48,404	48,581
Brooks	490	496	501	506	511	520	527	527	524	522	526
Tyrone	3,982	4,304	4,609	4,931	5,247	5,605	5,946	6,214	6,439	6,663	6,917
Woolsey	156	157	157	158	159	161	162	161	159	158	158
<b>Subtotal – Fire District</b>	<b>48,992</b>	<b>50,020</b>	<b>50,830</b>	<b>51,813</b>	<b>52,719</b>	<b>54,021</b>	<b>55,121</b>	<b>55,549</b>	<b>55,626</b>	<b>55,747</b>	<b>56,182</b>
Fayetteville	11,317	11,855	12,358	12,887	13,421	14,027	14,587	14,985	15,265	15,563	16,218
Peachtree City	31,764	32,211	32,519	32,934	33,303	33,913	34,391	34,455	34,301	34,183	34,538
Fayette County Total	92,073	94,086	95,707	97,634	99,443	101,961	104,099	104,989	105,192	105,493	106,938

Geography	Population Estimate (as of July 1)											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Unincorporated Area	49,928	50,037	50,458	51,086	51,625	52,162	52,759	52,944	53,339	53,606	53,866	54,098
Brooks	531	532	536	543	546	554	558	560	562	565	567	569
Tyrone	6,959	6,988	7,040	7,099	7,155	7,191	7,296	7,392	7,539	7,724	7,829	7,907
Woolsey	196	196	196	197	201	200	204	206	206	206	206	207
<b>Subtotal – Fire District</b>	<b>57,614</b>	<b>57,753</b>	<b>58,230</b>	<b>58,925</b>	<b>59,527</b>	<b>60,107</b>	<b>60,817</b>	<b>61,102</b>	<b>61,646</b>	<b>62,101</b>	<b>62,468</b>	<b>62,781</b>
Fayetteville	16,858	16,852	16,980	17,337	17,581	18,120	18,487	18,478	18,715	19,015	19,342	19,687
Peachtree City	36,094	36,138	36,314	36,454	36,593	36,586	36,882	37,337	37,909	38,367	38,871	39,562
Fayette County Total	110,560	110,737	111,521	112,714	113,700	114,813	116,187	116,916	118,270	119,483	120,681	122,030

\* 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 2022, along with new estimates for 2021 and 2022.

## Population Forecasts

The first population projections presented on Table A-3 on the next page are for the entire county, which sets the stage for understanding the subsequent service area projections. Two forecast methods are used to project the county's past population growth forward to 2045, one using a 'linear trend' (straight line) and the other a 'growth trend' (curved line) forecast algorithm. The 'raw' results of the two projection methods are shown on Table A-3 in a grey font. (2022 is underlined on the table as the last year Census estimates were available.) In the last two columns, the actual annual Census population figures are shown to 2022. These remind the reader that the projection methodologies change the actual Census estimates (on which the projections are based) in order to produce 'smooth' lines reflecting the projections.

## Correlating with the Census

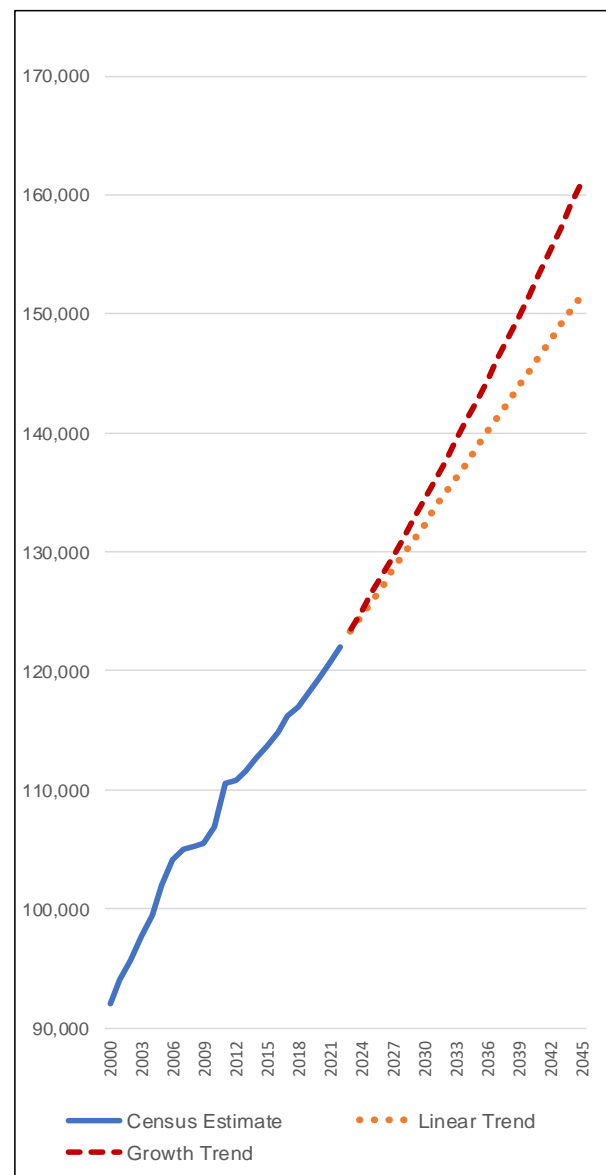
As noted, the algorithms used to prepare the projections shown on Table A-3 present a 'smooth' straight or curved line from the 'start' date of 2022, which also changes the population figures for each year from 2000 to 2022 on the tables from the actual Census numbers. Because of this, the projected future population estimates must be rectified so that the Census 2022 population figure is the 'start' population for each forecast.

