Harris County Georgia

Impact Fee Program

Including the following public facility categories:

Parks & Recreation
Sheriff's Office & Jail
Fire Protection
Emergency Medical Services
Emergency 911

Methodology Report

DRAFT: September 24, 2021

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Introduction

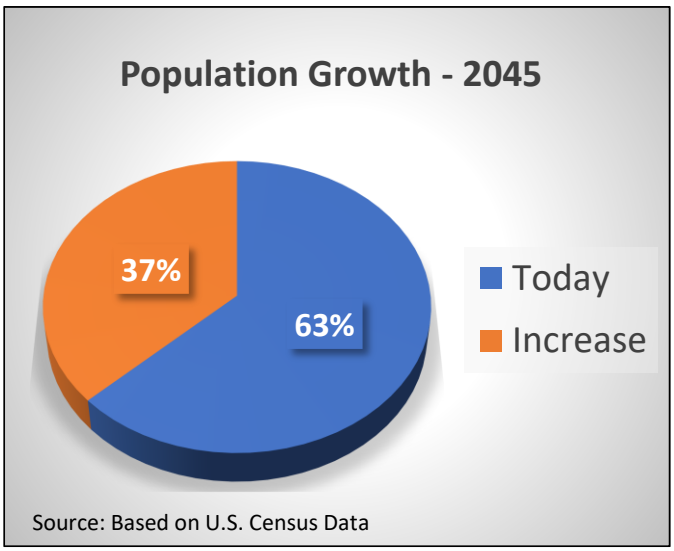
Looking Ahead: An Overview[1]

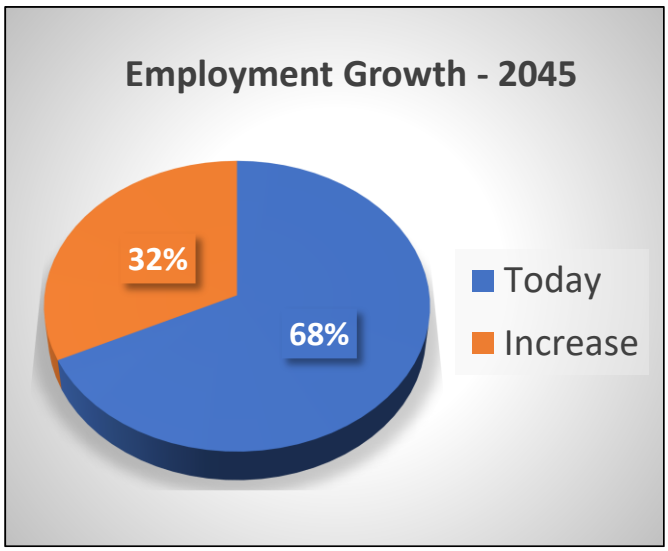
Forecasts indicate major growth ahead for Harris County as people continue to move into the county and attract increases in jobs and services.

Over the coming 24 years, Harris County is projected to continue its previous rate of population growth, fully recovering from the lingering effects of the Great Recession. Overall, the county is expected to add almost 21,500 people to its current population of 36,619, generating a net of almost 9,000 additional housing units.

Employment in the county is also projected to continue at a steady pace. The number of 'value-added' employees[2] are projected to increase by 5,264, which equals over 47% of all jobs in the county today.

Over the next 24 years to 2045, it is expected that 37% of the people that will be living in Harris County then are not here today. This 37% of the 2045 total population equates to an almost 59% increase over the population living in the county now, accompanied by a similar increase in housing units. Employment will also increase, though not to the extent of population growth. By 2045, the total number of 'value added' jobs in the county will be home to 32% new businesses, which reflects a 47% increase over the number today.





Population and Housing Outlook

These future increases in population and housing are not as unprecedented as it may seem. Looking back over the past 19 years, since 2000 the county's population grew from over 23,900 to 35,240—an overall increase of more than 47%. During the decade of 2000-2010, the county's population

[1] Population, housing, and employment forecasts are presented in greater detail in the Forecasts chapter.
[2] 'Value-added jobs' are those working in businesses that would be subject to impact fees and thus exclude the types of jobs that would not be associated with an impact fee (such as farm workers, itinerant construction workers and governmental employees).

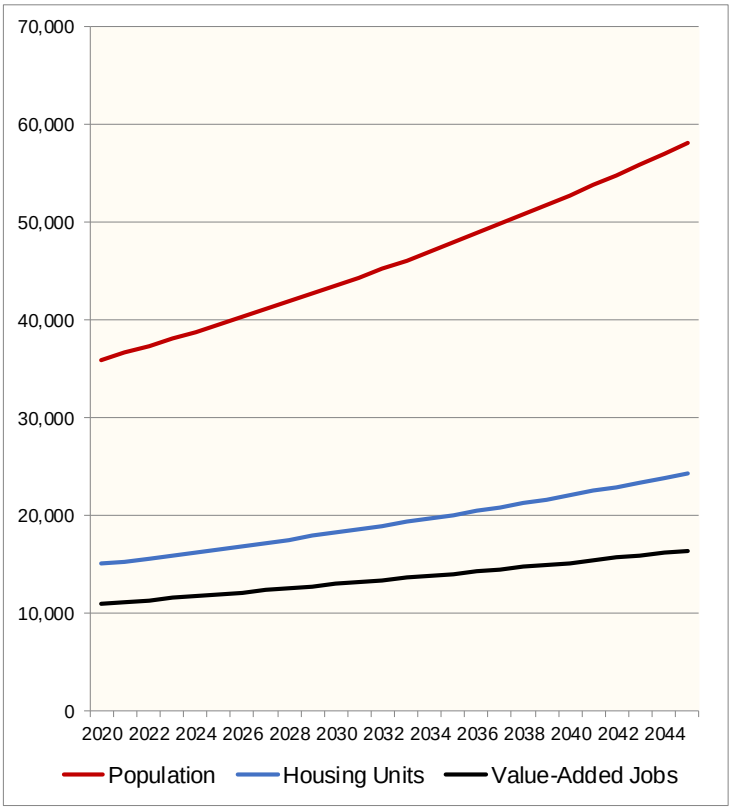
increased by 7,582, which dropped to a total of 3,087 new residents during the nine years since 2010. Full recovery from the Great Recession is anticipated, however, with the return to the county's historic population growth over the coming 24 years.

Forecasts of Future Growth

	Population	Housing Units	Value-Added Jobs
2020	35,921	15,027	10,901
2021	36,619	15,319	11,110
2022	37,330	15,617	11,312
2023	38,055	15,920	11,514
2024	38,795	16,230	11,716
2025	39,549	16,545	11,918
2026	40,317	16,866	12,124
2027	41,101	17,194	12,330
2028	41,899	17,528	12,535
2029	42,713	17,869	12,741
2030	43,543	18,216	12,947
2031	44,389	18,570	13,162
2032	45,252	18,931	13,377
2033	46,131	19,299	13,592
2034	47,027	19,673	13,807
2035	47,941	20,056	14,022
2036	48,873	20,446	14,250
2037	49,822	20,843	14,477
2038	50,790	21,248	14,705
2039	51,777	21,661	14,932
2040	52,783	22,081	15,160
2041	53,809	22,511	15,403
2042	54,854	22,948	15,646
2043	55,920	23,394	15,888
2044	57,007	23,848	16,131
2045	58,114	24,312	16,374

Note: Value-Added Jobs exclude outdoor (non-building based) farm, forestry, mining and construction workers, and government employees.

Source: Based on U.S. Census Data



	Population	Housing Units	Value-Added Jobs
2021	36,619	15,319	11,110
2045	58,114	24,312	16,374
Increase	21,495	8,993	5,264
Growth	58.7%	58.7%	47.4%

Increased Job Opportunities

Not as robust as population growth, the nonresidential growth forecast indicates an increase in the number of private-sector jobs such that, by 2045, about 1 in 3 jobs (32%) will be new to the county. Compared to today's 'value-added' employment of 11,110, new jobs will have increased by 5,264—a number equal to 47% of the number of today's workers.

Numerically, the county is projected to add the largest number of new jobs in real estate (1,205 over 2021) followed by administrative positions (393), transportation and warehousing (294), finance & insurance (285), and manufacturing (247). Together, these five categories will account for over 2,400 new jobs, a little less than two-thirds (61%) of all new jobs added over the coming 24 years.

Proportionally, the greatest increases are expected in the real estate category (64% of real estate jobs in 2045) followed by administrative positions (40%), transportation and warehousing (38%), educational services (36%), and finance & insurance (35%).

What this residential and business growth means is that Harris County will be called upon to expand its services and infrastructure if it is to maintain the quality of life and business environment enjoyed by its residents and workers. Failing to keep up will bring an erosion of the lifestyles and employment opportunities that attract new growth and investment tomorrow and that enjoyed by the population today.

Impact Fees

Introduction to Impact Fees

Impact fees, examined in this report, present one potential revenue source for funding public facilities that will be needed to serve both existing *and* future residents and workers.

An impact fee is a FEE, not a tax. With taxes—like property taxes and sales taxes—there is no direct relationship between the taxes one pays and the return—the services—that each taxpayer receives. Everyone pays school taxes based on the value of their property, regardless of whether they have one child in school, six children in school or no children at all. A fee, on the other hand, must be related to the service being made available. For instance, only those obtaining a building permit pay the building permit fee (which covers the cost of plan reviews and approvals, and construction inspections). One's water bill is a fee because the amount is based on how much water they used. In the case of impact fees, the amount of each fee is directly related to the County's cost of making particular services available—the cost of recreation facilities, for instance.

Impact Fees Authorized

Impact fees are authorized 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, the County can collect money from new development based on that development's proportionate share—the 'fair share'—of the cost to provide the facilities needed specifically to serve new development. This includes the categories of:

- parks, open space, and recreation areas and related facilities;
- public safety facilities, including law enforcement, fire, emergency medical services, and E-911 emergency communications;
- animal control;
- libraries;
- roads, streets, and bridges;
- stormwater and flood control facilities;
- water supply, treatment, and distribution; and,
- wastewater collection, treatment, and disposal.

Revenue for such facilities can be produced from new development in two ways: through future taxes paid by the homes and businesses that growth creates, and through an impact fee assessed as new

development occurs. The collection of impact fees can help shift the burden for funding these facilities from the tax base as a whole to the new growth and development actually creating the need for these capital improvement projects. This meets the goal that is the essence and basis of impact fees: Everyone—both here today and coming in the future—pays their fair share of the capital improvements needed to serve them on an equal basis.

Focus of This Report

As stated above, under the State impact fee law, impact fees can be collected for several specific public facility categories. This report focuses on **Parks & Recreation** and Public Safety Facilities, specifically **Fire Protection**, **Emergency Medical Services**, **Emergency 911 (E-911)**, and the **Sheriff's Office & Jail** public facilities that will be needed to meet the demands of future growth and development while maintaining the current level of service enjoyed by residents and businesses in the county today. The key is that the capital improvement, whether it is 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.

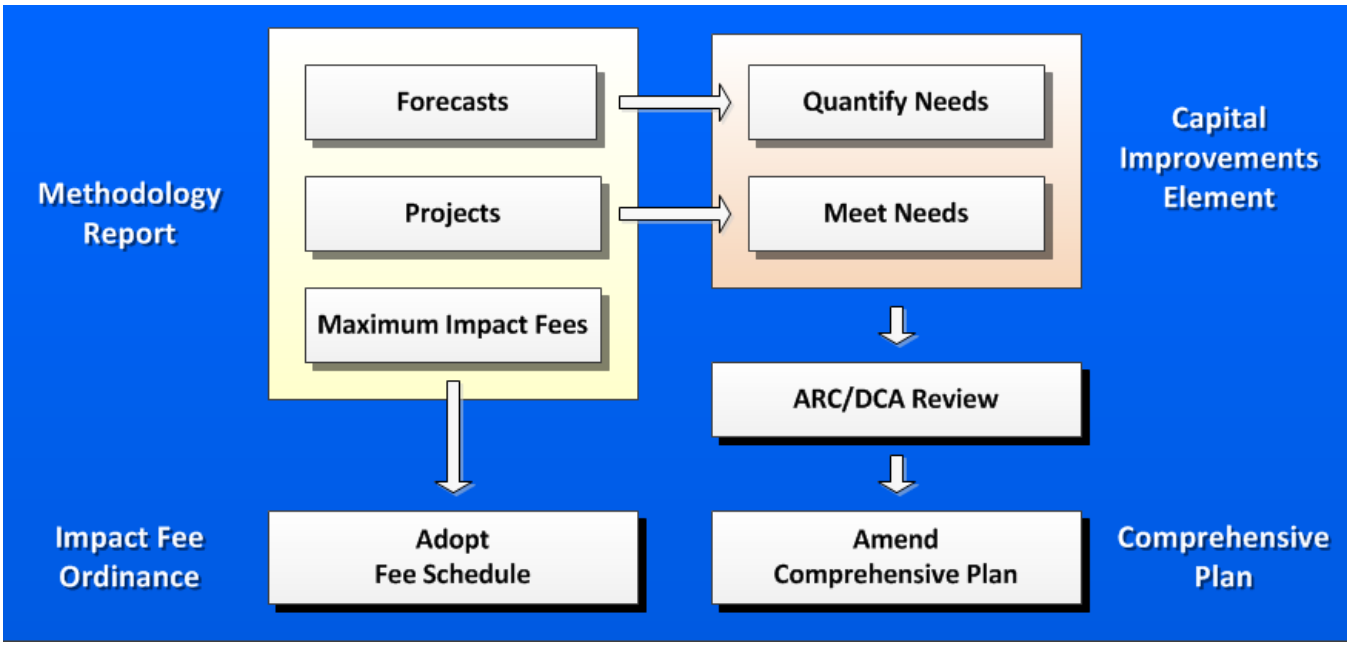
For each public facility category, this report identifies the current level of service provided throughout the county in order to quantify the capital facilities needed to meet future needs. Based on that analysis, calculations have been carried out in order to identify what portion of future capital facilities could be funded through impact fee collections.

In the end, impact fees represent a potential funding source that must be balanced against other needs of the County. In this report the ***maximum*** allowable impact fee for each public facility category has been calculated; this is the most that could be charged. ***The County may adopt a fee less than the maximum but cannot charge more.***

Components of the Impact Fee System

The Harris County Impact Fee System consists of four components, illustrated on the diagram below:

- This **Methodology Report**, which includes:
  - forecasts of population, housing units and employment for the county;
  - capital improvement projects to serve new growth, based on appropriate Level of Service (LOS) standards, for each public facility category; and,
  - the impact cost of new growth and development (and thus the maximum impact fees that could be assessed).
- A **Capital Improvements Element** (CIE) to implement the County's proposed improvements, including a 5-year Community Work Program.
- An **Impact Fee Ordinance**, including an impact fee schedule by land use category.
- The County's **Comprehensive Plan**, which will be amended by the adoption of the CIE.



Cost Adjustments

Calculations related to impact fees are required by law to be made in terms of the 'present value' of past and future costs in current (2021) dollars. For future expenditures, the current cost estimate is inflated to the year when the expenditure will be made, and then is 'discounted' back to 2021 to account for the current value of future money. The Credits and Adjustments chapter of this report provides greater detail.

Three different cost inflators are used in the impact fee calculations, based on the type of project being considered. For infrastructure projects, such as recreation components, a 'construction cost' inflator is used. 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 park land), an inflation rate is used that is based on the Consumer Price Index. Ten-year average rates for these three indices are shown on the table on the right.

Index	10-Year Average Rate
Consumer Price Index (CPI)	1.72%
Construction Cost Index (CCI)*	1.63%
Building Cost Index (BCI)*	2.10%
Discount Rate**	0.00005%

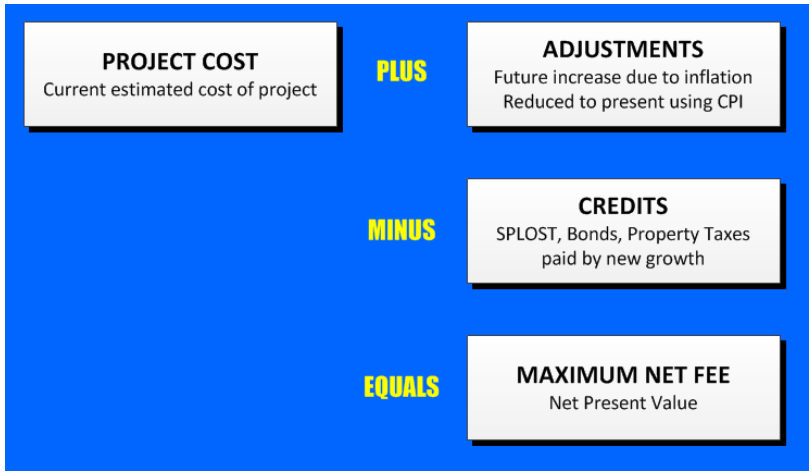
* Source: Engineering News Record, Average Annual Inflation Rates 2010-2020, rounded.

**Avg annual return at prevailing interest rate.

In all cases, the current interest rate that the County receives on its fund balances is used as the 'discount rate' for Net Present Value calculations.

Fee Calculations

Calculating an impact fee involves several operations. These include determining the current cost estimate of each capital expenditure, the determination of that future cost in 2021 dollars using appropriate inflation factors, and the subtraction of credits (if any) for property taxes to avoid double taxation. In this report, the maximum allowable impact fee has been calculated for each public facility category to establish the 'ceiling' allowed under Georgia law.



Editorial Conventions

This report observes the following conventions:

The capitalized word 'County' applies to the government of Harris County, the Board of County 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 Harris 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 report.

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.

Creating the Impact Fee Program

This Methodology Report presents the methodologies used to determine new development's fair share of the County's investment in impact fee eligible capital facilities. This report establishes clear public policies regarding infrastructure development and ensures sound fiscal planning for capital improvements. The report identifies the need for new facilities and includes a compilation of the capital facilities on which impact fee revenue can be spent. The calculations and information contained in this Methodology Report, repeated (as applicable) for each category of public facility for which an impact fee will be charged, are:

- a **projection of needs** for the 24-year planning period—2021 to 2045;
- 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 is being and will be provided;
- a **schedule of projects** listing impact fee related costs for the 24-year planning period;
- a description of **funding sources** for the 24-year planning period;
- the calculation of the **cost impact** of new development, credits, and impact fees; and
- a schedule of **maximum impact fees** that could be adopted, by land use category.

An additional document required for the collection of impact fees is called the Capital Improvements Element (CIE), and is adopted as a chapter, or 'element', in the County's Comprehensive Plan. As defined by the Georgia Department of Community Affairs (DCA), the CIE must include certain calculations and information, which will be drawn from this Methodology Report as applicable. The CIE must be reviewed and approved by DCA. Upon the local government's adoption of the approved CIE and commencement of impact fee collections, an annual reporting requirement called an Annual Update is required to be submitted to DCA. The Annual Update document must include a brief financial report for the last fiscal year and an updated five-year Community Work Program that identifies which projects in the CIE are anticipated to be implemented in the near term.

Investment Recovery

The Georgia Development Impact Fee Act (DIFA) permits recovery by a local government of the cost of providing an improvement that serves new growth and development, even though that cost may have been incurred prior to the adoption of an impact fee ordinance. As with all impact fees, the cost of the portion of the facility meeting current needs must be borne by the locality (i.e., existing taxpayers), with future development being assessed only for the excess capacity that has been made available to serve that future growth in accordance with level of service standards that apply equally to both existing and future development.

Because the amount of dollars eligible to be recovered through an impact fee is based on the capacity available to support future growth and development within the whole system, a value for the existing system must be determined if excess capacity exists.

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, Harris County is preparing this study of the impact of impact fees for the public facility categories noted previously. 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 the specific public facilities, as appropriate to the calculations.

Monitoring Change

A number of the factors that form the base-line assumptions in this report's impact cost calculations may change over time, as noted below. Generally, the impact fee methodologies for the public facilities categories should be reviewed periodically and should reflect changes in the growth and development of the county. Also, the fiscal elements of the impact fee system should be brought up to 'current' dollars to account for inflation.

- The 'planning horizon' of this methodology report is 2045, covering a 24-year time span. When the County's Comprehensive Plan is again updated, the Methodology Report (and impact fee methodologies) should be considered for updating if needed and the horizon extended to 2050.
- The amount of future tax revenue generated by future growth is directly related to the County's population and employment projections. These projections should be reviewed periodically against other data, such as building permits and utility hook-ups, to confirm continuing validity or to modify the methodologies.
- Costs should be maintained in net present value terms. Land, building and equipment costs for public facilities should be updated as costs rise.
- Projections in tax base growth should be updated to reflect actual growth, and to update the average new house values and value/employee then current in future years, if needed.
- Any changes in funding strategy for the facilities included in the impact fee program should be reflected in the impact fee calculation.