The rectifications to the actual Census figures are accomplished by first determining the extent to which the raw results from each projection method diverges from the actual 2022 Census population. These variances are shown at the bottom of Table A-3 as the 'adjustments' needed to bring the forecast numbers in line with the Census. These percentages are then applied to every subsequent 'projected' population each year to correlate the data to the same line function that the 'raw' projections followed.

An examination of the line describing the 2000-2021 Census figures suggests that the county's population proceeded at a hearty rate up to the collapse in the national housing market during the Great Recession, recovering in the early 2020s with a steady stream of population growth and a slight up-tick in the most recent years. Reflecting this slight up-tick and the County's historical growth, aided by increasing growth opportunities in the county, the **'growth trend' projection** is considered to be the most realistic projection out to 2045.

**Table A-2: Population Forecast - Total County**

Year	Census Estimate	Linear Trend Raw	Growth Trend Raw	Linear Trend Adjusted	Growth Trend Adjusted
2000	92,073	94257.6196	94708.5741	92,073	92,073
2001	94,086	95551.1482	95856.9907	94,086	94,086
2002	95,707	96844.6769	97019.3327	95,707	95,707
2003	97,634	98138.2055	98195.7691	97,634	97,634
2004	99,443	99431.7342	99386.4706	99,443	99,443
2005	101,961	100725.263	100591.61	101,961	101,961
2006	104,099	102018.792	101811.363	104,099	104,099
2007	104,989	103312.32	103045.907	104,989	104,989
2008	105,192	104605.849	104295.42	105,192	105,192
2009	105,493	105899.377	105560.085	105,493	105,493
2010	106,938	107192.906	106840.085	106,938	106,938
2011	110,521	108486.435	108135.606	110,521	110,521
2012	110,737	109779.963	109446.835	110,737	110,737
2013	111,521	111073.492	110773.965	111,521	111,521
2014	112,714	112367.021	112117.187	112,714	112,714
2015	113,700	113660.549	113476.697	113,700	113,700
2016	114,813	114954.078	114852.692	114,813	114,813
2017	116,187	116247.607	116245.372	116,187	116,187
2018	116,916	117541.135	117654.939	116,916	116,916
2019	118,270	118834.664	119081.599	118,270	118,270
2020	119,483	120128.193	120525.558	119,483	119,483
2021	120,681	121421.721	121987.026	120,681	120,681
2022	122,030	122715.25	123466.215	122,030	122,030
2023		124008.779	124963.341	123,316	<b>123,510</b>
2024		125302.307	126478.62	124,603	<b>125,007</b>
2025		126595.836	128012.274	125,889	<b>126,523</b>
2026		127889.365	129564.524	127,175	<b>128,057</b>
2027		129182.893	131135.597	128,462	<b>129,610</b>
2028		130476.422	132725.72	129,748	<b>131,182</b>
2029		131769.951	134335.125	131,034	<b>132,772</b>
2030		133063.479	135964.045	132,320	<b>134,382</b>
2031		134357.008	137612.717	133,607	<b>136,012</b>
2032		135650.537	139281.38	134,893	<b>137,661</b>
2033		136944.065	140970.277	136,179	<b>139,330</b>
2034		138237.594	142679.653	137,466	<b>141,020</b>
2035		139531.123	144409.757	138,752	<b>142,730</b>
2036		140824.651	146160.84	140,038	<b>144,461</b>
2037		142118.18	147933.156	141,325	<b>146,212</b>
2038		143411.708	149726.963	142,611	<b>147,985</b>
2039		144705.237	151542.521	143,897	<b>149,780</b>
2040		145998.766	153380.095	145,183	<b>151,596</b>
2041		147292.294	155239.95	146,470	<b>153,434</b>
2042		148585.823	157122.357	147,756	<b>155,295</b>
2043		149879.352	159027.591	149,042	<b>157,178</b>
2044		151172.88	160955.926	150,329	<b>159,084</b>
2045		152466.409	162907.644	151,615	<b>161,013</b>
<b>2023-2045 Increase</b>				<b>28,299</b>	<b>37,503</b>



Adjustment to 2022 Census: 99.44159% 98.83675%

### Service Area Population Projections

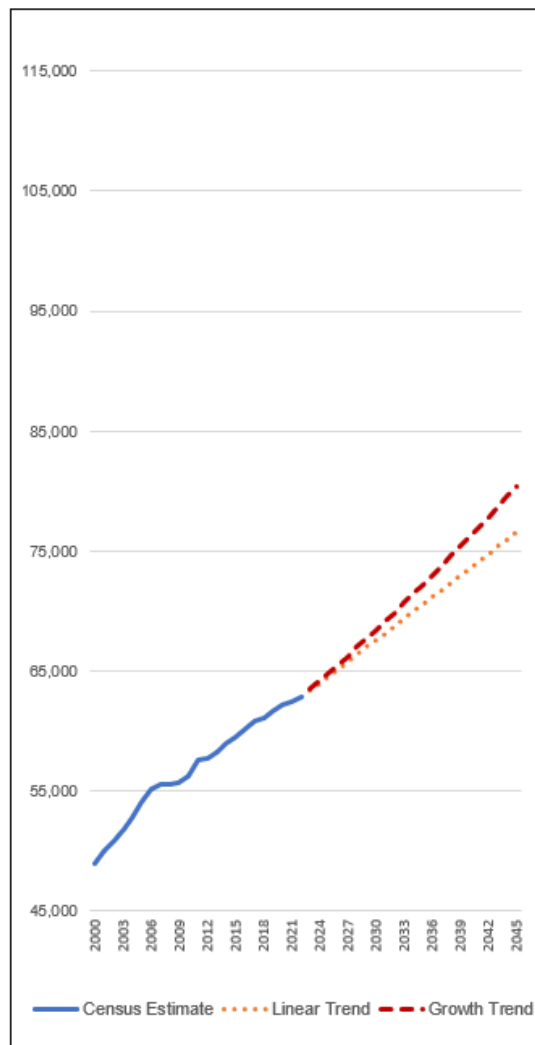
With the 'overview' of countywide population growth, population projections for the Fire Protection service area were prepared. This area includes unincorporated Fayette County in addition to the Towns of Brooks, Tyrone, and Woolsey.

The same approach used for the countywide projections is used in the population projections for the service area by applying the linear and growth trend algorithms to the 2000-2022 Census estimates, and then rectifying each projection to the actual 2022 Census figure. This resulted in the two projections carrying forward to 2045 for each service area.

Considering the results, the same rationale used in assessing the countywide forecasts appears to hold true here—that the 'growth' algorithm best reflects the potential for future population growth in each. The highlighted 'Growth Trend Adjusted' column shows a projected increase population growth of 16,940 over the next 20+ years.