Changes in the pace of development will affect the timing of service delivery but not, per se, the methodology used to calculate the impact costs. If more residential and business development is built than was projected, facilities will be needed sooner to meet the Level of Service standard. Tax revenues will increase faster than projected as growth accelerates and more impact fees will be collected. In this way, more funds are produced to provide the services demanded. If growth slows, the opposite occurs: reduced revenue and lowered demand for services.

Reductions in Impact Fee Assessments

Because the state law provides that new growth and development cannot be charged more than their fair proportionate share of the costs of the capital improvements needed to serve it, this Methodology Report calculates the maximum that could be charged as an impact fee in order to establish the 'ceiling' above which the County cannot go. There are, however, several ways that a lower impact fee could be charged, either for a specific project, across the board for all projects, or for a group of specific land use categories that are of special benefit to the County. These are discussed below.

Adoption of Reduced Impact Fees

As noted, the fee schedule in this report shows the **maximum** impact fee that could be adopted under state law. The County may adopt the maximum fee for any given public facility category, or could adopt a lower fee, as part of the locally-adopted Impact Fee Ordinance. In order to fulfill DIFA's

requirement that new growth pay its fair, proportionate share, all fees in a particular public facility category could be reduced proportionally (that is, by the same percentage), but individual land use categories within the particular public facility category cannot be individually reduced or deleted.

Individual Fee Assessment

A landowner or developer may request an individual assessment when the average figures used in this Methodology Report do not apply to the specific project being proposed. This individual assessment determination will be made preferentially on alternate data available regarding the number of housing units or employment characteristics of the specific project, as applicable. Under the appeal procedures of the Impact Fee Ordinance, special circumstances can be considered and approved in modifying the fee for a particular project demonstrably differing from the average values used in this methodology.

Individual Appeals

The Impact Fee Ordinance provides for the appeal by anyone assessed an impact fee, first to the County staff person that is designated as the Impact Fee Administrator[3] and then, if not resolved, to the Board of County Commissioners.

Exemptions

Exemptions from the established impact fee amounts on the adopted Impact Fee Schedule can be adopted by the Board of County Commissioners for development that represents 'extraordinary economic or employment growth' or 'affordable housing'. The exemptions must be spelled out as part of the Impact Fee Ordinance and can be applied by the Board in whole or in part to specified uses based on standards included in the Ordinance or adopted pursuant to the Ordinance provisions.

Limitations on Impact Fees

There are several requirements placed on impact fees by the Georgia Development Impact Fee Act and the rules and regulations of the Georgia Department of Community Affairs. These include:

- Impact fees must be spent in the same public facility category for which they were collected.
- Impact fees must be deposited into an interest-bearing account.
- Impact fees not spent or encumbered within six years must be refunded to the fee payer, with interest.
- The same Level of Service must be applied to both the existing population and to new growth.
- All calculations must be made in Net Present Value.
- Annual Financial Reporting and an update to the County's 5-year Community Work Program Update required each year.

[3] The Impact Fee Administrator is typically the Planning Director or director of the department that issues building permits.

Maximum Impact Fee Schedule

The fee schedule starting on the next page shows the maximum impact fee that ***could*** be charged for each public facility in Harris County for the specific land use categories shown. The County may adopt a fee less than the maximum but cannot charge more.[4]

The land use categories in the fee schedule are the most common uses identified in the *Trip Generation* Manual, 9th Edition, Institute of Transportation Engineers (ITE); the ITE designation is shown in the left-hand column.

The maximum total impact fee shown for each public facility category is drawn from that public facility category's chapter and reflects the reductions for any applicable credits. The maximum total fees include a 3% fee for administration of the Impact Fee Program and an additional 1.5% fee for preparation of the Capital Improvements Element, as allowed by the State's impact fee law.

To read the Maximum Impact Fee Schedule, first find the land use you want to investigate. Land uses are listed on the left side of the table and are grouped into categories. For example, all retail uses are grouped together. Next, find the Maximum Total Impact Fee figure. This is the total impact fee per unit of measure. Finally, find the unit of measure—it is the last column of the land use category. The information can be read as follows: *this land use has a maximum impact fee of $X per unit of measure*.

[4] Regardless of what fee may be initially adopted, the County Board of Commissioners may modify the fee in the future by amending the Impact Fee Ordinance. Such an action would not require modifications to this Methodology Report or review by the Georgia Department of Community Affairs as long as it remains equal to or below the established maximum.

Table 1: Maximum Impact Fee Schedule

Land Use Category	Maximum Impact Fee						Unit of Measure**
	Parks & Recreation	Sheriff's Office	EMS	Fire Protection	E-911	Total Impact Fee*	
Residential							
Single-Family Detached Housing	$ 1,535.0733	$1,108.9883	$ 517.1296	$ 2,495.0965	$1,385.8936	**$ 7,042.1813**	per dwelling
Apartment	$ 1,535.0733	$1,108.9883	$ 517.1296	$ 2,495.0965	$1,385.8936	**$ 7,042.1813**	per dwelling
Residential Condominium/Townhouse	$ 1,535.0733	$1,108.9883	$ 517.1296	$ 2,495.0965	$1,385.8936	**$ 7,042.1813**	per dwelling
Port and Terminal							
Intermodal Truck Terminal	$ -	$ 0.6564	$ 0.3055	$ 1.4745	$ 0.6564	**$ 3.0928**	per square foot
Industrial/Agricultural							
General Light Industrial	$ -	$ 1.0707	$ 0.4985	$ 2.4054	$ 1.3360	**$ 5.3106**	per square foot
General Heavy Industrial	$ -	$ 0.8486	$ 0.3950	$ 1.9064	$ 1.0590	**$ 4.2090**	per square foot
Manufacturing	$ -	$ 0.8320	$ 0.3873	$ 1.8691	$ 1.0382	**$ 4.1266**	per square foot
Warehousing	$ -	$ 0.4244	$ 0.1976	$ 0.9537	$ 0.5298	**$ 2.1055**	per square foot
Mini-Warehouse	$ -	$ 0.0357	$ 0.0165	$ 0.0802	$ 0.0445	**$ 0.1769**	per square foot
High-Cube Warehouse	$ -	$ 0.0352	$ 0.0163	$ 0.0790	$ 0.0438	**$ 0.1743**	per square foot
Lodging							
Hotel or Conference Motel	$ -	$ 264.3424	$ 123.0705	$ 593.8027	$ 329.8258	**$ 1,311.0414**	per room
All Suites Hotel	$ -	$ 231.9872	$ 108.0068	$ 521.1219	$ 289.4555	**$ 1,150.5714**	per room
Motel	$ -	$ 203.9169	$ 94.9380	$ 458.0666	$ 254.4316	**$ 1,011.3531**	per room
Recreational							
Golf Course	$ -	$ 113.9586	$ 53.0559	$ 255.9896	$ 142.1885	**$ 565.1926**	per acre
Bowling Alley	$ -	$ 0.4639	$ 0.2160	$ 1.0422	$ 0.5789	**$ 2.3010**	per square foot
Movie Theater	$ -	$ 0.6817	$ 0.3174	$ 1.5314	$ 0.8507	**$ 3.3812**	per square foot
Arena	$ -	$1,546.4272	$ 719.9737	$ 3,473.7988	$1,929.5106	**$ 7,669.7103**	per acre
Amusement Park	$ -	$4,219.7735	$1,964.6097	$ 9,479.0394	$5,265.1024	**$ 20,928.5250**	per acre
Tennis Courts	$ -	$ 113.1576	$ 52.6831	$ 254.1905	$ 141.1892	**$ 561.2204**	per acre
Racquet/Tennis Club	$ -	$ 0.1423	$ 0.0662	$ 0.3197	$ 0.1776	**$ 0.7058**	per square foot
Health/Fitness Center	$ -	$ 0.3269	$ 0.1521	$ 0.7346	$ 0.4081	**$ 1.6217**	per square foot
Recreational Community Center	$ -	$ 0.5757	$ 0.2680	$ 1.2934	$ 0.7184	**$ 2.8555**	per square foot
Institutional							
Private Elementary School	$ -	$ 0.4556	$ 0.2120	$ 1.0235	$ 0.5685	**$ 2.2596**	per square foot
Private High School	$ -	$ 0.3028	$ 0.1410	$ 0.6805	$ 0.3779	**$ 1.5022**	per square foot
Church/Place of Worship	$ -	$ 0.1611	$ 0.0749	$ 0.3617	$ 0.2008	**$ 0.7985**	per square foot
Day Care Center	$ -	$ 1.3072	$ 0.6085	$ 2.9366	$ 1.6311	**$ 6.4834**	per square foot
Cemetery	$ -	$ 37.7791	$ 17.5889	$ 84.8650	$ 47.1380	**$ 187.3710**	per acre
Medical							
Hospital	$ -	$ 1.3630	$ 0.6346	$ 3.0618	$ 1.7007	**$ 6.7601**	per square foot
Nursing Home	$ -	$ 1.0816	$ 0.5035	$ 2.4296	$ 1.3495	**$ 5.3642**	per square foot
Clinic	$ -	$ 1.8216	$ 0.8480	$ 4.0921	$ 2.2729	**$ 9.0346**	per square foot

*Includes 3% administration fee and a charge for recoupment of the cost to prepare the CIE.

** 'Square foot' means square foot of gross building floor area.

Land Use Category	Maximum Impact Fee						Unit of Measure
	Parks & Recreation	Sheriff's Office	EMS	Fire Protection	E-911	Total Impact Fee	
Office							
General Office Building	$ -	$ 1.5414	$ 0.7177	$ 3.4626	$ 1.9233	**$ 7.65**	per square foot
Corporate Headquarters Building	$ -	$ 1.5890	$ 0.7398	$ 3.5695	$ 1.9826	**$ 7.88**	per square foot
Single-Tenant Office Building	$ -	$ 1.4608	$ 0.6801	$ 3.2816	$ 1.8227	**$ 7.25**	per square foot
Medical-Dental Office Building	$ -	$ 1.8814	$ 0.8758	$ 4.2262	$ 2.3473	**$ 9.33**	per square foot
Research and Development Center	$ -	$ 1.3582	$ 0.6323	$ 3.0515	$ 1.6948	**$ 6.74**	per square foot
Business Park	$ -	$ 1.4287	$ 0.6650	$ 3.2092	$ 1.7824	**$ 7.09**	per square foot
Retail							
Building Materials and Lumber Store	$ -	$ 0.6522	$ 0.3036	$ 1.4653	$ 0.8138	**$ 3.23**	per square foot
Free-Standing Discount Superstore	$ -	$ 0.4452	$ 0.2072	$ 1.0005	$ 0.5556	**$ 2.21**	per square foot
Variety Store	$ -	$ 0.4452	$ 0.2072	$ 1.0005	$ 0.5556	**$ 2.21**	per square foot
Free-Standing Discount Store	$ -	$ 0.9208	$ 0.4287	$ 2.0684	$ 1.1488	**$ 4.57**	per square foot
Hardware/Paint Store	$ -	$ 0.4472	$ 0.2081	$ 1.0046	$ 0.5580	**$ 2.22**	per square foot
Nursery (Garden Center)	$ -	$ 1.4473	$ 0.6737	$ 3.2512	$ 1.8059	**$ 7.18**	per square foot
Nursery (Wholesale)	$ -	$ 0.7733	$ 0.3599	$ 1.7370	$ 0.9647	**$ 3.83**	per square foot
Shopping Center	$ -	$ 0.7748	$ 0.3606	$ 1.7404	$ 0.9666	**$ 3.84**	per square foot
Factory Outlet Center	$ -	$ 0.7748	$ 0.3606	$ 1.7404	$ 0.9666	**$ 3.84**	per square foot
Specialty Retail Center	$ -	$ 0.9196	$ 0.4280	$ 2.0658	$ 1.1474	**$ 4.56**	per square foot
Automobile Sales	$ -	$ 0.7088	$ 0.3299	$ 1.5924	$ 0.8843	**$ 3.52**	per square foot
Auto Parts Store	$ -	$ 0.4452	$ 0.2072	$ 1.0005	$ 1.1474	**$ 2.80**	per square foot
Tire Store	$ -	$ 0.5938	$ 0.2764	$ 1.3339	$ 0.8843	**$ 3.09**	per square foot
Tire Superstore	$ -	$ 0.5938	$ 0.2764	$ 1.3339	$ 0.5556	**$ 2.76**	per square foot
Supermarket	$ -	$ 0.5401	$ 0.2515	$ 1.2133	$ 0.7409	**$ 2.75**	per square foot
Convenience Market (Open 24 Hours)	$ -	$ 0.8350	$ 0.3887	$ 1.8760	$ 0.7409	**$ 3.84**	per square foot
Convenience Market with Gas Pumps	$ -	$ 0.8350	$ 0.3887	$ 1.8760	$ 0.6738	**$ 3.77**	per square foot
Discount Supermarket	$ -	$ 1.0443	$ 0.4862	$ 2.3462	$ 1.0420	**$ 4.92**	per square foot
Wholesale Market	$ -	$ 0.3803	$ 0.1769	$ 0.8543	$ 1.0420	**$ 2.45**	per square foot
Discount Club	$ -	$ 0.6020	$ 0.2803	$ 1.3525	$ 1.3032	**$ 3.54**	per square foot
Home Improvement Superstore	$ -	$ 0.4452	$ 0.2072	$ 1.0005	$ 0.4745	**$ 2.13**	per square foot
Electronics Superstore	$ -	$ 0.4452	$ 0.2072	$ 1.0005	$ 0.7511	**$ 2.40**	per square foot
Apparel Store	$ -	$ 0.7748	$ 0.3606	$ 1.7404	$ 0.5556	**$ 3.43**	per square foot
Department Store	$ -	$ 0.9185	$ 0.4276	$ 2.0636	$ 0.5556	**$ 3.97**	per square foot
Pharmacy/Drugstore	$ -	$ 0.7748	$ 0.3606	$ 1.7404	$ 0.9666	**$ 3.84**	per square foot
Furniture Store	$ -	$ 0.1925	$ 0.0895	$ 0.4326	$ 1.1462	**$ 1.86**	per square foot
Services							
Drive-in Bank	$ -	$ 2.2215	$ 1.0342	$ 4.9905	$ 2.7718	**$ 11.02**	per square foot
Quality Restaurant	$ -	$ 3.4611	$ 1.6114	$ 7.7751	$ 4.3185	**$ 17.17**	per square foot
High-Turnover (Sit-Down) Restauant	$ -	$ 3.4611	$ 1.6114	$ 7.7751	$ 4.3185	**$ 17.17**	per square foot
Fast-Food Restaurant	$ -	$ 5.0571	$ 2.3544	$ 11.3604	$ 6.3100	**$ 25.08**	per square foot
Quick Lubrication Vehicle Shop	$ -	$ 974.3465	$ 453.6288	$ 2,188.7122	$1,215.7132	**$ 4,832.40**	per service bay
Gasoline/Service Station	$ -	$ 74.2358	$ 34.5622	$ 166.7589	$ 92.6257	**$ 368.18**	per pump
Gasoline Station w/Convenience Mkt	$ -	$ 100.2184	$ 46.6588	$ 225.1246	$ 125.0448	**$ 497.05**	per pump
Self-Service Car Wash	$ -	$ 92.7948	$ 43.2026	$ 208.4486	$ 115.7821	**$ 460.23**	per stall

Forecasts

In order to accurately calculate the demand for future services for Harris County, new growth and development must be quantified in future projections. These projections include forecasts for population, households, housing units, and employment to the year 2045. These projections provide the base-line conditions from which the current (2021) or future (2045) Level of Service calculations are produced.

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, and 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 emergency medical services.

The projections used for the Sheriff's Office & Jail and the Parks & Recreation public facility categories are countywide forecasts because these services are delivered by Harris County throughout the county and are available to all residents regardless of the whether a municipal police department or recreation department provides similar services within the incorporated areas. However, projections used for Fire Protection, Emergency Medical Services, and E-911 services are countywide *outside* of West Point because these services are provided throughout the county with the exception of that city. West Point has established Fire, EMS and E-911 departments of its own.

Historic Population Growth

Every year, the US Census Bureau estimates the population in Harris County between decennial censuses (e.g., 2000 and 2010). After a decennial census, the Bureau revises the annual estimates based 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 2.

Table 2: Annual Census Estimated Population

	Population Estimate (as of July 1)									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Harris County	23,912	24,547	25,327	26,256	27,180	28,170	29,289	30,276	30,807	31,494
Hamilton	435	488	559	627	670	744	793	866	899	978
Pine Mountain	1,116	1,119	1,129	1,146	1,163	1,183	1,207	1,225	1,225	1,233
Shiloh	430	428	428	432	435	439	446	449	446	445
Waverly Hall	689	686	701	712	706	721	721	735	722	736
West Point (part)	793	793	796	805	815	825	840	849	848	848
Unincorporated	20,449	21,033	21,714	22,534	23,391	24,258	25,282	26,152	26,667	27,254

	Population Estimate (as of July 1)									
	2010*	2011	2012	2013	2014	2015	2016	2017	2018	2019
Harris County	32,149	32,307	32,570	32,532	32,737	33,155	33,633	33,943	34,560	35,236
Hamilton	1,021	1,026	1,028	1,009	1,053	1,057	1,077	1,110	1,132	1,117
Pine Mountain	1,304	1,309	1,319	1,317	1,327	1,340	1,358	1,370	1,394	1,417
Shiloh	442	444	448	447	450	457	464	467	477	486
Waverly Hall	738	735	736	734	736	751	756	755	749	807
West Point (part)	866	870	877	876	881	893	906	914	931	949
Unincorporated	26,597	26,838	26,975	27,236	27,632	28,092	28,662	29,140	29,585	29,904

* 2010 estimate revised by Census Bureau in 2019.

Note: All data as of July 1 of each year. 2000 and 2010 differ from Decennial Census counts, which were as of April 1.

Sources: For 2000 to 2009: *Intercensal Estimates 2000-2010*, US Bureau of the Census. For 2010 to 2019: *Census Annual Estimates Program*, US Bureau of the Census.

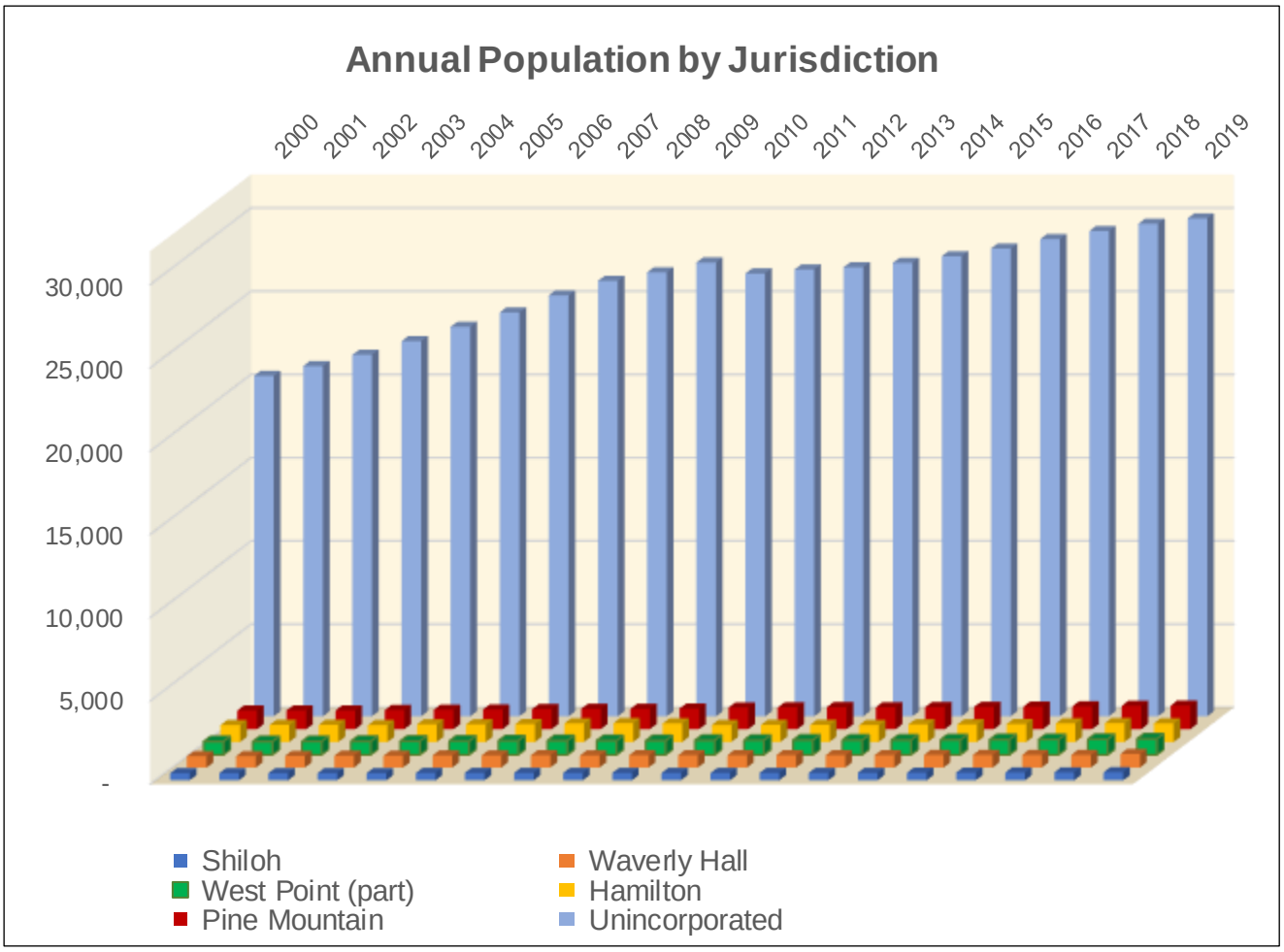
As shown by Table 2, Harris County posted a percentage increase in population between 2000 and 2019 overall of 47.36%; however, growth from 2000 to 2010 registered a higher growth increase for just those 10 years (34.45%) than the more recent 2010-2019 period (9.6%). Comparing the recent 9-year period to the previous 10-year period is not enough to explain the difference. Clearly the Great Recession, which began in mid-2008, had a notable impact on the housing industry and then the economy in general, affecting the county as well.