**Table A-3: Population Forecast - Fire Protection Area**

	Census Estimate	Linear Trend Raw	Growth Trend Raw	Linear Trend Adjusted	Growth Trend Adjusted
2000	48,992	50,278	50,456	48,992	48,992
2001	50,020	50,884	51,002	50,020	50,020
2002	50,830	51,489	51,554	50,830	50,830
2003	51,813	52,095	52,111	51,813	51,813
2004	52,719	52,701	52,674	52,719	52,719
2005	54,021	53,306	53,244	54,021	54,021
2006	55,121	53,912	53,820	55,121	55,121
2007	55,549	54,518	54,402	55,549	55,549
2008	55,626	55,123	54,990	55,626	55,626
2009	55,747	55,729	55,584	55,747	55,747
2010	56,182	56,335	56,185	56,182	56,182
2011	57,569	56,941	56,793	57,569	57,569
2012	57,748	57,546	57,407	57,748	57,748
2013	58,225	58,152	58,028	58,225	58,225
2014	58,922	58,758	58,655	58,922	58,922
2015	59,526	59,363	59,289	59,526	59,526
2016	60,108	59,969	59,931	60,108	60,108
2017	60,818	60,575	60,579	60,818	60,818
2018	61,102	61,181	61,234	61,102	61,102
2019	61,646	61,786	61,896	61,646	61,646
2020	62,101	62,392	62,565	62,101	62,101
2021	62,468	62,998	63,241	62,468	62,468
2022	62,781	63,603	63,925	62,781	62,781
2023		64,209	64,616	63,379	63,460
2024		64,815	65,315	63,977	64,146
2025		65,421	66,021	64,575	64,840
2026		66,026	66,735	65,173	65,541
2027		66,632	67,457	65,770	66,249
2028		67,238	68,186	66,368	66,966
2029		67,843	68,924	66,966	67,690
2030		68,449	69,669	67,564	68,422
2031		69,055	70,422	68,162	69,162
2032		69,661	71,184	68,760	69,909
2033		70,266	71,953	69,358	70,665
2034		70,872	72,731	69,956	71,429
2035		71,478	73,518	70,553	72,202
2036		72,083	74,313	71,151	72,982
2037		72,689	75,116	71,749	73,772
2038		73,295	75,928	72,347	74,569
2039		73,900	76,749	72,945	75,376
2040		74,506	77,579	73,543	76,191
2041		75,112	78,418	74,141	77,014
2042		75,718	79,266	74,739	77,847
2043		76,323	80,123	75,336	78,689
2044		76,929	80,989	75,934	79,540
2045		77,535	81,865	76,532	80,400



## ■ 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 rather than the number of residents that may occupy the housing unit.

The following table shows the number of housing units anticipated in the future for the Fire Protection service area, which includes the unincorporated area and the Towns of Brooks, Tyrone, and Woolsey. These units are based on the number of households (i.e., the number of occupied housing units) that in turn was converted from population projections by multiplying population figures by average household size data taken from the 2020 Census.

Households are then “expanded” to the total number of housing units below by adding in vacant units, based on the vacancy rates reported in the 2020 Census.

**Table A-4: Number of Housing Units**

Year	Fire Protection	
	Households	Housing Units
2023	19,556	23,264
2024	19,727	23,467
2025	19,973	23,760
2026	20,216	24,048
2027	20,369	24,230
2028	20,605	24,511
2029	20,836	24,786
2030	21,063	25,056
2031	21,287	25,323
2032	21,509	25,587
2033	21,730	25,849
2034	21,949	26,110
2035	22,263	26,484
2036	22,485	26,748
2037	22,710	27,015
2038	22,934	27,282
2039	23,160	27,550
2040	23,486	27,939
2041	23,721	28,218
2042	23,964	28,507
2043	24,214	28,804
2044	24,470	29,109
2045	24,728	29,416
<b>Increase 2023-45</b>	<b>5,172</b>	<b>6,152</b>

It is important to note that impact fees are not based on the number of people residing in a housing unit (even the average number). Since 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, using population as the basis will vary widely as the years go by. This would result in a constant reassessment of the impact fees that are 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 the coming years ahead.



## ■ Employment Forecasts

The following Table A-5 on the next page shows the forecasts for employment growth countywide in Fayette County, from 2023 to 2045. The employment figures are based on forecasts published by Woods & Poole Economics in their latest (2022) *Georgia State Profile*, which includes a data book for every county in the state.

In contrast to the Census Bureau, Woods & Poole counts jobs, not just employed people, which captures people holding two or more jobs, self-employed sole proprietors, part-time workers, and vacant but available positions. This gives a more complete picture than other forecasts based on the Census data, which counts only the number of **people** that are employed, not the total number of **jobs** available.

On the table, the Woods & Poole forecasts for the 'types of employment' are shown in three groups. The 'non-building' types of jobs are those that primarily occur out-of-doors. Such jobs include any employment that is considered to be locationally transitory in nature, such as those working on construction sites, or are strictly land-based such as farming and other agricultural workers. Since impact fees are based on building permits, these types of employment generally do not involve occupancy of primary buildings for the workers themselves and thus place little more than minor demands for public services.

The second category—government—sets those city, county, state, and federal jobs apart since impact fees are not charged for such buildings that are actually owned by those governments, which are otherwise exempt from local taxation. This category includes public (but not private) schools.

The last category—'value-added' employment—is comprised of those types of jobs that represent growth in businesses and other nonresidential uses (such as nonprofits and institutions) that would increase demand for County services and would therefore be subject to impact fees. Even though some of the types of uses may occupy buildings that are exempt from property taxes (such as churches and other places of religious worship), they are not exempt from governmental fees (such as water and sewer service and/or building permit fees).

**Table A-5: County-wide Employment Forecast (Jobs)**

	2023	2025	2030	2035	2040	2045	2023-2045 Change	
							Number	Percent
<b>Total Employment</b>	<b>77,782</b>	<b>81,128</b>	<b>90,058</b>	<b>99,850</b>	<b>110,662</b>	<b>122,425</b>	<b>44,643</b>	<b>36.5%</b>
Farm Employment	157	155	151	148	145	144	-13	-9.0%
Forestry, Fishing	258	255	246	238	230	221	-37	-16.7%
Mining	92	89	82	75	69	63	-29	-46.0%
Construction	5,072	5,177	5,457	5,761	6,098	6,462	1,390	21.5%
<b>Total Not Building Related</b>	<b>5,579</b>	<b>5,676</b>	<b>5,936</b>	<b>6,222</b>	<b>6,542</b>	<b>6,890</b>	<b>1,311</b>	<b>19.0%</b>
Federal Civilian	596	616	671	736	811	897	301	33.6%
Federal Military	363	364	366	371	376	383	20	5.2%
State & Local Government	5,039	5,123	5,344	5,580	5,840	6,116	1,077	17.6%
<b>Total Government</b>	<b>5,998</b>	<b>6,103</b>	<b>6,381</b>	<b>6,687</b>	<b>7,027</b>	<b>7,396</b>	<b>1,398</b>	<b>18.9%</b>
Utilities	62	62	62	64	65	66	4	6.1%
Manufacturing	5,275	5,341	5,500	5,680	5,883	6,099	824	13.5%
Wholesale Trade	2,940	2,982	3,092	3,196	3,290	3,369	429	12.7%
Retail Trade	9,291	9,529	10,162	10,831	11,532	12,246	2,955	24.1%
Transportation & Warehousing	2,364	2,445	2,653	2,868	3,094	3,331	967	29.0%
Information	992	1,036	1,159	1,299	1,462	1,647	655	39.8%
Finance & Insurance	3,356	3,548	4,007	4,441	4,858	5,267	1,911	36.3%
Real Estate	4,966	5,206	5,842	6,490	7,160	7,840	2,874	36.7%
Professional & Technical Services	5,923	6,232	7,026	7,863	8,763	9,728	3,805	39.1%
Management of Companies	258	264	280	296	313	329	71	21.6%
Administrative & Waste Services	3,555	3,666	3,949	4,246	4,564	4,902	1,347	27.5%
Educational Services	1,424	1,509	1,730	1,965	2,222	2,503	1,079	43.1%
Health Care & Social Assistance	9,993	10,774	12,994	15,596	18,611	22,020	12,027	54.6%
Arts, Entertainment & Recreation	2,495	2,642	3,029	3,454	3,925	4,441	1,946	43.8%
Accommodation & Food Services	8,014	8,581	10,129	11,885	13,895	16,170	8,156	50.4%
Other Private Services	5,300	5,530	6,128	6,766	7,453	8,179	2,879	35.2%
<b>Total Value-Added</b>	<b>66,208</b>	<b>69,347</b>	<b>77,742</b>	<b>86,940</b>	<b>97,090</b>	<b>108,137</b>	<b>41,929</b>	<b>38.8%</b>

Source: Woods & Poole Economics, Inc., 2022 Georgia Data Book, Fayette County, as adjusted.

The next table shows the total employment figures for the county as a whole, and the total number of employed persons working in each of the incorporated jurisdictions and the unincorporated area, as reported in the 2010 Census commuting data.<sup>6</sup> Even though these figures show employed persons and not total jobs, and presumably include people working in some buildings that are not subject to impact fees, they are used in forecasting employment in the Fire Protection service area (the 'Fire District') as the best data available.

<sup>6</sup> Similar commuting data has not been published for the 2020 census. It is therefore assumed that the commuting patterns from 2010 have continued at the same proportions as before.