Reviewing the annual population estimates by the Census Bureau shown on Table 2, the annual percentage increase in population from 2000 through 2007 averaged 3.43% (from a low of 2.66% to a high of 3.97% in 2006). Reflecting the full impact of the recession during 2008 and continuing to 2014, this dropped to an average annual increase of only 1.13%. Since then, population growth has recovered somewhat, experiencing an annual low of 0.92% (in 2017) to a high of 1.96% (in 2019), an overall average of 1.48% during the recovery.

Population growth in Harris County has been dominated by growth in the unincorporated area. This is clearly illustrated in the data and chart on Table 3.

Table 3: Population Growth by Jurisdiction

	2000-2010		2010-2019		Total 2000-2019	
	Number Increase	Percent Increase	Number Increase	Percent Increase	Number Increase	Percent Increase
Harris County	8,237	34.45%	3,087	9.60%	11,324	47.36%
Hamilton	586	134.71%	96	9.40%	682	156.78%
Pine Mountain	188	16.85%	113	8.67%	301	26.97%
Shiloh	12	2.79%	44	9.95%	56	13.02%
Waverly Hall	49	7.11%	69	9.35%	118	17.13%
West Point (part)	73	9.21%	83	9.58%	156	19.67%
Unincorporated	6,148	30.07%	3,307	12.43%	9,455	46.24%



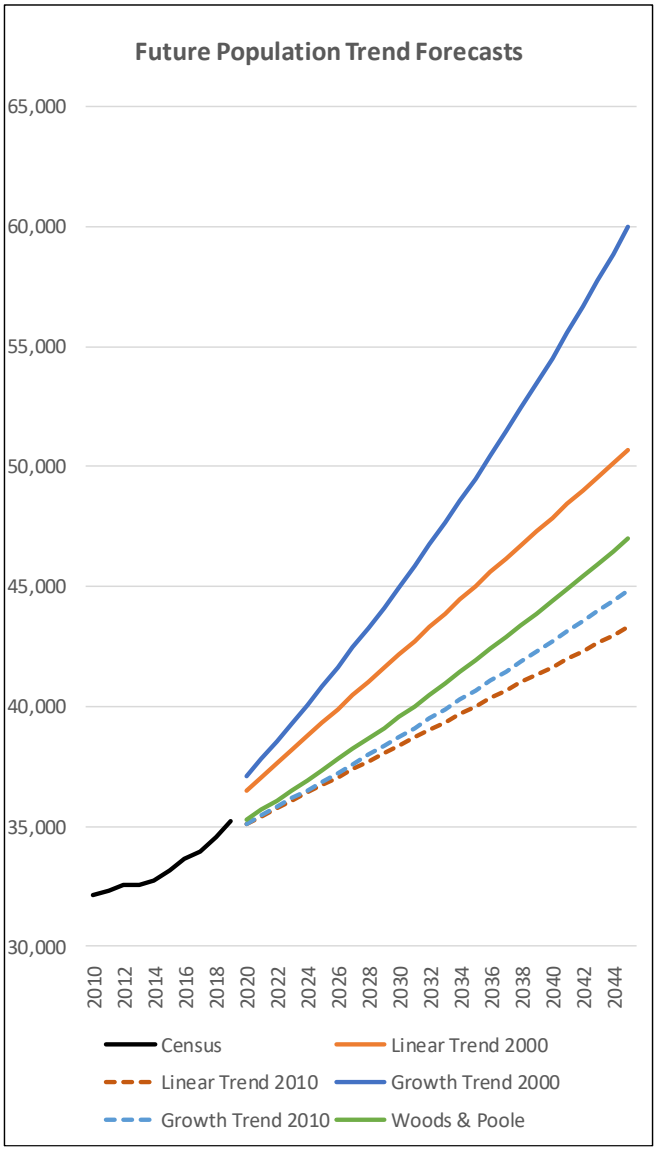
Unincorporated area growth underpins the forecasts to 2045 made in the next Section.

Population Forecasts

Two forecast methods were 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. Table 4 shows the results using both the Census estimates for 2000-2019 and the nearer term estimates for 2010-2019. The raw numbers of each projection method are shown.

Table 4: Future Population Trend Comparisons

	Linear Trend		Growth Trend		Woods & Poole
	2000 to 2045	2010 to 2045	2000 to 2045	2010 to 2045	
2000	25,099		25,242		23,912
2001	25,668		25,732		24,547
2002	26,237		26,232		25,327
2003	26,806		26,742		26,256
2004	27,375		27,262		27,180
2005	27,944		27,791		28,170
2006	28,513		28,331		29,289
2007	29,082		28,882		30,276
2008	29,651		29,443		30,807
2009	30,220		30,015		31,494
2010	30,788	31,806	30,598	31,833	32,153
2011	31,357	32,134	31,193	32,147	32,309
2012	31,926	32,462	31,799	32,463	32,575
2013	32,495	32,790	32,417	32,783	32,539
2014	33,064	33,118	33,047	33,105	32,742
2015	33,633	33,446	33,689	33,431	33,159
2016	34,202	33,774	34,343	33,760	33,632
2017	34,771	34,103	35,011	34,093	33,943
2018	35,340	34,431	35,691	34,428	34,475
2019	35,909	34,759	36,385	34,767	34,873
2020	36,478	35,087	37,092	35,109	35,275
2021	37,047	35,415	37,812	35,455	35,682
2022	37,616	35,743	38,547	35,804	36,094
2023	38,185	36,071	39,296	36,156	36,510
2024	38,753	36,399	40,059	36,512	36,931
2025	39,322	36,727	40,838	36,871	37,357
2026	39,891	37,056	41,631	37,234	37,788
2027	40,460	37,384	42,440	37,601	38,224
2028	41,029	37,712	43,265	37,971	38,665
2029	41,598	38,040	44,106	38,345	39,111
2030	42,167	38,368	44,963	38,722	39,563
2031	42,736	38,696	45,836	39,103	40,019
2032	43,305	39,024	46,727	39,488	40,481
2033	43,874	39,352	47,635	39,877	40,948
2034	44,443	39,681	48,560	40,269	41,420
2035	45,012	40,009	49,504	40,665	41,898
2036	45,581	40,337	50,466	41,066	42,381
2037	46,149	40,665	51,446	41,470	42,870
2038	46,718	40,993	52,446	41,878	43,365
2039	47,287	41,321	53,465	42,290	43,865
2040	47,856	41,649	54,504	42,706	44,371
2041	48,425	41,977	55,563	43,127	44,883
2042	48,994	42,306	56,642	43,551	45,401
2043	49,563	42,634	57,743	43,980	45,925
2044	50,132	42,962	58,865	44,413	46,454
2045	50,701	43,290	60,009	44,850	46,990



Given the proposition that recovering from the Great Recession is an indication of future growth in the county, and that in the long run future growth will ultimately reflect growth over the past two decades, the 'growth trend 2000' projection most clearly reflects the future population growth to 2045. As population growth has steadily recovered since 2010 (as illustrated on the graph on Table 4), the 'growth trend 2000' projection curve most clearly represents the continuation of this recovery.

Correlating with the Census

The algorithms used to prepare the projections shown on Table 4 present a 'smooth' line from the 'start' date (2000 or 2010 depending on the projection period chosen), which also changes the population figures from the actual census data (shown on Table 2).

Because of this, the projected future population estimate for the county must be rectified so that the 2019 population figure (35,236) is the 'start' population for the forecast.

The actual Census estimate for 2019 (35,236) is about 97% (specifically 96.843295%) of the 2019 projected figure of 36,385. The full percentage is applied to each of the 'growth trend 2000' projected figures from 2019 on in order to create a smooth forecast to 2045.

The result is shown on Table 5 on the next page.

City Population Forecasts

Also shown on Table 5 are population forecasts for each of the incorporated areas in the county. Subtracting out the cities yields the population located in the unincorporated area.

Future population figures for the cities were calculated as follows:

For each city, the percentage of the county's total population located in the city was determined. For projection purposes, it is assumed that each city will grow in pace with overall growth in the county as a whole. Thus, the 2019 percentage was applied to the county total for each city to produce the stream of increased population figures.

Service Area Population Forecasts

More elaborate forecast methodologies were not applied to the cities because, with the exception of West Point, several of the public facility categories are countywide in the services they provide. For these countywide service areas, only the total county population applies.

West Point, on the other hand, has its own Fire and EMS Department, as well as its own E-911 Division. The service area for the County's Fire, EMS and E-911 services would therefore be all of the county except the portion of West Point that is located in Harris County.

These population projections for the county as a whole, West Point, and the remainder of the county (the unincorporated area and all of the cities except West Point) are shown on Table 6.

Table 5: Growth Trend Forecasts Rectified to Census

	County Total	Hamilton	Pine Mountain	Shiloh	Waverly Hall	West Point (pt)	Unincor-porated
2000	23,912	435	1,116	430	689	793	20,449
2001	24,547	488	1,119	428	686	793	21,033
2002	25,327	559	1,129	428	701	796	21,714
2003	26,256	627	1,146	432	712	805	22,534
2004	27,180	670	1,163	435	706	815	23,391
2005	28,170	744	1,183	439	721	825	24,258
2006	29,289	793	1,207	446	721	840	25,282
2007	30,276	866	1,225	449	735	849	26,152
2008	30,807	899	1,225	446	722	848	26,667
2009	31,494	978	1,233	445	736	848	27,254
2010	32,149	1,021	1,304	442	738	866	26,597
2011	32,307	1,026	1,309	444	735	870	26,838
2012	32,570	1,028	1,319	448	736	877	26,975
2013	32,532	1,009	1,317	447	734	876	27,236
2014	32,737	1,053	1,327	450	736	881	27,632
2015	33,155	1,057	1,340	457	751	893	28,092
2016	33,633	1,077	1,358	464	756	906	28,662
2017	33,943	1,110	1,370	467	755	914	29,140
2018	34,560	1,132	1,394	477	749	931	29,585
2019	35,236	1,117	1,417	486	807	949	29,904
2020	35,921	1,139	1,445	495	823	967	31,052
2021	36,619	1,161	1,473	505	839	986	31,656
2022	37,330	1,183	1,501	515	855	1,005	32,270
2023	38,055	1,206	1,530	525	872	1,025	32,897
2024	38,795	1,230	1,560	535	889	1,045	33,537
2025	39,549	1,254	1,590	545	906	1,065	34,188
2026	40,317	1,278	1,621	556	923	1,086	34,852
2027	41,101	1,303	1,653	567	941	1,107	35,530
2028	41,899	1,328	1,685	578	960	1,128	36,220
2029	42,713	1,354	1,718	589	978	1,150	36,924
2030	43,543	1,380	1,751	601	997	1,173	37,641
2031	44,389	1,407	1,785	612	1,017	1,196	38,372
2032	45,252	1,435	1,820	624	1,036	1,219	39,118
2033	46,131	1,462	1,855	636	1,057	1,242	39,878
2034	47,027	1,491	1,891	649	1,077	1,267	40,653
2035	47,941	1,520	1,928	661	1,098	1,291	41,443
2036	48,873	1,549	1,965	674	1,119	1,316	42,249
2037	49,822	1,579	2,004	687	1,141	1,342	43,069
2038	50,790	1,610	2,042	701	1,163	1,368	43,906
2039	51,777	1,641	2,082	714	1,186	1,394	44,759
2040	52,783	1,673	2,123	728	1,209	1,422	45,629
2041	53,809	1,706	2,164	742	1,232	1,449	46,516
2042	54,854	1,739	2,206	757	1,256	1,477	47,419
2043	55,920	1,773	2,249	771	1,281	1,506	48,340
2044	57,007	1,807	2,293	786	1,306	1,535	49,280
2045	58,114	1,842	2,337	802	1,331	1,565	50,237

Table 6: Service Area Population Forecasts 2021-2045

	County Total	West Point	Net County Total*
2020	35,921	967	34,954
2021	36,619	986	35,633
2022	37,330	1,005	36,325
2023	38,055	1,025	37,030
2024	38,795	1,045	37,750
2025	39,549	1,065	38,484
2026	40,317	1,086	39,231
2027	41,101	1,107	39,994
2028	41,899	1,128	40,771
2029	42,713	1,150	41,563
2030	43,543	1,173	42,370
2031	44,389	1,196	43,193
2032	45,252	1,219	44,033
2033	46,131	1,242	44,889
2034	47,027	1,267	45,760
2035	47,941	1,291	46,650
2036	48,873	1,316	47,557
2037	49,822	1,342	48,480
2038	50,790	1,368	49,422
2039	51,777	1,394	50,383
2040	52,783	1,422	51,361
2041	53,809	1,449	52,360
2042	54,854	1,477	53,377
2043	55,920	1,506	54,414
2044	57,007	1,535	55,472
2045	58,114	1,565	56,549
Increase 2021-45	21,495	579	20,916

* The portion of the county outside of West Point, including the unincorporated area and all of the other cities.

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.

Household Projections

First, future population numbers from Table 5 are converted into the number of households expected in future years in the county as a whole, for each city, and for the unincorporated area.

This conversion is based on the average household size data taken from the 2010 Census for the county as a whole and for each city (the most recent reliable data available). These figures differ for each jurisdiction, and it is assumed that these ratios will persist into the future. The number of households in the unincorporated area of the county is determined by subtracting all of the city household numbers from the countywide total.

The results are shown on Table 7 on the following page.

Table 7: Households 2021-2045

	County Total	Hamilton	Pine Mountain	Shiloh	Waverly Hall	West Point (pt)	Unincor-porated
2020	13,262	3,747	618	193	269	398	8,037
2021	13,519	3,820	630	196	274	406	8,193
2022	13,782	3,894	643	200	279	414	8,352
2023	14,050	3,969	655	204	285	422	8,514
2024	14,323	4,047	668	208	290	430	8,680
2025	14,601	4,125	681	212	296	439	8,849
2026	14,885	4,205	694	216	302	447	9,020
2027	15,174	4,287	708	220	307	456	9,196
2028	15,469	4,370	721	225	313	465	9,374
2029	15,769	4,455	735	229	319	474	9,557
2030	16,076	4,542	750	233	326	483	9,742
2031	16,388	4,630	764	238	332	492	9,932
2032	16,707	4,720	779	243	338	502	10,125
2033	17,031	4,812	794	247	345	512	10,321
2034	17,362	4,905	810	252	352	522	10,522
2035	17,699	5,001	825	257	359	532	10,726
2036	18,044	5,098	841	262	365	542	10,935
2037	18,394	5,197	858	267	373	553	11,147
2038	18,751	5,298	874	272	380	563	11,364
2039	19,116	5,401	891	278	387	574	11,585
2040	19,487	5,506	909	283	395	585	11,810
2041	19,866	5,613	926	289	402	597	12,039
2042	20,252	5,722	944	294	410	608	12,273
2043	20,645	5,833	963	300	418	620	12,511
2044	21,047	5,946	981	306	426	632	12,755
2045	21,455	6,062	1,001	312	435	644	13,002
Increase 2021-45	7,936	2,242	370	115	161	238	4,809
Average HH Size	2.7086	0.3039	2.3358	2.5723	3.0625	2.4286	3.8597

Note: Average household sizes are computed for each jurisdiction individually from 2010 Census data.

New Housing Units

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 and in each city.

This is accomplished by increasing the number of households in each jurisdiction with the vacancy rate reported in the 2010 Census (the latest and best available data). As above, these ratios are assumed to continue at the same ratio each year into the future on average.

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 vacancy rate. These calculations are shown on Table 8.

Table 8: Housing Units 2021-2045

	County Total	Hamilton	Pine Mountain	Shiloh	Waverly Hall	West Point (pt)	Unincor-porated
2020	15,027	4,321	802	225	306	428	8,945
2021	15,319	4,405	817	229	312	436	9,120
2022	15,617	4,490	833	234	318	445	9,297
2023	15,920	4,577	849	238	324	453	9,479
2024	16,230	4,666	866	243	330	462	9,663
2025	16,545	4,757	883	248	336	471	9,850
2026	16,866	4,849	900	252	343	480	10,042
2027	17,194	4,944	917	257	350	490	10,236
2028	17,528	5,040	935	262	356	499	10,436
2029	17,869	5,138	953	267	363	509	10,639
2030	18,216	5,237	972	273	370	519	10,845
2031	18,570	5,339	991	278	378	529	11,055
2032	18,931	5,443	1,010	283	385	539	11,271
2033	19,299	5,549	1,029	289	392	550	11,490
2034	19,673	5,656	1,049	294	400	560	11,714
2035	20,056	5,766	1,070	300	408	571	11,941
2036	20,446	5,878	1,091	306	416	582	12,173
2037	20,843	5,993	1,112	312	424	594	12,408
2038	21,248	6,109	1,133	318	432	605	12,651
2039	21,661	6,228	1,155	324	440	617	12,897
2040	22,081	6,349	1,178	330	449	629	13,146
2041	22,511	6,472	1,201	337	458	641	13,402
2042	22,948	6,598	1,224	343	467	654	13,662
2043	23,394	6,726	1,248	350	476	666	13,928
2044	23,848	6,857	1,272	357	485	679	14,198
2045	24,312	6,990	1,297	364	494	692	14,475
Increase 2021-45	8,993	2,585	480	135	182	256	5,355
Vacancy Rate	13.3130%	15.3156%	29.6226%	16.7630%	13.7500%	7.4286%	11.3677%

Note: Vacany rates for the County and its cities are computed individually from 2010 Census data.

Employment Forecasts

For the employment projections, we looked first to the countywide forecasts prepared by Woods & Poole (W&P). W&P counts jobs, not just employed people, which captures 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 9 on the following page, the number of jobs shown include the types of jobs that would not be associated with an impact fee (such as farm workers, itinerant construction workers and governmental employees). The remaining employment, called the 'value-added jobs', would be businesses subject to impact fees.

The Woods & Poole job numbers have been adjusted for Harris County because of an apparent undercount by Woods & Poole. The population forecast for Harris County by Woods & Poole to 2045 is only 46,990, compared to the population forecast for this report at 58,114, which is 24% higher. Looking at every year since 2020, the population forecast in this report is 3% higher in 2021 and progressively increases every year to 2045.

The jobs numbers shown on Table 9 for each year have therefore been adjusted across the board by the applicable percentage representing the 'undercount' in the year indicated.