**Table A-6: Employment by Place of Work**

Jurisdiction	Total Workers	Percent of County
<b>County Total</b>	<b>44,031</b>	<b>100%</b>
Brooks	171	0.3884%
Fayetteville	12,183	27.6691%
Peachtree City	19,514	44.3188%
Tyrone	2,713	6.1616%
Woolsey	30	0.0681%
Unincorporated	9,420	21.3940%

Source: Commuting Patterns, Bureau of the Census, 2010.

Current employment is therefore derived by multiplying the 2010 percentages for each service area times the number of countywide jobs.

A final table, Table A-7, presents employment forecasts for the Fire Protection service area. As noted previously, only the 'value-added jobs' would be located in buildings that would be subject to impact fee assessments.

**BY SERVICE AREA**

Unincorporated Area	9,420	
Brooks	171	
Tyrone	2,713	
Woolsey	30	
<b>Fire District</b>	<b>12,334</b>	<b>28.0121%</b>

**Table A-7: Future Job Growth - Fire Protection**

Year	Total Jobs	Non-Building Related	Government	Value-Added Jobs
2023	21,788	1,563	1,680	18,545
2024	22,101	1,572	1,690	18,839
2025	22,726	1,590	1,710	19,426
2026	23,226	1,605	1,725	19,896
2027	23,726	1,619	1,741	20,366
2028	24,227	1,634	1,757	20,836
2029	24,727	1,648	1,773	21,306
2030	25,227	1,663	1,787	21,777
2031	25,776	1,679	1,805	22,292
2032	26,324	1,695	1,822	22,807
2033	26,873	1,711	1,839	23,323
2034	27,421	1,727	1,856	23,838
2035	27,970	1,743	1,873	24,354
2036	28,576	1,761	1,892	24,923
2037	29,182	1,779	1,911	25,492
2038	29,787	1,797	1,930	26,060
2039	30,393	1,815	1,949	26,629
2040	30,999	1,833	1,968	27,198
2041	31,658	1,852	1,989	27,817
2042	32,317	1,872	2,010	28,435
2043	32,976	1,891	2,030	29,055
2044	33,635	1,911	2,051	29,673
2045	34,294	1,930	2,072	30,292
<b>Increase 2023-45</b>	12,506	367	392	11,747

Percent 28.0121% Brooks, Tyrone, Woolsey and Unincorporated Area.  
(Fire Protection service area)

## Appendix B – Cost Adjustments

### ■ 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 future revenue credits.

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 Appendix describes the methodologies used to make appropriate adjustments to project cost figures, both past and future, to convert these costs into current dollars when such an adjustment is appropriate.

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 (2023) using an inflation rate to bring past expenditures up and to increase current cost estimates into future expenditures expected in a particular year, and a deflator for future costs representing interest that would be added to funds being saved up until the expenditure is to be made. In essence, the present value is considered in light of the value of money as it changes over time.

### Past Expenditures

Past expenditures are considered in impact fee calculations only for previous expenditures for projects that created 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 historic prices) and evolving land prices (often accelerated beyond inflation by market pressures), the approach best captures the 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 Project Costs

In order to determine the present value of a project expenditure that will be made in the future, the Net Present Value (NPV) of the expenditure is determined. To calculate the NPV 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 Net 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. The future cost is then deflated to the present using the Net Discount Rate, which establishes the NPV for the project in current dollars. These two formulas are:

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

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

In this Appendix, two important adjustments are discussed that are required to convert current cost estimates 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 Net Discount Rate. In essence, the Net 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 the 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. In essence, the calculation determines how much money needs to be added to the account so that, with interest, it will grow to the amount needed for that future expenditure at that time. This is the Net Present Value of that future expenditure.

## ■ Cost Inflators

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), a ‘building cost inflator’ is used as the appropriate inflation rate.
- For all non-construction types of projects (such as a fire truck or 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

The Engineering News-Record (ENR)<sup>7</sup> publishes both a Building Cost Index (BCI) and a Construction Cost Index (CCI), both of which are widely used in the construction industry. The indexes are based on monthly and annual cost increases of various construction materials and applicable labor rates, and are calibrated regionally.