Table 9: County-wide Employment Forecast (Jobs)

	2020	2021	2025	2030	2035	2040	2045	2021-2045 Change	
								Number	Percent
Total Employment	**10,901**	**11,110**	**11,918**	**12,947**	**14,022**	**15,160**	**16,374**	**5,264**	**32.1%**
Farm Employment	261	263	272	284	295	308	321	58	18.1%
Forestry, Fishing	94	95	101	107	113	120	126	31	24.6%
Mining	30	32	35	41	50	59	70	38	54.3%
Construction	917	936	1,017	1,127	1,248	1,379	1,525	589	38.6%
Total Non-Building	**1,302**	**1,326**	**1,425**	**1,559**	**1,706**	**1,866**	**2,042**	**716**	**35.1%**
Federal Civilian	61	61	63	65	67	71	74	13	17.6%
Federal Military	96	96	99	103	108	113	117	21	17.9%
State & Local Government	1,369	1,389	1,474	1,583	1,699	1,822	1,950	561	28.8%
Total Government	**1,526**	**1,546**	**1,636**	**1,751**	**1,874**	**2,006**	**2,141**	**595**	**27.8%**
Utilities	57	56	57	58	59	60	61	5	8.2%
Manufacturing	1,281	1,295	1,331	1,382	1,433	1,488	1,542	247	16.0%
Wholesale Trade	147	150	160	169	177	185	194	44	22.7%
Retail Trade	781	798	846	893	935	974	1,013	215	21.2%
Transportation & Warehousing	534	545	589	647	708	771	839	294	35.0%
Information	54	54	57	60	64	68	72	18	25.0%
Finance & Insurance	552	572	643	717	776	822	857	285	33.3%
Real Estate	627	658	794	991	1,229	1,516	1,863	1,205	64.7%
Professional & Technical Services	375	383	413	448	482	516	549	166	30.2%
Management of Companies	4	4	4	5	5	5	5	1	20.0%
Administrative & Waste Services	679	694	753	831	911	996	1,087	393	36.2%
Educational Services	241	247	269	295	321	348	373	126	33.8%
Health Care & Social Assistance	793	802	838	884	930	969	1,004	202	20.1%
Arts, Entertainment & Recreation	380	384	401	423	443	463	483	99	20.5%
Accommodation & Food Services	560	567	590	616	639	661	681	114	16.7%
Other Private Services	1,008	1,029	1,112	1,218	1,330	1,446	1,568	539	34.4%
Total Value-Added	**8,073**	**8,238**	**8,857**	**9,637**	**10,442**	**11,288**	**12,191**	**3,953**	**32.4%**

Source: Woods & Poole Economics, Inc., 2020 Georgia Data Book, Harris County, as adjusted.

Table 10 provides a summary of future jobs in Harris County taken from Table 9 for the years shown on that table and interpolated for each year in between. As noted above, it is the 'value-added' jobs that impact fees can be applied to.

Table 10: Summary - Countywide Jobs

	Total Jobs	Non-Building Related	Government	Value-Added Jobs
2021	11,110	1,326	1,546	**8,238**
2022	11,312	1,351	1,569	**8,393**
2023	11,514	1,376	1,591	**8,548**
2024	11,716	1,400	1,614	**8,702**
2025	11,918	1,425	1,636	**8,857**
2026	12,124	1,452	1,659	**9,013**
2027	12,330	1,479	1,682	**9,169**
2028	12,535	1,505	1,705	**9,325**
2029	12,741	1,532	1,728	**9,481**
2030	12,947	1,559	1,751	**9,637**
2031	13,162	1,588	1,776	**9,798**
2032	13,377	1,618	1,800	**9,959**
2033	13,592	1,647	1,825	**10,120**
2034	13,807	1,677	1,849	**10,281**
2035	14,022	1,706	1,874	**10,442**
2036	14,250	1,738	1,900	**10,611**
2037	14,477	1,770	1,927	**10,780**
2038	14,705	1,802	1,953	**10,950**
2039	14,932	1,834	1,980	**11,119**
2040	15,160	1,866	2,006	**11,288**
2041	15,403	1,901	2,033	**11,469**
2042	15,646	1,936	2,060	**11,649**
2043	15,888	1,972	2,087	**11,830**
2044	16,131	2,007	2,114	**12,010**
2045	16,374	2,042	2,141	**12,191**
Increase 2021-45	5,264	716	595	**3,953**

Service Area Forecasts

Various county services are each provided in one of two service areas. Housing unit, population, and employment forecasts are presented on the following tables for each service area.

The service area is *countywide* for the Sheriff's Office & Jail and the Parks & Recreation public facility categories. These services are delivered by Harris County throughout the county and are available to all residents regardless of the whether a municipal police department or recreation department provides similar services within the incorporated areas. Countywide growth forecasts are shown on Table 11 for these services.

For Parks & Recreation services, only new residential development is assessed impact fees. Accordingly, impact fees are assessed exclusively on the basis of housing units. For the Sheriff and Jail, fees are based on the day-night population (i.e., residents and employee) because both residential and nonresidential development is assessed impact fees.

The service area is *countywide outside of West Point* for Fire Protection, EMS, and E-911 services. These services are provided throughout the county with the exception of West Point. That city has established Fire, EMS and E-911 departments of its own.

For Fire Protection, EMS, and E-911, impact fees are based on future growth throughout the county but excluding the portion of West Point that is inside the county. For each of these public facility categories, impact fees for residential uses are assessed on the basis of housing unit growth, while nonresidential uses are assessed using future growth in the 'day-night' population. See Table 12.

Table 11: Future Growth Forecasts - Countywide

	Residential Uses	Nonresidential Uses		
	Housing Units	Population	Value-Added Jobs	Day-Night Population
2020	15,027	35,921	8,073	43,994
2021	15,319	36,619	8,238	44,857
2022	15,617	37,330	8,393	45,723
2023	15,920	38,055	8,548	46,603
2024	16,230	38,795	8,702	47,497
2025	16,545	39,549	8,857	48,406
2026	16,866	40,317	9,013	49,330
2027	17,194	41,101	9,169	50,270
2028	17,528	41,899	9,325	51,224
2029	17,869	42,713	9,481	52,194
2030	18,216	43,543	9,637	53,180
2031	18,570	44,389	9,798	54,187
2032	18,931	45,252	9,959	55,211
2033	19,299	46,131	10,120	56,251
2034	19,673	47,027	10,281	57,308
2035	20,056	47,941	10,442	58,383
2036	20,446	48,873	10,611	59,484
2037	20,843	49,822	10,780	60,602
2038	21,248	50,790	10,950	61,740
2039	21,661	51,777	11,119	62,896
2040	22,081	52,783	11,288	64,071
2041	22,511	53,809	11,469	65,278
2042	22,948	54,854	11,649	66,503
2043	23,394	55,920	11,830	67,750
2044	23,848	57,007	12,010	69,017
2045	24,312	58,114	12,191	70,305
Increase 2021-45	8,993	**21,495**	**3,953**	25,448

Table 12: Future Growth Forecasts - Countywide Excluding West Point

	Residential Uses	Nonresidential Uses		
	Housing Units	Population	Value-Added Jobs	Day-Night Population
2020	14,599	34,954	7,856	42,810
2021	14,883	35,633	8,016	43,649
2022	15,172	36,325	8,167	44,492
2023	15,467	37,030	8,317	45,347
2024	15,768	37,750	8,468	46,218
2025	16,074	38,484	8,618	47,102
2026	16,386	39,231	8,770	48,001
2027	16,704	39,994	8,922	48,916
2028	17,029	40,771	9,074	49,845
2029	17,360	41,563	9,226	50,789
2030	17,697	42,370	9,377	51,747
2031	18,041	43,193	9,534	52,727
2032	18,392	44,033	9,691	53,724
2033	18,749	44,889	9,847	54,736
2034	19,113	45,760	10,004	55,764
2035	19,485	46,650	10,161	56,811
2036	19,864	47,557	10,325	57,882
2037	20,249	48,480	10,490	58,970
2038	20,643	49,422	10,655	60,077
2039	21,044	50,383	10,819	61,202
2040	21,452	51,361	10,984	62,345
2041	21,870	52,360	11,160	63,520
2042	22,294	53,377	11,335	64,712
2043	22,728	54,414	11,511	65,925
2044	23,169	55,472	11,687	67,159
2045	23,620	56,549	11,863	68,412
Increase 2021-45	8,737	**20,916**	**3,847**	24,763

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 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 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 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 when the expenditure will be made. 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 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 Net Discount Rate. Essentially, 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 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 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 infrastructure projects, a 'construction cost inflator' is used. For projects that require construction of a structure (such as a fire station expansion), a 'building 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 Construction Cost Index (CCI) and a Building Cost Index (BCI) 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.

Construction Cost Inflator

Table 13 uses the example of a calculation of the annual average rate of increase reflected in construction costs. For this analysis, the 2010-2020 ten-year period is used as a base time period for an estimate of future construction cost increases due to inflation in labor and materials costs.

Table 13: Construction Cost Inflator – CCI

Year	Amount	CCI*		Effect of Inflation	
		1913=100	2010=1.0	CCI	Avg. Rate =
					1.6291673%
2010	$ 100,000.00	5,742.83	1.000000	$ 100,000.00	$ 100,000.00
2011		5,829.65	1.015118	101,511.78	$ 101,629.17
2012		5,892.64	1.026087	102,608.66	$ 103,284.88
2013		5,983.23	1.041861	104,186.15	$ 104,967.56
2014		6,147.52	1.070469	107,046.94	$ 106,677.66
2015		6,245.74	1.087572	108,757.20	$ 108,415.61
2016		6,277.14	1.093039	109,303.91	$ 110,181.89
2017		6,433.18	1.120212	112,021.20	$ 111,976.93
2018		6,592.98	1.148037	114,803.70	$ 113,801.23
2019		6,681.50	1.163450	116,345.04	$ 115,655.24
2020		6,750.41	1.175450	117,545.04	$ 117,539.45
				$ 1,194,129.62	$ 1,194,129.62

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

The table above shows a construction project that cost $100,000 in 2010, and how much the same project would cost in each subsequent year using the Construction Cost Index published by Engineering News Record for the Atlanta area. Setting the 2010 Construction Cost Index (CCI) at '1.0,' the increase in the CCI as a multiple of 2010 is also shown on the table. The equivalent cost of the same project in each subsequent year is calculated by multiplying the CCI multiplier times $100,000. When the total for all such projects is summed for the 2010-2020 period, 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 infrastructure construction projects that will begin in future years.

Building Cost Inflator

The inflator for future construction costs for buildings is based on ENR's Building Cost Index (BCI) for each year from 2010 through 2020, and is calculated in the same manner as described above for the Construction Cost Inflator. Table 14 shows the results.

Table 14: Building Cost Inflator – BCI

Year	Amount	BCI*		Effect of Inflation	
		1913=100	2010=1.0	BCI	Avg. Rate =
					2.1015000%
2010	$ 100,000.00	3,736.56	1.000000	$ 100,000.00	$ 100,000.00
2011		3,837.47	1.027007	$ 102,700.70	$ 102,101.50
2012		3,970.93	1.062725	$ 106,272.51	$ 104,247.16
2013		4,022.11	1.076421	$ 107,642.11	$ 106,437.92
2014		4,076.81	1.091061	$ 109,106.07	$ 108,674.71
2015		4,108.05	1.099420	$ 109,942.02	$ 110,958.51
2016		4,126.72	1.104418	$ 110,441.79	$ 113,290.30
2017		4,278.39	1.145010	$ 114,500.96	$ 115,671.10
2018		4,408.94	1.179947	$ 117,994.71	$ 118,101.93
2019		4,523.59	1.210631	$ 121,063.09	$ 120,583.84
2020		4,615.43	1.235209	$ 123,520.92	$ 123,117.91
				$ 1,223,184.88	$ 1,223,184.88

* Building 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 15 shows the CPI figures for every year since 1982, updated to the most recently reported year (2019).

Using an annual expenditure of $10,000 as an example, the multipliers on Table 15 yield the figures shown for the CPI on the table under the 'present value' heading. Cumulatively, the $380,000 spent over the 1982-2019 period would have a total present value of $600,974.62 in today's dollars. Considering the present value figures for the $10,000 annual expenditures, an average annual inflation rate of more than 2.572% yields the same total amount over the 1982-2019 period.

The 37-year average of annual CPI change (the period of 1982-2019) shown on Table 15 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. While the historic CPI multipliers reflect the

swings in inflation in the past, these rates have moderated somewhat in recent years as inflation has become a primary target of federal monetary policy.

Looking only at the change in CPI for the ten years from 2009 to 2019, an average annual inflation rate of slightly less than 1.72% best captures the change over that period. This lower inflation rate (compared to the 1982-2019 period) is assumed to be experienced 'on average' in future years, and is used for inflator calculations for future non-construction expenditures.

Table 15: Non-Construction Cost Inflator – CPI

Year	Amount	CPI* 1982-84=100	CPI* 2019=1.0	Present Value: CPI	Long Term Inflator = 2.33280065%	10-Year Inflator = 1.719932%
1982	$ 10,000.00	96.50	2.64929	$ 26,492.91	$ 23,471.99	
1983	$ 10,000.00	99.60	2.56683	$ 25,668.33	$ 22,936.91	
1984	$ 10,000.00	103.90	2.46060	$ 24,606.02	$ 22,414.04	
1985	$ 10,000.00	107.60	2.37599	$ 23,759.91	$ 21,903.08	
1986	$ 10,000.00	109.60	2.33263	$ 23,326.33	$ 21,403.78	
1987	$ 10,000.00	113.60	2.25050	$ 22,504.98	$ 20,915.85	
1988	$ 10,000.00	118.30	2.16109	$ 21,610.87	$ 20,439.05	
1989	$ 10,000.00	124.00	2.06175	$ 20,617.47	$ 19,973.12	
1990	$ 10,000.00	130.70	1.95606	$ 19,560.56	$ 19,517.80	
1991	$ 10,000.00	136.20	1.87707	$ 18,770.67	$ 19,072.87	
1992	$ 10,000.00	140.30	1.82221	$ 18,222.14	$ 18,638.08	
1993	$ 10,000.00	144.50	1.76925	$ 17,692.50	$ 18,213.20	
1994	$ 10,000.00	148.20	1.72508	$ 17,250.78	$ 17,798.01	
1995	$ 10,000.00	152.40	1.67754	$ 16,775.37	$ 17,392.28	
1996	$ 10,000.00	156.90	1.62942	$ 16,294.24	$ 16,995.81	
1997	$ 10,000.00	160.50	1.59288	$ 15,928.76	$ 16,608.37	
1998	$ 10,000.00	163.00	1.56845	$ 15,684.45	$ 16,229.76	
1999	$ 10,000.00	166.60	1.53455	$ 15,345.53	$ 15,859.78	
2000	$ 10,000.00	172.20	1.48465	$ 14,846.49	$ 15,498.24	
2001	$ 10,000.00	177.10	1.44357	$ 14,435.72	$ 15,144.94	
2002	$ 10,000.00	179.90	1.42110	$ 14,211.04	$ 14,799.69	
2003	$ 10,000.00	184.00	1.38944	$ 13,894.38	$ 14,462.31	
2004	$ 10,000.00	188.90	1.35340	$ 13,533.96	$ 14,132.63	
2005	$ 10,000.00	195.30	1.30905	$ 13,090.45	$ 13,810.46	
2006	$ 10,000.00	201.60	1.26814	$ 12,681.38	$ 13,495.63	
2007	$ 10,000.00	207.34	1.23302	$ 12,330.19	$ 13,187.98	
2008	$ 10,000.00	215.30	1.18743	$ 11,874.27	$ 12,887.35	
2009	$ 10,000.00	214.54	1.19167	$ 11,916.67	$ 12,593.56	$ 11,859.34
2010	$ 10,000.00	218.06	1.17244	$ 11,724.35	$ 12,306.48	$ 11,658.82
2011	$ 10,000.00	224.94	1.13656	$ 11,365.60	$ 12,025.94	$ 11,461.69
2012	$ 10,000.00	229.59	1.11352	$ 11,135.16	$ 11,751.79	$ 11,267.89
2013	$ 10,000.00	232.96	1.09744	$ 10,974.41	$ 11,483.89	$ 11,077.36
2014	$ 10,000.00	236.74	1.07992	$ 10,799.23	$ 11,222.10	$ 10,890.06
2015	$ 10,000.00	237.02	1.07864	$ 10,786.42	$ 10,966.28	$ 10,705.93
2016	$ 10,000.00	240.01	1.06520	$ 10,652.04	$ 10,716.29	$ 10,524.90
2017	$ 10,000.00	245.12	1.04299	$ 10,429.85	$ 10,472.00	$ 10,346.94
2018	$ 10,000.00	251.11	1.01812	$ 10,181.19	$ 10,233.28	$ 10,171.99
2019	$ 10,000.00	255.66	1.00000	$ 10,000.00	$ 10,000.00	$ 10,000.00
1982-19	$ 380,000.00			$ 600,974.62	$ 600,974.62	
2009-19	$ 110,000.00			$ 119,964.92	⟷	$ 119,964.92

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

Calculating Net Present Value

Determining the NPV of future project expenditures depends on the type of 'project' being funded.

For a building construction project (such as a recreation center), the current cost estimate for the project is inflated into the future using the average Building Cost Inflator (from Table 14) 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 0.00005%) since this reflects the present value of a future amount of money.

For other construction projects (such as playground equipment), the current cost estimate for the project is inflated into the future using the average Construction Cost Inflator (from Table 13) applied to the number of years until the year planned for its installation. Like building construction projects, this future cost is then deflated back to the present using the Net Discount Rate.

For non-construction capital projects (such as purchase of an ambulance or land acquisition), the 10-year average CPI inflator (from Table 15) is used to estimate the project expenditure in future dollars while the Net Discount Rate is applied to deflate that future cost to present value.

Tax Credits

An important restriction on an impact fee program is that new growth and development cannot be charged more in impact fees than their 'fair share' of the cost of funding the public facilities needed to serve just that new growth. The calculation of that 'fair share' is intrinsic to the impact fee calculations carried out in the chapters addressing each public facility category in this report. There is a situation, however, in which new development will be paying property taxes for the same projects for which impact fees are being assessed. This situation relates to the portion of impact fee projects that are not eligible for impact fee funding (such as a project that is only 90% impact fee eligible).

Per-Project Funding Shortfall Credit

As noted, some capital projects in the impact fee program may have portions that are not 100% impact fee eligible. These are situations in which a project serves both a future (impact fee eligible) need *and* a need to provide service to the current residents and businesses at the same level of service as new growth. Funding for these non-eligible portions are the responsibility of the current residents and businesses, not new growth.

To the extent that new growth will be contributing property taxes for non-eligible portions of impact fee projects (for which they are not financially responsible), a credit must be applied reflecting these tax collections in order to avoid new growth paying more than their 'fair share' of total costs.

For individual projects that are only partially eligible for impact fee funding, it is assumed for calculation purposes that the non-eligible portions will be covered by General Fund revenue.

Since both existing and future residents and businesses will be paying the property taxes, the situation that new growth would be paying both impact fees to cover its fair share of the costs and generating property taxes that can be used to cover the (ineligible) portion of the cost for which it is not responsible results in a form of 'double taxation'. This credit reduces the impact fee portion to account for the tax contribution.

To the extent that credits are due, they are subtracted from the impact fee project costs as part of the calculation of maximum impact fees allowed within each of the public facility chapters to which they apply.

The sections on the next eight pages explain how these credits are calculated.

Current Property Tax Bases

The two tables below on this page and the next page show the current tax base figures for the county as a whole (including all of the incorporated areas), and secondly the entire county except for West Point. These tables and the projections that follow form the basis leading up to the '% New Growth' columns on Table 20 and Table 21. It is the percentages in the '% New Growth' columns that are applied as a credit against any portion of an impact fee project that is not impact fee eligible.

Table 16 summarizes the current property tax base for the entire county, as reported to the State Department of Revenue. All properties in the county are assessed at the rate of 40% of their actual value. An additional column showing the total tax valuation calculated at 100% has been added for informational purposes. The abbreviation 'M&O' means Maintenance and Operations, which is the historical term for the General Fund tax levy or millage rate.

Table 16: Harris County Tax Base

Category	Total Assessed Value (@40%)	Total Tax Valuation (100% value)
Residential	$ 967,185,962	$ 2,417,964,905
Agricultural	$ 173,799,025	$ 434,497,563
Preferential	$ 35,462	$ 88,655
Conservation Use	$ 122,536,623	$ 306,341,558
Forest Conservation	$ 41,926,680	$ 104,816,700
Environmentally Sensitive	$ 40,666,982	$ 101,667,455
Commercial	$ 73,904,039	$ 184,760,098
Industrial	$ 44,567,104	$ 111,417,760
Utility	$ 113,499,886	$ 283,749,715
Motor Vehicle	$ 22,932,660	$ 57,331,650
Mobile Home	$ 1,528,242	$ 3,820,605
Timber	$ 4,862,332	$ 12,155,830
Heavy Equipment	$ 375,464	$ 938,660
Gross Digest	**$ 1,607,820,461**	**$ 4,019,551,153**
Exempt Residential	$ 223,257,471	$ 558,143,678
Exempt Environmental	$ 40,666,982	$ 1,859,821,228
Net M&O Tax Base	**$ 1,343,896,008**	**$ 3,359,740,020**

Source: Ga Dept. of Revenue, Harris County Tax Digest, 2020.

The following Table 17 shows the same information for all of Harris County except for the portion of West Point located within the county. Because West Point provides fire, EMS and E-911 services to its residents itself, those County services would not be counted as serving West Point.

Table 17: Harris County Tax Base minus West Point

Category	Total Assessed Value (@40%)	Total Tax Valuation (100% value)
Residential	$ 942,916,694	$ 2,357,291,735
Agricultural	$ 173,094,302	$ 432,735,755
Preferential	$ 35,462	$ 88,655
Conservation Use	$ 122,338,097	$ 305,845,243
Forest Conservation	$ 41,926,680	$ 104,816,700
Environmentally Sensitive	$ 40,666,982	$ 101,667,455
Commercial	$ 68,332,554	$ 170,831,385
Industrial	$ 23,118,615	$ 57,796,538
Utility	$ 113,140,115	$ 282,850,288
Motor Vehicle	$ 22,637,200	$ 56,593,000
Mobile Home	$ 1,528,242	$ 3,820,605
Timber	$ 4,862,332	$ 12,155,830
Heavy Equipment	$ 375,464	$ 938,660
Gross Digest	**$ 1,554,972,739**	**$ 3,887,431,848**
Exempt Residential	220,235,628	$ 550,589,070
Exempt Environmental	40,666,982	$ 1,806,702,665
Net M&O Tax Base	**1,294,070,129**	**$ 3,235,175,323**

Source: Ga Dept. of Revenue, Harris County Tax Digest, 2020.

Countywide Tax Base Projections

In the following table, the total value added to the tax base by new growth and development throughout the county is calculated. New houses recently constructed for owner occupancy in the county[5] are being offered at an overall average sales price of $406,349, which would be a tax assessment value of $162,540.

[5] On June 22, 2021, Zillow reported 70 newly constructed homes for sale or on offer for single-family occupancy (none in West Point). Overall, offering prices ranged from a low of $253,990 to a high of $547,699.

Countywide nonresidential value added is calculated as the assessed value of all commercial, industrial and utility property in the county divided by the current number of 'value-added' jobs in the county, resulting in a figure of $28,159 in assessed value per employee.

[The value added is expressed in *assessed* value terms; this is 40% of the market or appraised value. Millage rates are applied to assessed value, rather than appraised.]

Table 18: Tax Base Increases from New Growth – Countywide

Year	Residential			Non-Residential			Total Annual Added Assessed Value
	Total Housing Units	New Housing Units	Added Assessed Value*	Value-Added Employees	New Employees	Added Assessed Value**	
2021	15,319			8,238			
2022	15,617	298	$ 48,436,801	8,393	155	$ 4,364,645	$ 52,801,446
2023	15,920	303	$ 49,249,499	8,548	155	$ 4,364,645	$ 53,614,144
2024	16,230	310	$ 50,387,276	8,702	155	$ 4,364,645	$ 54,751,921
2025	16,545	315	$ 51,199,974	8,857	155	$ 4,364,645	$ 55,564,619
2026	16,866	321	$ 52,175,212	9,013	156	$ 4,392,804	$ 56,568,016
2027	17,194	328	$ 53,312,989	9,169	156	$ 4,392,804	$ 57,705,793
2028	17,528	334	$ 54,288,226	9,325	156	$ 4,392,804	$ 58,681,030
2029	17,869	341	$ 55,426,004	9,481	156	$ 4,392,804	$ 59,818,808
2030	18,216	347	$ 56,401,241	9,637	156	$ 4,392,804	$ 60,794,045
2031	18,570	354	$ 57,539,018	9,798	161	$ 4,533,599	$ 62,072,617
2032	18,931	361	$ 58,676,796	9,959	161	$ 4,533,599	$ 63,210,395
2033	19,299	368	$ 59,814,573	10,120	161	$ 4,533,599	$ 64,348,172
2034	19,673	374	$ 60,789,810	10,281	161	$ 4,533,599	$ 65,323,409
2035	20,056	383	$ 62,252,667	10,442	161	$ 4,533,599	$ 66,786,266
2036	20,446	390	$ 63,390,444	10,611	169	$ 4,758,871	$ 68,149,315
2037	20,843	397	$ 64,528,221	10,780	169	$ 4,758,871	$ 69,287,092
2038	21,248	405	$ 65,828,538	10,950	169	$ 4,758,871	$ 70,587,409
2039	21,661	413	$ 67,128,855	11,119	169	$ 4,758,871	$ 71,887,726
2040	22,081	420	$ 68,266,632	11,288	169	$ 4,758,871	$ 73,025,503
2041	22,511	430	$ 69,892,028	11,469	181	$ 5,096,779	$ 74,988,807
2042	22,948	437	$ 71,029,805	11,649	181	$ 5,096,779	$ 76,126,584
2043	23,394	446	$ 72,492,662	11,830	181	$ 5,096,779	$ 77,589,441
2044	23,848	454	$ 73,792,978	12,010	181	$ 5,096,779	$ 78,889,757
2045	24,312	464	$ 75,418,374	12,191	181	$ 5,096,779	$ 80,515,153

*New housing unit value is estimated at a median assessed value per housing unit of: $ 162,540

**Nonresidential value is estimated at an assessed value per employee of: $ 28,159

Tax Base Projections – Countywide Outside of West Point

The following table follows the same path as described for the county as a whole, above in Table 18, but based on housing unit and value-added job forecasts taken from Table 12: Future Growth Forecasts - Countywide Excluding West Point.

Table 19: Tax Base Increases from New Growth - Outside West Point

Year	Residential			Non-Residential			Total Annual Added Assessed Value
	Total Housing Units	New Housing Units	Added Assessed Value*	Value-Added Employees	New Employees	Added Assessed Value**	
2021	14,883			8,016			
2022	15,172	289	$ 46,973,944	8,167	151	$ 3,853,973	$ 50,827,917
2023	15,467	295	$ 47,949,182	8,317	150	$ 3,828,450	$ 51,777,632
2024	15,768	301	$ 48,924,420	8,468	151	$ 3,853,973	$ 52,778,393
2025	16,074	306	$ 49,737,118	8,618	150	$ 3,828,450	$ 53,565,568
2026	16,386	312	$ 50,712,355	8,770	152	$ 3,879,496	$ 54,591,851
2027	16,704	318	$ 51,687,593	8,922	152	$ 3,879,496	$ 55,567,089
2028	17,029	325	$ 52,825,370	9,074	152	$ 3,879,496	$ 56,704,866
2029	17,360	331	$ 53,800,608	9,226	152	$ 3,879,496	$ 57,680,104
2030	17,697	337	$ 54,775,845	9,377	151	$ 3,853,973	$ 58,629,818
2031	18,041	344	$ 55,913,622	9,534	157	$ 4,007,111	$ 59,920,733
2032	18,392	351	$ 57,051,400	9,691	157	$ 4,007,111	$ 61,058,511
2033	18,749	357	$ 58,026,637	9,847	156	$ 3,981,588	$ 62,008,225
2034	19,113	364	$ 59,164,414	10,004	157	$ 4,007,111	$ 63,171,525
2035	19,485	372	$ 60,464,731	10,161	157	$ 4,007,111	$ 64,471,842
2036	19,864	379	$ 61,602,508	10,325	164	$ 4,185,772	$ 65,788,280
2037	20,249	385	$ 62,577,746	10,490	165	$ 4,211,295	$ 66,789,041
2038	20,643	394	$ 64,040,602	10,655	165	$ 4,211,295	$ 68,251,897
2039	21,044	401	$ 65,178,380	10,819	164	$ 4,185,772	$ 69,364,152
2040	21,452	408	$ 66,316,157	10,984	165	$ 4,211,295	$ 70,527,452
2041	21,870	418	$ 67,941,553	11,160	176	$ 4,492,048	$ 72,433,601
2042	22,294	424	$ 68,916,790	11,335	175	$ 4,466,525	$ 73,383,315
2043	22,728	434	$ 70,542,186	11,511	176	$ 4,492,048	$ 75,034,234
2044	23,169	441	$ 71,679,964	11,687	176	$ 4,492,048	$ 76,172,012
2045	23,620	451	$ 73,305,360	11,863	176	$ 4,492,048	$ 77,797,408

*New housing unit value is estimated at an average assessed value per housing unit of: $ 162,540
**Nonresidential value is estimated at an assessed value per employee of: $ 25,523

As noted above, none of the new houses available for sale or on offer for single-family occupancy in the county were located within West Point. The same average assessed value for new housing units within the service area is therefore the same as shown on Table 18 - $162,540.

Nonresidential value added is calculated as the assessed value of all commercial, industrial and utility property not located in West Point, divided by the current number of 'value-added' jobs in the service area from Table 12, resulting in a figure of $25,523 in assessed value per employee.

Application of Credits Against Impact Fees – Generally

As the county grows, new development will add to property tax bases every year and will thus represent an ever-increasing proportion of the total taxable values.

Table 20 shows the net increase in taxable value created each year from residential development (new housing units) on the left, and from all new residential and nonresidential development together each year on the right (both taken from Table 18).

Also shown is the cumulative increase in the 'Net M&O Residential Tax Base' each year generated by the annual 'contribution' from new residential growth. (The same are shown on the right side for tax base increases generated by all residential and nonresidential growth together.)

For both tax base projections, the total cumulative new tax base growth is shown. By dividing the total tax bases each year by these cumulative new growth amounts, the percentage of the total tax base amounts generated by new growth and development is calculated.

These 'percent new growth' figures are used to determine the extent to which the ineligible portion of an impact fee project paid from the General Fund would represent a contribution from new growth for which it is not responsible (having covered its funding responsibility through the impact fees that it generated).

Table 21 shows the same data as in Table 20, but for the portion of the county lying outside of the City of West Point.

Application of Credits Against Impact Fees – Two Scenarios

Two scenarios that relate to Table 20 are discussed below.

Scenario 1: The left-hand portion of the table shows the tax base generated only by residential growth on a countywide basis. These figures would apply to projects for which only residential land uses would be assessed impact fees (i.e., recreation facilities).

Scenario 2: On the right-hand portion of the table, the growth in the countywide tax base generated by growth in the day-night population (i.e., population and businesses combined) is shown for each year, along with the tax base added by new growth alone. Dividing one by the other, the proportion of the total tax base that will be generated by new growth is shown as a percentage. This would be used for credits with respect to countywide services available to both residents and business, such as the Sheriff's Office & Jail.

In any given year, the percentage from the applicable '% New Growth' column for that year would be applied as a credit against any portion of an impact fee project that is intended to be expended that year which is not impact fee eligible.

By way of example, if a particular project were only 80% impact fee eligible, then the other 20% would be expected to be generated from non-new growth sources since the 'ineligible' portion would be the responsibility of the current residents and businesses in the county. Assuming property taxes are the funding source for the non-eligible portion, it must be recognized that some of that 20% would, in fact, be generated by new residential growth. The solution is to find the percentage of new

growth participation in property taxes for the particular year of expenditure (a parks project in 2030, for instance, would garner 40.15% in property tax revenue from new residential growth) and reduce the impact fee share of the project by that percentage (20% of the total cost times 40.15%). The object, in the long run, is to assure that new growth pays no more than its 'fair share' of the cost of facilities that are needed to specifically serve it through this combination of impact fees paid and property tax generated, while the existing residents and businesses pay their fair share of the cost that specifically serves only them.

The same scenarios apply to Table 21 in that that table shows the tax base generated by both residential growth (left-hand columns) and by day-night population growth (right-hand columns), but the growth *excludes* West Point. Accordingly, only the calculations for 'Fees Based on Day-Night Population' are applicable, since public facility categories affected (Fire Protection, EMS, and E-911) are assessed for services both to residential and nonresidential development.

As noted above, for portion of West Point that extends into the county, the City maintains its own fire department and emergency medical services, as well as its own E-911 system, for all of its residents. Harris County's provision of these same services do therefore not extend in to West Point. As a result, impact fees collected for these services would only be paid by new growth and development in the rest of the county, and any costs to be borne by the existing city residents and businesses would be addressed through their property taxes. However, new growth and development outside of West Point will also be generating property tax revenue to an increasing extent every year. Again, to avoid double taxation, a credit against impact fees must be given. This results in new growth's 'fair share' of the cost of facilities needed to serve it being generated by a combination of the impact fees collected and the property taxes generated.

The property tax credit calculations in Table 20 and Table 21 are summarized in Table 22: Summary – Tax Credits.

Table 20: New Growth Property Tax Generation - Countywide

Year	Fees based on Housing Units				Fees based on Day-Night Populaton			
	Net M&O Residential Tax Base*	Net New Tax Base from Residential	Total New Tax Base from Residential	% New Growth	Total Net M&O Tax Base*	Net New Tax Base from All New Growth	Total New Tax Base from All New Growth	% New Growth
2021	$ 758,384,279				$ 1,370,258,290			
2022	$ 806,821,079	$ 48,436,801	$ 48,436,801	6.39%	$ 1,423,059,736	$ 52,801,446	$ 52,801,446	3.85%
2023	$ 856,070,578	$ 49,249,499	$ 97,686,300	12.11%	$ 1,476,673,880	$ 53,614,144	$ 106,415,590	7.48%
2024	$ 906,457,854	$ 50,387,276	$ 148,073,576	17.30%	$ 1,531,425,801	$ 54,751,921	$ 161,167,511	10.91%
2025	$ 957,657,828	$ 51,199,974	$ 199,273,550	21.98%	$ 1,586,990,420	$ 55,564,619	$ 216,732,130	14.15%
2026	$ 1,009,833,040	$ 52,175,212	$ 251,448,761	26.26%	$ 1,643,558,435	$ 56,568,016	$ 273,300,145	17.22%
2027	$ 1,063,146,029	$ 53,312,989	$ 304,761,750	30.18%	$ 1,701,264,228	$ 57,705,793	$ 331,005,938	20.14%
2028	$ 1,117,434,255	$ 54,288,226	$ 359,049,976	33.77%	$ 1,759,945,258	$ 58,681,030	$ 389,686,968	22.91%
2029	$ 1,172,860,259	$ 55,426,004	$ 414,475,980	37.09%	$ 1,819,764,066	$ 59,818,808	$ 449,505,776	25.54%
2030	$ 1,229,261,500	$ 56,401,241	$ 470,877,221	40.15%	$ 1,880,558,111	$ 60,794,045	$ 510,299,821	28.04%
2031	$ 1,286,800,518	$ 57,539,018	$ 528,416,240	42.99%	$ 1,942,630,729	$ 62,072,617	$ 572,372,439	30.44%
2032	$ 1,345,477,314	$ 58,676,796	$ 587,093,035	45.62%	$ 2,005,841,123	$ 63,210,395	$ 635,582,833	32.72%
2033	$ 1,405,291,887	$ 59,814,573	$ 646,907,608	48.08%	$ 2,070,189,295	$ 64,348,172	$ 699,931,005	34.89%
2034	$ 1,466,081,697	$ 60,789,810	$ 707,697,418	50.36%	$ 2,135,512,704	$ 65,323,409	$ 765,254,414	36.97%
2035	$ 1,528,334,364	$ 62,252,667	$ 769,950,085	52.52%	$ 2,202,298,970	$ 66,786,266	$ 832,040,680	38.96%
2036	$ 1,591,724,808	$ 63,390,444	$ 833,340,529	54.53%	$ 2,270,448,285	$ 68,149,315	$ 900,189,995	40.88%
2037	$ 1,656,253,029	$ 64,528,221	$ 897,868,750	56.41%	$ 2,339,735,377	$ 69,287,092	$ 969,477,087	42.70%
2038	$ 1,722,081,567	$ 65,828,538	$ 963,697,288	58.19%	$ 2,410,322,786	$ 70,587,409	$ 1,040,064,496	44.45%
2039	$ 1,789,210,422	$ 67,128,855	$ 1,030,826,143	59.86%	$ 2,482,210,512	$ 71,887,726	$ 1,111,952,222	46.13%
2040	$ 1,857,477,054	$ 68,266,632	$ 1,099,092,775	61.43%	$ 2,555,236,015	$ 73,025,503	$ 1,184,977,725	47.74%
2041	$ 1,927,369,082	$ 69,892,028	$ 1,168,984,803	62.93%	$ 2,630,224,822	$ 74,988,807	$ 1,259,966,532	49.31%
2042	$ 1,998,398,887	$ 71,029,805	$ 1,240,014,608	64.34%	$ 2,706,351,406	$ 76,126,584	$ 1,336,093,116	50.80%
2043	$ 2,070,891,549	$ 72,492,662	$ 1,312,507,270	65.68%	$ 2,783,940,847	$ 77,589,441	$ 1,413,682,557	52.24%
2044	$ 2,144,684,527	$ 73,792,978	$ 1,386,300,248	66.94%	$ 2,862,830,604	$ 78,889,757	$ 1,492,572,314	53.61%
2045	$ 2,220,102,901	$ 75,418,374	$ 1,461,718,623	68.16%	$ 2,943,345,758	$ 80,515,153	$ 1,573,087,468	54.95%

* Total tax base and Residential tax base countywide including all M&O exemptions.

Table 21: New Growth Property Tax Generation - Outside West Point

Year	Fees based on Housing Units				Fees based on Day-Night Populaton			
	Net M&O Residential Tax Base*	Net New Tax Base from Residential	Total New Tax Base from Residential	% New Growth	Total Net M&O Tax Base*	Net New Tax Base from All New Growth	Total New Tax Base from All New Growth	% New Growth
2021	$ 736,739,661				$ 1,319,437,948			
2022	$ 783,713,605	$ 46,973,944	$ 46,973,944	5.99%	$ 1,370,265,865	$ 50,827,917	$ 50,827,917	3.85%
2023	$ 831,662,787	$ 47,949,182	$ 94,923,126	11.41%	$ 1,422,043,497	$ 51,777,632	$ 102,605,549	7.49%
2024	$ 880,587,207	$ 48,924,420	$ 143,847,546	16.34%	$ 1,474,821,890	$ 52,778,393	$ 155,383,942	10.93%
2025	$ 930,324,324	$ 49,737,118	$ 193,584,664	20.81%	$ 1,528,387,458	$ 53,565,568	$ 208,949,510	14.17%
2026	$ 981,036,679	$ 50,712,355	$ 244,297,019	24.90%	$ 1,582,979,309	$ 54,591,851	$ 263,541,361	17.24%
2027	$ 1,032,724,272	$ 51,687,593	$ 295,984,612	28.66%	$ 1,638,546,398	$ 55,567,089	$ 319,108,450	20.16%
2028	$ 1,085,549,642	$ 52,825,370	$ 348,809,982	32.13%	$ 1,695,251,264	$ 56,704,866	$ 375,813,316	22.94%
2029	$ 1,139,350,250	$ 53,800,608	$ 402,610,589	35.34%	$ 1,752,931,367	$ 57,680,104	$ 433,493,419	25.57%
2030	$ 1,194,126,095	$ 54,775,845	$ 457,386,434	38.30%	$ 1,811,561,185	$ 58,629,818	$ 492,123,237	28.07%
2031	$ 1,250,039,717	$ 55,913,622	$ 513,300,057	41.06%	$ 1,871,481,919	$ 59,920,733	$ 552,043,971	30.47%
2032	$ 1,307,091,117	$ 57,051,400	$ 570,351,456	43.64%	$ 1,932,540,429	$ 61,058,511	$ 613,102,481	32.76%
2033	$ 1,365,117,754	$ 58,026,637	$ 628,378,094	46.03%	$ 1,994,548,655	$ 62,008,225	$ 675,110,707	34.93%
2034	$ 1,424,282,169	$ 59,164,414	$ 687,542,508	48.27%	$ 2,057,720,180	$ 63,171,525	$ 738,282,232	37.02%
2035	$ 1,484,746,900	$ 60,464,731	$ 748,007,239	50.38%	$ 2,122,192,022	$ 64,471,842	$ 802,754,074	39.01%
2036	$ 1,546,349,408	$ 61,602,508	$ 809,609,748	52.36%	$ 2,187,980,303	$ 65,788,280	$ 868,542,355	40.93%
2037	$ 1,608,927,154	$ 62,577,746	$ 872,187,494	54.21%	$ 2,254,769,344	$ 66,789,041	$ 935,331,396	42.75%
2038	$ 1,672,967,757	$ 64,040,602	$ 936,228,096	55.96%	$ 2,323,021,241	$ 68,251,897	$ 1,003,583,293	44.51%
2039	$ 1,738,146,136	$ 65,178,380	$ 1,001,406,476	57.61%	$ 2,392,385,393	$ 69,364,152	$ 1,072,947,445	46.19%
2040	$ 1,804,462,293	$ 66,316,157	$ 1,067,722,632	59.17%	$ 2,462,912,844	$ 70,527,452	$ 1,143,474,896	47.80%
2041	$ 1,872,403,846	$ 67,941,553	$ 1,135,664,185	60.65%	$ 2,535,346,445	$ 72,433,601	$ 1,215,908,497	49.37%
2042	$ 1,941,320,636	$ 68,916,790	$ 1,204,580,976	62.05%	$ 2,608,729,761	$ 73,383,315	$ 1,289,291,813	50.85%
2043	$ 2,011,862,823	$ 70,542,186	$ 1,275,123,162	63.38%	$ 2,683,763,995	$ 75,034,234	$ 1,364,326,047	52.30%
2044	$ 2,083,542,786	$ 71,679,964	$ 1,346,803,126	64.64%	$ 2,759,936,007	$ 76,172,012	$ 1,440,498,059	53.67%
2045	$ 2,156,848,146	$ 73,305,360	$ 1,420,108,485	65.84%	$ 2,837,733,414	$ 77,797,408	$ 1,518,295,466	55.01%

* Total tax base and Residential tax base outside West Point including all M&O exemptions.