## Building Cost Inflator

**Table B-1: Building Cost Inflator - BCI**

Year	Amount	BCI*		Effect of Inflation	
		1913=100	2012=1.0	BCI	Avg. Rate =
					<b>2.5825565%</b>
2012	\$ 100,000.00	3,970.93	1.000000	\$ 100,000.00	\$ 100,000.00
2013		4,022.11	1.012888	\$ 101,288.76	\$ 102,582.56
2014		4,076.81	1.026663	\$ 102,666.31	\$ 105,231.81
2015		4,108.05	1.034529	\$ 103,452.93	\$ 107,949.48
2016		4,126.72	1.039232	\$ 103,923.20	\$ 110,737.34
2017		4,278.39	1.077428	\$ 107,742.79	\$ 113,597.19
2018		4,408.94	1.110303	\$ 111,030.32	\$ 116,530.90
2019		4,523.59	1.139176	\$ 113,917.60	\$ 119,540.38
2020		4,615.43	1.162304	\$ 116,230.36	\$ 122,627.58
2021		5,335.09	1.343535	\$ 134,353.48	\$ 125,794.50
2022		6,314.94	1.590292	\$ 159,029.21	\$ 129,043.22
				<b>\$ 1,253,634.96</b>	<b>\$ 1,253,634.96</b>

Table B-1 presents a calculation of the annual average rate of increase reflected in the construction costs of a building. For this analysis, the 2012-2022 ten-year period is used as a base time period for an estimate of average future construction cost increases due to inflation in labor and materials costs.

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

<sup>7</sup> Engineering News-Record is a magazine devoted to providing those in the construction business with up-to-date information concerning innovations and policy changes related to their field of work. This includes tracking monthly increases in the relative costs of construction and building projects, as well as features on the business and management aspects of construction.

Table B-1 assumes a building construction project that cost \$100,000 in 2012, 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 2012 Building Cost Index (BCI) at '1.0,' the increase in the BCI as a multiple of 2012 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 2022, for instance, the same building project would cost about \$141,900 due to inflation in construction materials and personnel costs.

When the total for all such projects is summed for the 2012-2022 period (\$1,235,117.56), 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 inflator for building construction projects that will begin in future years.

## CPI Inflator

Table B-2: Non-Construction Cost Inflator - CPI

Year	Amount	CPI*		Present Value: CPI	Long Term Inflator =	10-Year Inflator =
		1982-84=100	2020=1.0			
					2.49984150%	
1982	\$ 10,000.00	96.50	2.88029	\$ 28,802.90	\$ 26,194.17	
1983	\$ 10,000.00	99.60	2.79064	\$ 27,906.43	\$ 25,555.32	
1984	\$ 10,000.00	103.90	2.67515	\$ 26,751.49	\$ 24,932.06	
1985	\$ 10,000.00	107.60	2.58316	\$ 25,831.60	\$ 24,324.00	
1986	\$ 10,000.00	109.60	2.53602	\$ 25,360.22	\$ 23,730.77	
1987	\$ 10,000.00	113.60	2.44673	\$ 24,467.25	\$ 23,152.00	
1988	\$ 10,000.00	118.30	2.34952	\$ 23,495.18	\$ 22,587.36	
1989	\$ 10,000.00	124.00	2.24152	\$ 22,415.16	\$ 22,036.48	
1990	\$ 10,000.00	130.70	2.12661	\$ 21,266.11	\$ 21,499.04	
1991	\$ 10,000.00	136.20	2.04073	\$ 20,407.34	\$ 20,974.70	
1992	\$ 10,000.00	140.30	1.98110	\$ 19,810.98	\$ 20,463.16	
1993	\$ 10,000.00	144.50	1.92352	\$ 19,235.16	\$ 19,964.09	
1994	\$ 10,000.00	148.20	1.87549	\$ 18,754.93	\$ 19,477.19	
1995	\$ 10,000.00	152.40	1.82381	\$ 18,238.06	\$ 19,002.16	
1996	\$ 10,000.00	156.90	1.77150	\$ 17,714.98	\$ 18,538.72	
1997	\$ 10,000.00	160.50	1.73176	\$ 17,317.63	\$ 18,086.59	
1998	\$ 10,000.00	163.00	1.70520	\$ 17,052.02	\$ 17,645.48	
1999	\$ 10,000.00	166.60	1.66836	\$ 16,683.55	\$ 17,215.13	
2000	\$ 10,000.00	172.20	1.61410	\$ 16,141.00	\$ 16,795.27	
2001	\$ 10,000.00	177.10	1.56944	\$ 15,694.41	\$ 16,385.66	
2002	\$ 10,000.00	179.90	1.54501	\$ 15,450.14	\$ 15,986.03	
2003	\$ 10,000.00	184.00	1.51059	\$ 15,105.87	\$ 15,596.15	
2004	\$ 10,000.00	188.90	1.47140	\$ 14,714.03	\$ 15,215.78	
2005	\$ 10,000.00	195.30	1.42318	\$ 14,231.85	\$ 14,844.69	
2006	\$ 10,000.00	201.60	1.37871	\$ 13,787.10	\$ 14,482.65	
2007	\$ 10,000.00	207.34	1.34053	\$ 13,405.29	\$ 14,129.43	
2008	\$ 10,000.00	215.30	1.29096	\$ 12,909.62	\$ 13,784.83	
2009	\$ 10,000.00	214.54	1.29557	\$ 12,955.71	\$ 13,448.64	2.580330%
2010	\$ 10,000.00	218.06	1.27466	\$ 12,746.63	\$ 13,120.64	
2011	\$ 10,000.00	224.94	1.23566	\$ 12,356.59	\$ 12,800.65	\$ 12,901.52
2012	\$ 10,000.00	229.59	1.21061	\$ 12,106.07	\$ 12,488.46	\$ 12,576.99
2013	\$ 10,000.00	232.96	1.19313	\$ 11,931.30	\$ 12,183.88	\$ 12,260.63
2014	\$ 10,000.00	236.74	1.17408	\$ 11,740.84	\$ 11,886.73	\$ 11,952.22
2015	\$ 10,000.00	237.02	1.17269	\$ 11,726.92	\$ 11,596.83	\$ 11,651.57
2016	\$ 10,000.00	240.01	1.15808	\$ 11,580.82	\$ 11,313.99	\$ 11,358.49
2017	\$ 10,000.00	245.12	1.13393	\$ 11,339.26	\$ 11,038.06	\$ 11,072.77
2018	\$ 10,000.00	251.11	1.10689	\$ 11,068.91	\$ 10,768.86	\$ 10,794.25
2019	\$ 10,000.00	255.66	1.08719	\$ 10,871.93	\$ 10,506.22	\$ 10,522.72
2020	\$ 10,000.00	261.56	1.06265	\$ 10,626.55	\$ 10,249.98	\$ 10,258.03
2021	\$ 10,000.00	277.95	1.00000	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00