The following tables summarize the property tax credit calculations from Table 20 for residential growth (on a per-housing unit basis) and for all new development (on a day-night population basis) applicable in the county-wide service area, and for the same categories for the service area excluding West Point from Table 21.

The 'Tax Credit – Countywide' percentages is used for credit situations in the Sheriff's Office & Jail and Parks & Recreation public facility categories, and the 'Tax Credit – Outside West Point' applies to the Fire Protection, EMS, and E-911 categories. The applicable 'Day-Night Population' figures apply to all public facility categories except for Parks & Recreation. In this instance, the 'Housing Units' percentages are applicable, since only residential land uses would be assessed impact fees for Parks & Recreation projects.

Table 22: Summary – Tax Credits

Tax Credit - Countywide

Year	For Fees Based on:	
	Housing Units*	Day- Night Population*
2022	6.39%	3.85%
2023	12.11%	7.48%
2024	17.30%	10.91%
2025	21.98%	14.15%
2026	26.26%	17.22%
2027	30.18%	20.14%
2028	33.77%	22.91%
2029	37.09%	25.54%
2030	40.15%	28.04%
2031	42.99%	30.44%
2032	45.62%	32.72%
2033	48.08%	34.89%
2034	50.36%	36.97%
2035	52.52%	38.96%
2036	54.53%	40.88%
2037	56.41%	42.70%
2038	58.19%	44.45%
2039	59.86%	46.13%
2040	61.43%	47.74%
2041	62.93%	49.31%
2042	64.34%	50.80%
2043	65.68%	52.24%
2044	66.94%	53.61%
2045	68.16%	54.95%
Average	39.75%	28.74%
Median	42.99%	30.44%

* Average Annual Mid-Year (July 1) number.

Tax Credit - Outside West Point

Year	For Fees Based on:	
	Housing Units*	Day- Night Population*
2022	5.99%	3.85%
2023	11.41%	7.49%
2024	16.34%	10.93%
2025	20.81%	14.17%
2026	24.90%	17.24%
2027	28.66%	20.16%
2028	32.13%	22.94%
2029	35.34%	25.57%
2030	38.30%	28.07%
2031	41.06%	30.47%
2032	43.64%	32.76%
2033	46.03%	34.93%
2034	48.27%	37.02%
2035	50.38%	39.01%
2036	52.36%	40.93%
2037	54.21%	42.75%
2038	55.96%	44.51%
2039	57.61%	46.19%
2040	59.17%	47.80%
2041	60.65%	49.37%
2042	62.05%	50.85%
2043	63.38%	52.30%
2044	64.64%	53.67%
2045	65.84%	55.01%
Average	38.03%	28.78%
Median	41.06%	30.47%

* Average Annual Mid-Year (July 1) number.

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" (see the Glossary), 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 (this is shown in the Maximum Impact Fee Schedule in the Introduction section of this report). 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.

CIE Preparation Fee

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 (not including the administration fee).

Parks & Recreation

Introduction

Public recreational opportunities are available in Harris County through a number of parks facilities operated by the Harris County Parks and Recreation Department. Demand for recreational facilities is almost exclusively related to the county's resident population. Businesses make some incidental use of public parks for office events, company softball leagues, etc., but the use is minimal compared to that of the families and individuals who live in the county. Thus, the parks and recreation impact fee is limited to future residential growth.

Service Area

Parks and recreational facilities are made available to the county's population without regard to the political jurisdiction within which the resident lives. In addition, the facilities are provided equally to all residents, and often used on the basis of the programs available, as opposed to proximity of the facility. For instance, children active in the little leagues may play games at various locations throughout the county, based on scheduling rather than geography. Other programs are located only at certain centralized facilities, to which any Harris County resident can come. As a general rule, parks facilities are located throughout the county, and future facilities will continue to be located around the county so that all residents will have recreational opportunities available on an equal basis. Thus, the entire county is considered a single service area for parks & recreation.

Level of Service

The determination of Level of Service (LOS) standards begins with an inventory of existing County facilities. Table 23 focuses on lands operated as parks by the Parks and Recreation Department. This land encompasses 295 acres that is used for five parks. A variety of recreation components are located in the County's parks and are inventoried in Table 24: Level of Service Calculations.

Table 23: Current Inventory of Park Lands

Park	Acreage
Charles Moultrie Park	29.00
E.C. Pate Park	100.00
Ellerslie Park	120.00
Soccer Complex	34.00
Pine Mountain Valley Park	12.00
Total Park Acres	***295.00***

Table 24 shows the current inventory of recreation components provided by the County, as well as components the County does not currently have in its recreation system but plans to add over the next two decades. These currently show as '0' in the 'current inventory' column.

Table 24 also presents the Level of Service (LOS) in recreation land and facilities per population, converts this to the Level of Service per the number of housing units occupied by that population, and then expresses the Level of Service per housing unit (since impact fees are assessed per housing unit when building permits are issued, not population).

Table 24: Level of Service Calculations

Component Type	Current Inventory	Level of Service per "X" Population**			Level of Service per "X" Housing Units**			Level of Service per Housing Unit***	
Park Acres	**295.00**	1 per	124	Population =	1 per	52	Housing Units =	0.019231	for each Housing Unit
Recreation Buildings & Supporting Facilities *									
Community Center	***1***	*1 per*	*36,619*	*Population =*	*1 per*	*15,319*	*Housing Units =*	*0.000065*	*for each Housing Unit*
Concessions/Restroom Building	**5**	1 per	6,457	Population =	1 per	2,701	Housing Units =	0.000370	for each Housing Unit
Restroom Building	***2***	*1 per*	*18,310*	*Population =*	*1 per*	*7,660*	*Housing Units =*	*0.000131*	*for each Housing Unit*
Maintenance Building	***3***	*1 per*	*12,206*	*Population =*	*1 per*	*5,106*	*Housing Units =*	*0.000196*	*for each Housing Unit*
Parking Spaces	***1,205***	*1 per*	*30*	*Population =*	*1 per*	*13*	*Housing Units =*	*0.076923*	*for each Housing Unit*
Park and Recreation Components *									
Baseball/Softball Field	***13***	*1 per*	*2,817*	*Population =*	*1 per*	*1,178*	*Housing Units =*	*0.000849*	*for each Housing Unit*
Basketball Court, Outdoor	***3***	*1 per*	*12,206*	*Population =*	*1 per*	*5,106*	*Housing Units =*	*0.000196*	*for each Housing Unit*
Batting Cage	***11***	*1 per*	*3,329*	*Population =*	*1 per*	*1,393*	*Housing Units =*	*0.000718*	*for each Housing Unit*
Boat/Fishing Dock	**0**	1 per	58,114	Population =	1 per	24,312	Housing Units =	0.000041	for each Housing Unit
Disc Golf Course	**0**	1 per	58,114	Population =	1 per	24,312	Housing Units =	0.000041	for each Housing Unit
Fitness Stations, Outdoor	**0**	1 per	7,264	Population =	1 per	3,039	Housing Units =	0.000329	for each Housing Unit
Football Field	***1***	*1 per*	*36,619*	*Population =*	*1 per*	*15,319*	*Housing Units =*	*0.000065*	*for each Housing Unit*
Pavilion, Small	**3**	1 per	7,264	Population =	1 per	3,039	Housing Units =	0.000329	for each Housing Unit
Pavilion, Large	**1**	1 per	14,529	Population =	1 per	6,078	Housing Units =	0.000165	for each Housing Unit
Pickleball Court, Outdoor	**0**	1 per	5,811	Population =	1 per	2,431	Housing Units =	0.000411	for each Housing Unit
Playground	**2**	1 per	7,264	Population =	1 per	3,039	Housing Units =	0.000329	for each Housing Unit
Rodeo Arena	**0**	1 per	58,114	Population =	1 per	24,312	Housing Units =	0.000041	for each Housing Unit
Soccer Field	**10**	1 per	2,906	Population =	1 per	1,216	Housing Units =	0.000822	for each Housing Unit
Splash Pad	**0**	1 per	29,057	Population =	1 per	12,156	Housing Units =	0.000082	for each Housing Unit
Tennis Court	**3**	1 per	3,059	Population =	1 per	1,280	Housing Units =	0.000781	for each Housing Unit
Mountain Bike Trail (miles)	**0**	0 per	29,057	Population =	0 per	12,156	Housing Units =	0.000082	for each Housing Unit
Park Trail, Paved (miles)	**2.4**	1 per	13,208	Population =	1 per	5,525	Housing Units =	0.000181	for each Housing Unit
Park Trail, Soft Surface (miles)	**4**	1 per	5,811	Population =	1 per	2,431	Housing Units =	0.000411	for each Housing Unit
Rails to Trails Multi-Use Path	**10**	1 per	2,767	Population =	1 per	1,158	Housing Units =	0.000864	for each Housing Unit

* *Italics:* LOS is based on the current inventory divided by the current population. Non-italics: LOS is based on the number of each component that is anticipated to serve local needs through 2045.
** *Italics:* Converted using average population per housing unit in 2021. Non-italics: Converted using the average population per housing unit in 2045.
*** "1" divided by the number of housing units for each component under 'Level of Service per "X" Housing Units' column.

Table 24 incorporates a combination of LOS standards reflecting current conditions as well as future plans where applicable, relevant and useful to the impact fee calculations. The LOS for current facilities is expressed in terms of the number of people each recreation component currently serves (shown in italicized text in the table above and calculated by using the current inventory for the component divided into the current population), with the following exceptions: components that are not currently in the system but are intended to be added over time (shown as "0") and component types that exist but for which the County has identified the need to add to in order to serve future

growth over the next 20 years (shown on Table 24 as non-italicized text). In these instances, the LOS is based on the total number of recreation components anticipated to serve local needs through 2045.

These LOS 'per population' standards are then re-calculated as the number of housing units served by each component based on the number of people living in an average household (the average household size in the county). Since impact fees are assessed at the time a building permit is issued (and the impact fee will be applied only to residential uses), the LOS then must be converted to a 'per housing unit' basis.

Forecasts for Service Area

Future Demand

Table 25 below applies the LOS calculations from Table 24 to determine the facilities needed to meet the demand created by the existing residents of the county as well as the future demand for recreation components that will be generated by new growth and development.

The current number of housing units (15,319) is multiplied by the LOS standard ('LOS per Housing Unit') to determine the existing demand of today's population. The increase in housing units between 2021 and 2045 (8,993 - see Table 8) is multiplied by the same LOS to produce the future demand created by future growth.

Table 25: Existing and Future Demand

Component Type	LOS Per Housing Unit	Existing Demand (2021)*	New Growth Demand (2021-2045)**
Park Acres	0.019231	294.60	172.94
Recreation Buildings & Supporting Facilities			
Community Center	0.000065	1.00	0.59
Concessions/Restroom Building	0.000370	5.67	3.33
Restroom Building	0.000131	2.00	1.17
Maintenance Building	0.000196	3.00	1.76
Parking Spaces	0.076923	1,178.38	691.77
Park and Recreation Components			0.00
Baseball/Softball Field	0.000849	13.00	7.63
Basketball Court, Outdoor	0.000196	3.00	1.76
Batting Cage	0.000718	11.00	6.46
Boat/Fishing Dock	0.000041	0.63	0.37
Disc Golf Course	0.000041	0.63	0.37
Fitness Stations, Outdoor	0.000329	5.04	2.96
Football Field	0.000065	1.00	0.59
Pavilion, Small	0.000329	5.04	2.96
Pavilion, Large	0.000165	2.52	1.48
Pickleball Court, Outdoor	0.000411	6.30	3.70
Playground	0.000329	5.04	2.96
Rodeo Arena	0.000041	0.63	0.37
Soccer Field	0.000822	12.60	7.40
Splash Pad	0.000082	1.26	0.74
Tennis Court	0.000781	11.97	7.03
Mountain Bike Trail (miles)	0.000082	1.26	0.74
Park Trail, Paved (miles)	0.000181	2.77	1.63
Park Trail, Soft Surface (miles)	0.000411	6.30	3.70
Rails to Trails Multi-Use Path	0.000864	13.23	7.77

* 2021 Housing Units = 15,319
** New Units (2021-2045) = 8,993

Impact Fee Eligibility

New recreation components are eligible for impact fee funding only to the extent that the improvements are needed to specifically serve new growth and development, and only at the Level of Service applicable countywide. Table 26 shows the number of new recreation components that are needed to satisfy needs of the county's future residents, and the extent to which fulfillment of those needs will serve future growth demand.

Table 26: Future Park Facility Impact Fee Eligibility

Component Type	Current Inventory	Existing Demand	Excess or (Shortfall)	New Growth Demand	Net Total Needed*	Total Needed**	% Impact Fee Eligible
Park Acres	295.00	294.60	0.40	172.94	172.54	172.54	100.00%
Recreation Buildings & Supporting Facilities							
Community Center	1	1.00	0.00	0.59	0.59	1.00	58.70%
Concessions/Restroom Building	5	5.67	(0.67)	3.33	4.00	4.00	83.24%
Restroom Building	2	2.00	0.00	1.17	1.17	1.00	100.00%
Maintenance Building	3	3.00	0.00	1.76	1.76	2.00	88.06%
Parking Spaces	1,205	1,178.38	26.62	691.77	665.15	665.00	100.00%
Park and Recreation Components							
Baseball/Softball Field	13	13.00	0.00	7.63	7.63	8.00	95.43%
Basketball Court, Outdoor	3	3.00	0.00	1.76	1.76	2.00	88.06%
Batting Cage	11	11.00	0.00	6.46	6.45	6.00	100.00%
Boat/Fishing Dock	0	0.63	(0.63)	0.37	1.00	1.00	36.99%
Disc Golf Course	0	0.63	(0.63)	0.37	1.00	1.00	36.99%
Fitness Stations, Outdoor	0	5.04	(5.04)	2.96	8.00	8.00	36.99%
Football Field	1	1.00	0.00	0.59	0.59	1.00	58.70%
Pavilion, Small	3	5.04	(2.04)	2.96	5.00	5.00	59.18%
Pavilion, Large	1	2.52	(1.52)	1.48	3.00	3.00	49.32%
Pickleball Court, Outdoor	0	6.30	(6.30)	3.70	10.00	10.00	36.99%
Playground	2	5.04	(3.04)	2.96	6.00	6.00	49.32%
Rodeo Arena	0	0.63	(0.63)	0.37	1.00	1.00	36.99%
Soccer Field	10	12.60	(2.60)	7.40	9.99	10.00	73.96%
Splash Pad	0	1.26	(1.26)	0.74	2.00	2.00	36.99%
Tennis Court	3	11.97	(8.97)	7.03	15.99	16.00	43.91%
Mountain Bike Trail (miles)	0	1.26	(1.26)	0.74	2.00	2.00	36.99%
Park Trail, Paved (miles)	2	2.77	(0.37)	1.63	2.00	2.00	81.37%
Park Trail, Soft Surface (miles)	4	6.30	(2.30)	3.70	6.00	6.00	61.65%
Rails to Trails Multi-Use Path	10	13.23	(3.23)	7.77	11.00	11.00	70.60%

* Additional components needed to meet future growth needs.

** For recreation components that can only be built in whole numbers: 'Total Needed' rounded to nearest whole number. For park acres and walking trails, actual number shown.

Table 26 begins with the current inventory of recreation components, and the 'existing demand' for those components to meet the needs of the current (2021) population based on the applicable Level of Service standards (shown on Table 24).

The 'Excess or (Shortfall)' column compares the existing demand to the current inventory for each recreation component. If an 'excess' were to exist, that would mean that more components (or portions of components) exist than are needed to meet the demands of the current population, and

those 'excesses' would create capacity to meet the recreational needs of future growth. This is the case for two components in Harris County—park acres and parking spaces.

Conversely, a 'shortfall' indicates that there are not enough components (or portions of components) to meet the recreational needs of the current population based on the LOS standard (e.g., concessions/restroom buildings, pavilions, playgrounds, etc.).

In all other instances, 'existing demand' is the same as the 'current inventory' and there is no excess or shortfall (e.g., community centers, restroom buildings, baseball/softball fields, etc.). This occurs where 'existing demand' is used in the calculation of LOS standards in Table 24.

The column on Table 26 labeled 'New Growth Demand' shows the total demand for recreation components specifically to meet future growth needs (from Table 25). The 'Net Total Needed' column shows all existing and future needs combined, which equates to the number of new components that are needed to be added to the recreation system. The current 'shortfall' that exists for recreation components is added to new growth's facility needs to bring the current population up to the current Level of Service required to be available to all—both current and future residents.

For all components except park acres and trail miles, the 'Total Needed' column is rounded to the nearest whole numbers. This is simply because the County cannot build a portion of a facility, it must build entire facilities. As a result, the '% Impact Fee Eligible' column may reflect a percentage less than 100%.

For example, new growth mathematically demands only 1.76 basketball courts, and not two full courts. The County cannot build a portion of a basketball court for it to serve its intended purpose; it must build an entire court for it to be usable. Thus, two basketball courts need to be added, which is technically slightly more than what new growth requires. This results in the total cost of the courts being less than 100% impact fee eligible; the portion that is impact fee eligible (1.76) results in the percentage that is impact fee eligible (88.06%).

Conversely, in some cases the 'net total needed' figure is rounded down to the nearest whole number in the 'Total Needed' column. For example, new growth demand for restroom buildings is only 1.17. To round that number up to '2' would result in one facility being 100% impact fee eligible and the other only 17% eligible. In these cases, it makes more sense from a public expenditures standpoint to fund only 1 building with impact fees (at 100% eligible) now and to delay the construction of a second until a future date when new impact fee calculations (a revised CIE with a horizon extended beyond 2045) would more fully justify the second restroom facility.

The '% Impact Fee Eligible' column shows the percentage of each new facility that is eligible for impact fee funding. A majority of recreation facilities are only partially eligible for impact fee funding. Soccer fields, for example, are 73.96% impact fee eligible. This percentage equates to the portion of needed fields (10) that are demanded by new growth alone (73.96%), calculated by dividing '7.40' by '10'. The remaining 26.04% is needed to satisfy existing demand due to the 'shortfall' in the County's inventory of soccer fields based on the LOS standard.

Future Costs

Table 27 is a listing of the future capital project costs to provide the additional recreation components needed to attain the applicable Level of Service standards.

Table 27: Future Costs to Meet Future Demand for Parks and Recreation

Component Type	Total Proposed	Net Cost Per Unit*	Gross Cost Per Unit**	Total Cost (2021)	% Impact Fee Eligible	New Growth Share (2021)	Net Present Value***
Park Acres	172.54	$ 5,000	$ 6,100	$ 1,052,485	100.00%	$ 1,052,485	$ 1,291,475
Recreation Buildings & Supporting Facilities							
Community Center	1	$ 750,000	$ 915,000	$ 915,000	58.70%	$ 537,150	$ 689,411
Concessions/Restroom Building	4	$ 100,000	$ 122,000	$ 488,000	83.24%	$ 406,200	$ 521,342
Restroom Building	1	$ 80,000	$ 97,600	$ 97,600	100.00%	$ 97,600	$ 125,266
Maintenance Building	2	$ 80,000	$ 97,600	$ 195,200	88.06%	$ 171,899	$ 220,626
Parking Spaces	665	$ 500	$ 610	$ 405,650	100.00%	$ 405,650	$ 492,458
Park and Recreation Components							
Baseball/Softball Field	8	$ 100,000	$ 122,000	$ 976,000	95.43%	$ 931,363	$ 1,130,673
Basketball Court, Outdoor	2	$ 75,000	$ 91,500	$ 183,000	88.06%	$ 161,155	$ 195,642
Batting Cage	6	$ 20,000	$ 24,400	$ 146,400	100.00%	$ 146,400	$ 177,729
Boat/Fishing Dock	1	$ 35,000	$ 42,700	$ 42,700	36.99%	$ 15,795	$ 19,175
Disc Golf Course	1	$ 20,000	$ 24,400	$ 24,400	36.99%	$ 9,026	$ 10,957
Fitness Stations, Outdoor	8	$ 35,000	$ 42,700	$ 341,600	36.99%	$ 126,358	$ 153,398
Football Field	1	$ 400,000	$ 488,000	$ 488,000	58.70%	$ 286,480	$ 347,786
Pavilion, Small	5	$ 40,000	$ 48,800	$ 244,000	59.18%	$ 144,409	$ 175,312
Pavilion, Large	3	$ 80,000	$ 97,600	$ 292,800	49.32%	$ 144,409	$ 175,312
Pickleball Court, Outdoor	10	$ 35,000	$ 42,700	$ 427,000	36.99%	$ 157,960	$ 191,763
Playground	6	$ 100,000	$ 122,000	$ 732,000	49.32%	$ 361,022	$ 438,280
Rodeo Arena	1	$ 500,000	$ 610,000	$ 610,000	36.99%	$ 225,639	$ 273,925
Soccer Field	10	$ 50,000	$ 61,000	$ 610,000	73.96%	$ 451,129	$ 547,670
Splash Pad	2	$ 150,000	$ 183,000	$ 366,000	36.99%	$ 135,383	$ 164,355
Tennis Court	16	$ 50,000	$ 61,000	$ 976,000	43.91%	$ 428,573	$ 520,286
Mountain Bike Trail (miles)	2	$ 25,000	$ 30,500	$ 61,000	36.99%	$ 22,564	$ 27,392
Park Trail, Paved (miles)	2	$ 50,000	$ 61,000	$ 122,022	81.37%	$ 99,289	$ 120,537
Park Trail, Soft Surface (miles)	6	$ 60,000	$ 73,200	$ 439,260	61.65%	$ 270,789	$ 328,737
Rails to Trails Multi-Use Path	11	$ 750,000	$ 915,000	$ 10,065,000	70.60%	$ 7,105,868	$ 8,626,506
			Totals	**$ 20,301,117**		**$ 13,894,593**	**$ 16,966,012**

* Cost estimates are based on known or comparable facility costs.
** Includes contingency at 15% and architectural/engineering services at 7%.
*** Construction dates vary. NPV based on CPI, CCI or BCI as appropriate, in an average construction year of 2033.

Facility construction costs in the 'Net Cost per Unit' column are based on costs drawn from a variety of sources, including facilities that have been previously constructed by the County and similar facilities that have been built in other counties. Each of these 2021 estimated cost figures are then increased to the gross cost by 22% to account for architectural and engineering services as well as contingencies.

These 'Total Cost (2021)' figures on the Table are converted to 'New Growth Share (2021)' dollars based on the percentage that each improvement is impact fee eligible (from Table 26).

The Net Present Value of new growth's share of the cost for each component is calculated as follows:

Since the actual pace and timing of construction for the improvements proposed to meet future demand have not been programmed, an 'average' year of 2033 is used for Net Present Value calculations—some improvements will occur earlier for less money, and some later at greater cost. All will average out.

To calculate the Net Present Value (NPV) of the impact fee eligible cost estimates for the construction of the recreation components, the NPVs are calculated by increasing the current (2021) estimated costs using Engineering News Record's (ENR) 10-year average building cost inflation (BCI) rate for buildings (such as maintenance buildings), the 10-year average CPI rate for acreage, and the 10-year average construction cost inflation (CCI) for all other projects. All project costs are then reduced to current NPV dollars using the Net Discount Rate.

Credit Calculation

Property Tax Credit

Credits against impact fees are applied when those being assessed the fee will also be contributing to the project's cost through their property taxes, thus creating a double-taxation situation. For this calculation it is assumed the County will meet its financial obligations toward non-eligible project costs through general fund expenditures. For this reason, the credit calculated here is based on future property tax contributions into the general fund that will be generated by new residential growth and development to pay for the non-eligible costs.

Table 28: New Residential Growth Contribution through Property Taxes

Year	Ineligible Funding Required (NPV)*	Property Tax Credit**	Contribution from New Growth
2021		0.00%	
2022		6.39%	
2023		12.11%	
2024		17.30%	
2025		21.98%	
2026		26.26%	
2027		30.18%	
2028		33.77%	
2029		37.09%	
2030		40.15%	
2031		42.99%	
2032		45.62%	
2033	$ 7,811,051.67	48.08%	$ 3,755,565.92
2034		50.36%	
2035		52.52%	
2036		54.53%	
2037		56.41%	
2038		58.19%	
2039		59.86%	
2040		61.43%	
2041		62.93%	
2042		64.34%	
2043		65.68%	
2044		66.94%	
2045		68.16%	
		Total New Residential Contribution	**$ 3,755,565.92**

* Net Present Value of amount to be paid from property taxes to cover costs not eligible for impact fee funding.
** The percentage that new growth will generate in property taxes that would be applied to the ineligible portion of impact fee projects.

In order to calculate the tax credit, the total non-eligible project costs are shown in the 'average' year of construction, 2033. The 'Property Tax Credit' is the percentage of the total countywide residential tax base that represents accumulated new growth for each designated year, taken from the Cost Adjustments and Credits chapter. (Residential tax generation is used because the impact fee for parks and recreation facilities will only be levied against residential growth.)

The 'Contribution from New Growth' column shows the cost of non-impact fee eligible park costs multiplied by the 'Property Tax Credit' tax credit percentage for pertinent years. In 2033, for instance, new growth is expected to increase the county's tax base by 48.08%.

Net Impact Cost Calculation

As noted, Parks and Recreation impact fees are collected from residential development only.

In calculating the net impact cost on Table 29, the credit for future property tax contributions (from Table 28) is subtracted from the total impact fee eligible cost, as discussed above. Using the net eligible cost figure, the net impact cost per housing unit is calculated, based on the increase in dwelling units between 2021 and 2045.

Table 29: Net Cost to Serve New Growth

Description		Total
Total Eligible Cost of Park & Rec Projects	$	16,966,012.02
minus credit for Tax Contributions	$	(3,755,565.92)
= Net Eligible Parks & Rec Project Costs	$	13,210,446.09
÷ Housing Unit Increase (2021-2045)		8,993
= Net Impact Cost per Housing Unit	**$**	**1,468.97**

Note that an administration fee and a fee for the preparation of the CIE is added to the net cost figure to produce the gross fee, which is shown on the Maximum Impact Fee Schedule.

Maximum Impact Fee Schedule—Parks & Recreation

The maximum net impact fee that could be charged in Harris County for the Parks & Recreation facility category, based on the calculations carried out in this chapter, is shown on Table 30.

The following are added to the net impact fee to produce the total maximum impact fee on Table 30:

- A 3% administrative fee; and,
- A 1.5% fee to cover the cost of preparing the Capital Improvements Element (CIE).

The total impact fees on the following table are transferred to the Maximum Impact Fee Schedule in the Introduction Chapter of this report.

Table 30: Calculation of Maximum Impact Fee – Parks & Recreation

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
			Net Cost per Housing Unit:	**$ 1,468.9698**			
Residential (200-299)							
210	Single-Family Detached Housing	n/a	per dwelling	$ 1,468.9698	$ 44.0690	$ 22.0345	$ 1,535.0733
220	Apartment	n/a	per dwelling	$ 1,468.9698	$ 44.0690	$ 22.0345	$ 1,535.0733
230	Residential Condominium/Townhouse	n/a	per dwelling	$ 1,468.9698	$ 44.0690	$ 22.0345	$ 1,535.0733

Note: ITE Code means the land use code assigned in the *Trip Generation* manual published by the Institute of Transportation Engineers, 9th Edition.

Sheriff's Office & Jail

Introduction

The Harris County Sheriff's Office & Jail category focuses on the law enforcement activities of the Office and includes the Uniform Patrol Division, Criminal Investigations Division (CID), and the Court Service Department. The Sheriff's Office also provides security for all courts, processes warrants, and operates the county jail in the Law Enforcement Center. The county jail is a holding facility for individuals charged with a criminal offense waiting for a court appearance and for persons already sentenced but waiting for a transfer to a state or federal facility. The jail also holds persons found guilty of certain misdemeanors and sentenced to twelve months or less.

Service Area

The entire county is considered a single service area for the provision of law enforcement activities and facilities under the Sheriff's Office & Jail 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.

Level of Service

The Level of Service is determined by an inventory of the square footage and specialized heavy vehicles currently used by the Sheriff's Office, and by a planned future expansion of the county jail to serve the needs of both existing development and future growth to 2045.

Table 31 shows the inventory of existing building area occupied by the Sheriff's Office for law enforcement activities, including administrative offices and evidence storage space. One heavy vehicle (defined as a vehicle having a service life of 10 years or more) – a transport van – is included in the inventory. Note that rolling stock such as patrol cars are not generally eligible for cost recovery because they do not last at least 10 years and are therefore not included in the inventory below.

Table 31 also shows the existing and planned number of beds in the county jail, which is located in the Law Enforcement Center. The future expansion project will add 98 beds to the 115 that are in the jail.

Table 31: Inventory of Sheriff's Office & Jail Facilities

Description	Location	Quantity
Existing Facilities		*Square Feet*
Sheriff's Office	9989 Highway 116	8,000
Evidence Storage Space*	9825 Highway 116	600
Harris County Courthouse**	102 N. College St.	1,900
		10,500
		Beds
Law Enforcement Center (County Jail)	9825 Highway 116	**115**
		Number
Heavy Vehicle*** - Prisoner Transport Van		**1**
Planned Facilities		*Additional Beds*
Jail Expansion		**98**

*Located in the Law Enforcement Center.
** Space in the courthouse that is used by the Sheriff's Office.
*** Vehicles having a service life of 10 years or more.

Table 32: Level of Service Calculations

Level of Service			Future Demand	
Facilities	Service Population	Level of Service	Future Population	New Growth Demand*
Existing Square Feet	Day-Night Population (2021)	Square Feet of Floor Area per Person	2021-2045 Day-Night Population	Net New Square Feet Needed
10,500	44,857	0.234077	25,448	5,957
Existing & Planned Jail Beds	Day-Night Population (2045)	Beds per Person	Day-Night Population (2045)	Net New Jail Beds Needed
213	70,305	0.003030	70,305	98
Existing Heavy Vehciles	Day-Night Population (2021)	Vehicles per Person	2021-2045 Day-Night Population	New Heavy Vehicles Needed
1	44,857	0.000022	25,448	0.57

* System improvements are 100% impact fee eligible to the whole number. One heavy vehicle is 57% impact fee eligible.

Table 32 presents the calculation of Level of Service based on the inventory and planned improvements on Table 31. Day-night population is used in calculating 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.

The LOS is measured in terms of the existing building area in square feet and heavy vehicles used by the Sheriff's Office per 2021 day-night population in the county. For the county jail, the LOS is based on the total number of beds (existing and planned) that are sufficient to meet the needs of the County through 2045.

Forecasts for Service Area

Future Demand

Table 32 also calculates the future demand for square footage and heavy vehicles, based on the LOS standards shown on the table that are applied to the expected day-night population growth between 2021 and 2045. As shown on the table, only a portion (.57) of a heavy vehicle is required to serve future growth based on the Level of Service. Only that portion, or 57%, of the cost of the vehicle is therefore impact fee eligible.

For jail beds, future demand is based on current plans of the Sheriff's Office to add additional beds to the jail; existing and planned beds are intended to serve future growth in the coming years. This is represented in the 'New Growth Demand' column.

Future Costs

Since the actual pace and timing of construction for the improvements to meet future demand have not been programmed, an 'average' year of 2033 is used for the Net Present Value calculations – some will occur earlier for less money, and some later at greater cost. All will average out.

To calculate the Net Present Value (NPV) of the impact fee eligible cost estimate for the construction of future building area (which may be an expansion of an existing facility or the construction of a new building) and the jail expansion, the NPV is calculated by increasing the current (2021) estimated costs using the Engineering New Record's (ENR) 10-year average building cost inflation (BCI) rate, and then discounting this future amount back using the Net Discount Rate.

A per-square foot construction cost of $295 has been used to estimate the cost of future non-jail construction projects, based on an average of similar projects included in recent editions of a nationally recognized source (BNi Publications annual building cost books). The estimated cost of the jail is based on information compiled by the Sheriff's Office.

To calculate the NPV of the impact fee eligible cost estimate of the transport van, the current estimated cost is inflated to the target year (2033) using the 10-year average Consumer Price Index (CPI) and then reduced using the Net Discount Rate to produce the Net Present Value.

The project costs are shown on Table 33: Project Costs to Meet Future Demand.

Table 33: Project Costs to Meet Future Demand

Description	Number	2021 Cost *	Estimated Cost 2033 (NPV)	% Impact Fee Eligible	Total Impact Fee Eligible Cost
New Building Area (sq.ft.)	5,957	$1,759,200	$ 2,257,865.62	100%	$ 2,257,865.62
Jail Expansion (beds)	98	$7,000,000	$ 8,984,230.88	100%	$ 8,984,230.88
Transport Van	1	$ 110,000.00	$ 134,977.95	57%	$ 76,937.43
		Totals	**$ 11,377,074.44**		**$ 11,319,033.92**

* Building cost estimates ($295/square foot for new building area and $7,000,000 for the jail expansion) are based on information provided by Sheriff's Office and on comparable facilities included in the Green Building Square Foot Costbook, 2018, ediition, BNi Publications. Transport van cost is based on the existing vehicle in the County fleet.
**2021 cost estimate inflated to target year (2033) using the BCI and CPI, reduced to NPV using the Discount Rate.

Since the new building area and the jail expansion are exactly what is required to serve new growth, the projects are 100% impact fee eligible. As stated earlier, the heavy vehicle (the transport van) is only partially impact fee eligible because only 57% of a vehicle is technically 'demanded' by future growth.

Credit Calculation

Property Tax Credit

Credits against impact fees are applied when those being assessed the fee will also be contributing to the project's cost through their property taxes, thus creating a double-taxation situation. For this calculation it is assumed the County will meet its financial obligations toward non-eligible project costs through general fund expenditures. For this reason, the credit calculated here is based on future property tax contributions into the general fund that will be generated by new growth and development to pay for the non-eligible costs.

The credit, or future contribution from new growth, is shown on Table 34: New Growth Contribution from Future Property Taxes.

Table 34: New Growth Contribution from Future Property Taxes

Year	Ineligible Funding Required (NPV)*	Property Tax Credit**	Contribution from New Growth
2033	$ 58,040.52	34.89%	$ 20,253.03
		Total New Growth Contribution	**$ 20,253.03**

* Net Present Value of amount to be paid from property taxes to cover costs not eligible for impact fee funding.

** The percentage that new growth will generate in property taxes that would be applied to the ineligible portion of impact fee projects.

The 'Property Tax Credit' is the percentage of the total countywide tax base (i.e., population and businesses combined) that represents accumulated new growth for each designated year, taken from the Cost Adjustments and Credits chapter.

The 'Contribution from New Growth' column shows the cost of the non-impact fee portion of the transport van project, multiplied by the tax credit percentage for the 'average' implementation year (2033).

Net Impact Cost Calculation

Sheriff's Office and Jail impact fees are collected from both residential and nonresidential development.

Table 35: Net Cost to Serve New Growth

Description	Total
Total Cost of Eligible Sheriff's Office & Jail Projects	$ 11,319,033.92
minus credit for Tax Contributions	$ (20,253.03)
= Net Sheriff's Office Project Costs	$ 11,298,780.89
÷ Day-Night Pop Increase (2021-2045)	25,448
= Net Impact Cost per Person	**$ 443.9948**

Note that an administration fee and a fee for the preparation of the CIE is added to the net cost figure to produce the gross fee, which is shown on the Maximum Impact Fee Schedule.

In calculating the net impact cost on Table 35, the credit for future property tax contributions (from Table 34) is subtracted from the total impact fee eligible cost, as discussed above. Using the net eligible cost figure, the net impact cost per person is calculated, based on the increase in the day-night population between 2021 and 2045. This figure will be used to calculate impact fees for all nonresidential land uses.

A final calculation, shown in Table 36, is necessary in order to fairly distribute the portion of project

costs that are attributable to residential growth, because they are assessed impact fees per housing unit rather than by person.

Table 36: Calculation of Net Housing Fee

Factor	Data
Residential Population Increase (2021-2045)	21,495
÷ Day-Night Population Increase (2021-2045)	25,448
= Residential Increase as % of Total Increase	84.47%
Total Net Sheriff's Office & Jail Project Costs	$ 11,298,780.89
× Residential % of Total Day-Night Increase =	$ 9,543,669.26
÷ New Housing Units (2021-2045)	8,993
= Net Impact Fee per Housing Unit	**$ 1,061.2330**

The portion of project cost that is attributable to new residential growth is calculated based on the percentage of the total day-night population increase that is comprised of new residents. This percentage is then applied to the total net project cost figure to produce the cost attributable to new residential growth. Finally, this cost attributable to new residential growth is divided by the number of new housing units projected to 2045 to produce a 'net impact fee per housing unit'.

Maximum Impact Fee Schedule—Sheriff's Office & Jail

The maximum net impact fee that could be charged in Harris County for the Sheriff's Office & Jail category, based on the calculations carried out in this chapter, is shown on Table 36.

The following are added to the net impact fee to produce the total maximum impact fee on Table 37:

- A 3% administrative fee; and,
- A 1.5% fee to cover the cost of preparing the Capital Improvements Element (CIE).

The total impact fees on the following table are transferred to the Maximum Impact Fee Schedule in the Introduction Chapter of this report.