1982-21 \$ 400,000.00  
2011-21 \$ 110,000.00

\$ 674,001.84 \$ 674,001.84  
\$ 125,349.20 ← → \$ 125,349.20

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 B-2 shows the CPI figures for every year since 1982, when the current CPI was first calibrated.

By 2021 the CPI had risen considerably over the 1982 CPI. The first column under the 'CPI' heading on Table B-3 shows the average annual CPI figures. Using 2021 as the base (2021=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.

\*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 B-3 yield the figures shown for the CPI on the table under the 'present value' heading. Cumulatively, the \$400,000 spent over the 1982-2021 period would have a total present value of \$674,001.84 in today's dollars. Considering the present value figures for the \$10,000 annual expenditures, an average annual inflation rate of almost 2.5% yields the same total amount over the 1982-2021 period.

The 39-year average of annual CPI change (the period of 1982-2021) shown on Table B-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 time-frame covered. Looking only at the change in CPI for the 10 years from 2011 to 2021, an average annual inflation rate of almost 2.6% (2.58033%) best captures the change over that period. Even though this 10-year rate is somewhat skewed by the 2021 one-year rate influenced by the pandemic, this rate (compared to the 1982-2021 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.

### Calculating Net Present Value

Determining the NPV of future project expenditures depends on the type of 'project' being funded, as discussed above. Specifically ....

- For a building construction project (such as a fire station), the current cost estimate for the project is inflated into the future using the average Building Cost Inflator (from Table B-1) applied to the number of years until the year planned for its construction. This future cost is then deflated back to the present using the Net Discount Rate (currently 1.875%<sup>8</sup>) since this reflects the present value of a future amount of money.
- For non-construction capital projects (such as fire apparatus purchases or land acquisition), the 10-year average CPI inflator is used to estimate the project expenditure in future dollars while, again, the Net Discount Rate is applied to deflate that future cost to present value.

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<sup>8</sup> The discount rate is based on the average interest paid to local governments by the state's Georgia 1 Fund. From June '22 through May'23, the monthly rate varied, with the average being 3.75%. Because monthly deposits to the Fund would grow slowly, the effective rate of return used is half of the average – or 1.875% – which is the effective 'discount rate'.