Table 37: Calculation of Maximum Impact Fee – Sheriff's Office & Jail

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
			Net Cost per Day/Night Person (Employee):	**$ 443.9948**			
Residential (200-299)							
210	Single-Family Detached Housing	n/a	per dwelling	$ 1,061.2330	$ 31.8369	$ 15.9184	$ 1,108.9883
220	Apartment	n/a	per dwelling	$ 1,061.2330	$ 31.8369	$ 15.9184	$ 1,108.9883
230	Residential Condominium/Townhouse	n/a	per dwelling	$ 1,061.2330	$ 31.8369	$ 15.9184	$ 1,108.9883
Port and Terminal (000-099)							
30	Intermodal Truck Terminal	0.001415	per square foot	$ 0.6282	$ 0.0188	$ 0.0094	$ 0.6564
Industrial/Agricultural (100-199)							
110	General Light Industrial	0.002308	per square foot	$ 1.0247	$ 0.0307	$ 0.0153	$ 1.0707
120	General Heavy Industrial	0.001829	per square foot	$ 0.8122	$ 0.0243	$ 0.0121	$ 0.8486
140	Manufacturing	0.001793	per square foot	$ 0.7963	$ 0.0238	$ 0.0119	$ 0.8320
150	Warehousing	0.000915	per square foot	$ 0.4063	$ 0.0121	$ 0.0060	$ 0.4244
151	Mini-Warehouse	0.000077	per square foot	$ 0.0342	$ 0.0010	$ 0.0005	$ 0.0357
152	High-Cube Warehouse	0.000076	per square foot	$ 0.0337	$ 0.0010	$ 0.0005	$ 0.0352
Lodging (300-399)							
310	Hotel or Conference Motel	0.569735	per room	$ 252.9594	$ 7.5887	$ 3.7943	$ 264.3424
311	All Suites Hotel	0.500000	per room	$ 221.9974	$ 6.6599	$ 3.3299	$ 231.9872
320	Motel	0.439500	per room	$ 195.1359	$ 5.8540	$ 2.9270	$ 203.9169
Recreational (400-499)							
430	Golf Course	0.245614	per acre	$ 109.0514	$ 3.2715	$ 1.6357	$ 113.9586
437	Bowling Alley	0.001000	per square foot	$ 0.4440	$ 0.0133	$ 0.0066	$ 0.4639
443	Movie Theater	0.001470	per square foot	$ 0.6525	$ 0.0195	$ 0.0097	$ 0.6817
460	Arena	3.333000	per acre	$ 1,479.8347	$ 44.3950	$ 22.1975	$ 1,546.4272
480	Amusement Park	9.094838	per acre	$ 4,038.0608	$ 121.1418	$ 60.5709	$ 4,219.7735
490	Tennis Courts	0.243888	per acre	$ 108.2849	$ 3.2485	$ 1.6242	$ 113.1576
491	Racquet/Tennis Club	0.000307	per square foot	$ 0.1363	$ 0.0040	$ 0.0020	$ 0.1423
492	Health/Fitness Center	0.000705	per square foot	$ 0.3130	$ 0.0093	$ 0.0046	$ 0.3269
495	Recreational Community Center	0.001241	per square foot	$ 0.5510	$ 0.0165	$ 0.0082	$ 0.5757

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
Institutional (500-599)							
520	Private Elementary School	0.000982	per square foot	$ 0.4361	$ 0.0130	$ 0.0065	$ 0.4556
530	Private High School	0.000653	per square foot	$ 0.2899	$ 0.0086	$ 0.0043	$ 0.3028
560	Church/Place of Worship	0.000347	per square foot	$ 0.1542	$ 0.0046	$ 0.0023	$ 0.1611
565	Day Care Center	0.002818	per square foot	$ 1.2510	$ 0.0375	$ 0.0187	$ 1.3072
566	Cemetery	0.081425	per acre	$ 36.1524	$ 1.0845	$ 0.5422	$ 37.7791
Medical (600-699)							
610	Hospital	0.002938	per square foot	$ 1.3044	$ 0.0391	$ 0.0195	$ 1.3630
620	Nursing Home	0.002331	per square foot	$ 1.0351	$ 0.0310	$ 0.0155	$ 1.0816
630	Clinic	0.003926	per square foot	$ 1.7433	$ 0.0522	$ 0.0261	$ 1.8216
Office (700-799)							
710	General Office Building	0.003322	per square foot	$ 1.4751	$ 0.0442	$ 0.0221	$ 1.5414
714	Corporate Headquarters Building	0.003425	per square foot	$ 1.5206	$ 0.0456	$ 0.0228	$ 1.5890
715	Single-Tenant Office Building	0.003149	per square foot	$ 1.3980	$ 0.0419	$ 0.0209	$ 1.4608
720	Medical-Dental Office Building	0.004055	per square foot	$ 1.8004	$ 0.0540	$ 0.0270	$ 1.8814
760	Research and Development Center	0.002928	per square foot	$ 1.2999	$ 0.0389	$ 0.0194	$ 1.3582
770	Business Park	0.003079	per square foot	$ 1.3672	$ 0.0410	$ 0.0205	$ 1.4287
Retail (800-899)							
812	Building Materials and Lumber Store	0.001406	per square foot	$ 0.6242	$ 0.0187	$ 0.0093	$ 0.6522
813	Free-Standing Discount Superstore	0.000960	per square foot	$ 0.4262	$ 0.0127	$ 0.0063	$ 0.4452
814	Variety Store	0.000960	per square foot	$ 0.4262	$ 0.0127	$ 0.0063	$ 0.4452
815	Free-Standing Discount Store	0.001985	per square foot	$ 0.8812	$ 0.0264	$ 0.0132	$ 0.9208
816	Hardware/Paint Store	0.000964	per square foot	$ 0.4280	$ 0.0128	$ 0.0064	$ 0.4472
817	Nursery (Garden Center)	0.003120	per square foot	$ 1.3851	$ 0.0415	$ 0.0207	$ 1.4473
818	Nursery (Wholesale)	0.001667	per square foot	$ 0.7400	$ 0.0222	$ 0.0111	$ 0.7733
820	Shopping Center	0.001670	per square foot	$ 0.7415	$ 0.0222	$ 0.0111	$ 0.7748
823	Factory Outlet Center	0.001670	per square foot	$ 0.7415	$ 0.0222	$ 0.0111	$ 0.7748
826	Specialty Retail Center	0.001982	per square foot	$ 0.8800	$ 0.0264	$ 0.0132	$ 0.9196
841	Automobile Sales	0.001528	per square foot	$ 0.6784	$ 0.0203	$ 0.0101	$ 0.7088

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
843	Auto Parts Store	0.000960	per square foot	$ 0.4262	$ 0.0127	$ 0.0063	$ 0.4452
848	Tire Store	0.001280	per square foot	$ 0.5683	$ 0.0170	$ 0.0085	$ 0.5938
849	Tire Superstore	0.001280	per square foot	$ 0.5683	$ 0.0170	$ 0.0085	$ 0.5938
850	Supermarket	0.001164	per square foot	$ 0.5169	$ 0.0155	$ 0.0077	$ 0.5401
851	Convenience Market (Open 24 Hours)	0.001800	per square foot	$ 0.7992	$ 0.0239	$ 0.0119	$ 0.8350
853	Convenience Market with Gasoline Pumps	0.001800	per square foot	$ 0.7992	$ 0.0239	$ 0.0119	$ 0.8350
854	Discount Supermarket	0.002251	per square foot	$ 0.9995	$ 0.0299	$ 0.0149	$ 1.0443
860	Wholesale Market	0.000820	per square foot	$ 0.3640	$ 0.0109	$ 0.0054	$ 0.3803
861	Discount Club	0.001298	per square foot	$ 0.5762	$ 0.0172	$ 0.0086	$ 0.6020
862	Home Improvement Superstore	0.000960	per square foot	$ 0.4262	$ 0.0127	$ 0.0063	$ 0.4452
863	Electronics Superstore	0.000960	per square foot	$ 0.4262	$ 0.0127	$ 0.0063	$ 0.4452
870	Apparel Store	0.001670	per square foot	$ 0.7415	$ 0.0222	$ 0.0111	$ 0.7748
875	Department Store	0.001980	per square foot	$ 0.8791	$ 0.0263	$ 0.0131	$ 0.9185
880	Pharmacy/Drugstore	0.001670	per square foot	$ 0.7415	$ 0.0222	$ 0.0111	$ 0.7748
890	Furniture Store	0.000415	per square foot	$ 0.1843	$ 0.0055	$ 0.0027	$ 0.1925
Services (900-999)							
912	Drive-in Bank	0.004788	per square foot	$ 2.1260	$ 0.0637	$ 0.0318	$ 2.2215
931	Quality Restaurant	0.007460	per square foot	$ 3.3122	$ 0.0993	$ 0.0496	$ 3.4611
932	High-Turnover (Sit-Down) Restauant	0.007460	per square foot	$ 3.3122	$ 0.0993	$ 0.0496	$ 3.4611
934	Fast-Food Restaurant	0.010900	per square foot	$ 4.8395	$ 0.1451	$ 0.0725	$ 5.0571
941	Quick Lubrication Vehicle Shop	2.100000	per service bay	$ 932.3891	$ 27.9716	$ 13.9858	$ 974.3465
944	Gasoline/Service Station	0.160000	per pump	$ 71.0392	$ 2.1311	$ 1.0655	$ 74.2358
945	Gasoline Station w/Convenience Market	0.216000	per pump	$ 95.9029	$ 2.8770	$ 1.4385	$ 100.2184
947	Self-Service Car Wash	0.200000	per stall	$ 88.7990	$ 2.6639	$ 1.3319	$ 92.7948

Notes: ITE Code means the land use code assigned in the *Trip Generation* manual published by the Institute of Transportation Engineers, 9th Ed.
n/a - not applicable. Fee taken from the *Calculation of Housing Unit Fee* table.
"Square foot" means square foot of gross building floor area.

Fire Protection

Introduction

Fire protection is provided in Harris County through ten volunteer fire departments. Each department has under its command fire stations and fire trucks. The departments currently maintain 17 stations and substations located throughout the county and coordinate their activities and coverage through a Council of Fire Chiefs.

Service Area

Fire protection is provided countywide outside of the City of West Point, which has its own department and operates independently from the volunteer fire departments. For this reason, the entire county outside of West Point is considered a single service area for the provision of fire protection because all residents and employees within this area have equal access to the benefits of the service.

Level of Service

The current Level of Service is determined by an inventory of the square footage and heavy vehicles used for fire protection services. As shown in Table 38 and Table 39, the volunteer fire departments currently provide service with a combined building square footage of 61,945 in its 17 fire stations and supporting facilities, utilizing a total of 51 fire-fighting apparatus.

Table 38: Inventory of Fire Apparatus

Type and Number of Existing Vehicles*	
Fire Apparatus	
Pumper	32
Tender	4
Ladder	1
Rescue	6
Brush Truck	8
Total Fire Apparatus	**51**

* Vehicles having a service life of 10 years or more.

Table 39: Inventory of Fire Stations and Facilities

Existing Fire Stations and Facilities		
Name	**Location**	**Floor Area**
Antioch VFD - Station 100		
Station 1	5430 GA Hwy 210, Fortson	4,422
Station 2	5219 Lickskillet Road, Hamilton	448
Station 3	85 Satelite Circle, Fortson	448
Station 4	7840 GA Hwy 219, Hamilton	809
Station 5	3534 Mountain Hill Road, Fortson	468
Station 6	580 Harrisville Road, Fortson	1,280
Cataula VFD - Station 200		
Station 1	107 Raymond Drive, Catuala	2,170
Station 2	7120 GA Hwy 315, Cataula	5,200
Ellerslie VFD - Station 300		
Station 300	13425 Warm Springs Road, Ellerslie	8,400
Hamilton VFD - Station 1100		
Station 1100	10188 GA Hwy 16, Hamilton	7,700
Hopewell VFD - Station 500		
Station 500	6381 Hopewell Church Road, Pine Mountain	2,716
NW Harris VFD - Station 800		
Station 1	4433 Pine Lake Road, West Point	9,100
Station 2	2340 Piedmont Lake Road, Pine Mountain	984
Pine Mountain VFD - Station 1200		
Station 1200	301 East Chipley Street, Pine Mountain	4,160
Pine Mountain Valley VFD - Station 900		
Station 900	95 Park Lane, Pine Mountain Valley	6,100
Shiloh VFD - Station 1300		
Station 1300	1165 Main Street, Shiloh	3,840
Waverly Hall VFD - Station 1400		
Station 1400	547 O'Neal Drive, Waverly Hall	2,500
Fire Training Center		
Burn Building	10188 GA Hwy 116, Hamilton	1,200
	Total Existing Square Footage	***61,945***

Table 40: Level of Service Calculations

Level of Service			Future Demand	
Facilities	**Current Service Population**	**Level of Service**	**Future Service Population**	**New Growth Demand***
Existing Square Feet	**2021 Day-Night Population**	**Square Feet per Person**	**Day-Night Population Increase (2021-45)**	**Net New Square Feet Needed**
61,945	43,649	1.419170	24,763	35,143
Existing Fire Apparatus	**2021 Day-Night Population**	**Fire Apparatus per Person**	**Day-Night Population Increase (2021-45)**	**Net New Fire Apparatus Needed**
51	43,649	0.001168	24,763	28.93

*Number of fire apparatus will be rounded down to 28 vehicles having 100% impact fee eligibility.

Table 40 presents the calculation of Level of Service based on the inventory in the preceding tables. Day-night population is used in calculating Level of Service and demand for future facilities due to fire protection services being available to both residences and businesses on a 24-hour basis.

The Level of Service is measured in terms of the existing building area in square feet and fire apparatus per 2021 day-night population in the county.

Forecasts for Service Area

Future Demand

Table 40 also calculates the future demand for square footage and fire apparatus, based on the LOS standards shown on the table that are applied to the expected day-night population growth between 2021 and 2045. Facilities needed to serve new growth in 2045 include 35,143 square feet in space that is 100% impact fee eligible because it is the full amount needed to meet new growth demand. Additional future needs are 28.93 fire apparatus. Note that, because only 'whole' vehicles can be purchased (as opposed to the portion of one – .93 of a vehicle – that is technically needed to meet future demand), this figure is rounded down to the nearest whole number, resulting in 28 fire apparatus that are 100% impact fee eligible.

Future Costs

Since the actual pace and timing of construction for the improvements to meet future demand have not been programmed, an 'average' year of 2033 is used for the Net Present Value calculations – some will occur earlier for less money, and some later at greater cost. All will average out.

To calculate the Net Present Value (NPV) of the impact fee eligible cost estimate for the construction of future fire stations or supporting facilities (which may be an expansion of an existing facility or the construction of a new building), the NPV is calculated by increasing the current (2021) estimated costs using the Engineering New Record's (ENR) 10-year average building cost inflation (BCI) rate, and then discounting this future amount back using the Net Discount Rate.

A per-square foot construction cost of $300 has been used to estimate the cost of future building projects, based on an average of similar projects in Georgia communities.

To calculate the NPV of the impact fee eligible cost estimate of the fire apparatus, the current estimated cost is inflated to the target year (2033) using the 10-year average Consumer Price Index (CPI) and then reduced using the Net Discount Rate to produce the Net Present Value. The estimated unit cost is the average cost of the existing vehicle types operating in the County, based on current prevailing rates.

The project costs are shown on Table 41: Project Costs to Meet Future Demand.

Table 41: Project Costs to Meet Future Demand

Description	Number	2021 Cost Each*	Total 2021Cost	Estimated Cost 2033 (NPV)**	% Impact Fee Eligible	Total Impact Fee Eligible Cost
New Building Area (sq.ft.)	35,143	$ 300.00	$ 10,542,907.00	$ 13,531,415.80	100%	$ 13,531,415.80
New Fire Apparatus	28	$ 325,000.00	$ 9,100,000.00	$ 11,166,357.31	100%	$ 11,166,357.31
	Totals		**$ 19,642,907.00**	**$ 24,697,773.11**		**$ 24,697,773.11**

* Building cost estimates based on comparable facilities in other Georgia communities; estimated fire apparatus unit cost represents the average cost of vehicle types in the existing inventory based on current prevailing rates.
**2021 cost estimate inflated to target year (2033) using the BCI and CPI, reduced to NPV using the Discount Rate.

Since the new building area and fire apparatus are exactly what is required to serve new growth, the projects are 100% impact fee eligible. The impact fee eligible square footage may be allocated across various new or expanded fire stations or other supporting facilities and may be implemented in different years. As previously stated, an 'average' year of 2033 is used for the Net Present Value calculations since it is unknown when additional building space will be constructed and when additional fire apparatus will be purchased.

Credit Calculation

Property Tax Credit

There is no property tax credit for this public facility category because there is no non-eligible portion of the projects that would otherwise be funded by new growth and development.

Net Impact Cost Calculation

Fire Protection impact fees are collected from both residential and nonresidential development.

Table 42: Net Cost to Serve New Growth

Description	Total
Total Eligible Cost of Fire Projects	$ 24,697,773.11
minus credit for Tax Contribution	$ -
= Total Net Eligible Fire Protection Costs	$ 24,697,773.11
÷ Day-Night Pop Increase (2021-2045) in Service Area	24,763
= Cost per Person	**$ 997.3626**

Note that an administration fee and a fee for the preparation of the CIE is added to the net cost figure to produce the gross fee, which is shown on the Maximum Impact Fee Schedule.

Using the total eligible cost figure for project costs from Table 41, in Table 42 the net impact cost per day-night person is calculated, based on the increase in the day-night population between 2021 and 2045. Since there are no credits applicable to the Fire Protection category, the total eligible costs equals the net eligible costs. This figure, divided by the future increase in day-night population in the service area, results in a 'cost per person', which will be used to calculate impact fees for all nonresidential land uses.

A final calculation, shown in Table 43**,** is necessary in order to fairly distribute the portion of project costs that are attributable to residential growth, because they are assessed impact fees per housing unit rather than by person.

Table 43: Calculation of Net Housing Fee

Factor	Data
Residential Population Increase (2021-2045)	20,916
÷ Day/Night Population Increase (2021-2045)	24,763
= Residential Increase as % of Total Increase	84.465%
Total Net Project Costs	$ 24,697,773.11
× Residential % of Total Day-Night Increase =	$ 20,860,918.99
÷ New Housing Units (2021-2045)	8,737
= Net Impact Fee per Housing Unit	**$ 2,387.6523**

The portion of project cost that is attributable to new residential growth is calculated based on the percentage of the total day-night population increase that is comprised of new residents. This percentage is then applied to the total net project cost figure to produce the cost attributable to new residential growth. Finally, this cost attributable to new residential growth is divided by the number of new housing units projected to 2045 to produce a 'net impact fee per housing unit'.

Maximum Impact Fee Schedule—Fire Protection

The maximum net impact fee that could be charged in Harris County for the Fire Protection category, based on the calculations carried out in this chapter, is shown on Table 43.

The following are added to the net impact fee to produce the total maximum impact fee on Table 44:

- A 3% administrative fee; and,
- A 1.5% fee to cover the cost of preparing the Capital Improvements Element (CIE).

The total impact fees on the following table are transferred to Maximum Impact Fee Schedule in the Introduction Chapter of this report.

Table 44: Maximum Impact Fee Schedule - Fire Protection Facilities

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
			Net Cost per Day/Night Person (Employee):	**$ 997.3626**			
Residential (200-299)							
210	Single-Family Detached Housing	n/a	per dwelling	$ 2,387.6523	$ 71.6295	$ 35.8147	$ 2,495.0965
220	Apartment	n/a	per dwelling	$ 2,387.6523	$ 71.6295	$ 35.8147	$ 2,495.0965
230	Residential Condominium/Townhouse	n/a	per dwelling	$ 2,387.6523	$ 71.6295	$ 35.8147	$ 2,495.0965
Port and Terminal (000-099)							
030	Intermodal Truck Terminal	0.001415	per square foot	$ 1.4111	$ 0.0423	$ 0.0211	$ 1.4745
Industrial/Agricultural (100-199)							
110	General Light Industrial	0.002308	per square foot	$ 2.3019	$ 0.0690	$ 0.0345	$ 2.4054
120	General Heavy Industrial	0.001829	per square foot	$ 1.8244	$ 0.0547	$ 0.0273	$ 1.9064
140	Manufacturing	0.001793	per square foot	$ 1.7887	$ 0.0536	$ 0.0268	$ 1.8691
150	Warehousing	0.000915	per square foot	$ 0.9128	$ 0.0273	$ 0.0136	$ 0.9537
151	Mini-Warehouse	0.000077	per square foot	$ 0.0768	$ 0.0023	$ 0.0011	$ 0.0802
152	High-Cube Warehouse	0.000076	per square foot	$ 0.0757	$ 0.0022	$ 0.0011	$ 0.0790
Lodging (300-399)							
310	Hotel or Conference Motel	0.569735	per room	$ 568.2324	$ 17.0469	$ 8.5234	$ 593.8027
311	All Suites Hotel	0.500000	per room	$ 498.6813	$ 14.9604	$ 7.4802	$ 521.1219
320	Motel	0.439500	per room	$ 438.3413	$ 13.1502	$ 6.5751	$ 458.0666
Recreational (400-499)							
430	Golf Course	0.245614	per acre	$ 244.9663	$ 7.3489	$ 3.6744	$ 255.9896
437	Bowling Alley	0.001000	per square foot	$ 0.9974	$ 0.0299	$ 0.0149	$ 1.0422
443	Movie Theater	0.001470	per square foot	$ 1.4656	$ 0.0439	$ 0.0219	$ 1.5314
460	Arena	3.333000	per acre	$ 3,324.2095	$ 99.7262	$ 49.8631	$ 3,473.7988
480	Amusement Park	9.094838	per acre	$ 9,070.8512	$ 272.1255	$ 136.0627	$ 9,479.0394
490	Tennis Courts	0.243888	per acre	$ 243.2446	$ 7.2973	$ 3.6486	$ 254.1905
491	Racquet/Tennis Club	0.000307	per square foot	$ 0.3061	$ 0.0091	$ 0.0045	$ 0.3197
492	Health/Fitness Center	0.000705	per square foot	$ 0.7031	$ 0.0210	$ 0.0105	$ 0.7346
495	Recreational Community Center	0.001241	per square foot	$ 1.2378	$ 0.0371	$ 0.0185	$ 1.2934

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
Institutional (500-599)							
520	Private Elementary School	0.000982	per square foot	$ 0.9796	$ 0.0293	$ 0.0146	$ 1.0235
530	Private High School	0.000653	per square foot	$ 0.6513	$ 0.0195	$ 0.0097	$ 0.6805
560	Church/Place of Worship	0.000347	per square foot	$ 0.3463	$ 0.0103	$ 0.0051	$ 0.3617
565	Day Care Center	0.002818	per square foot	$ 2.8102	$ 0.0843	$ 0.0421	$ 2.9366
566	Cemetery	0.081425	per acre	$ 81.2106	$ 2.4363	$ 1.2181	$ 84.8650
Medical (600-699)							
610	Hospital	0.002938	per square foot	$ 2.9300	$ 0.0879	$ 0.0439	$ 3.0618
620	Nursing Home	0.002331	per square foot	$ 2.3251	$ 0.0697	$ 0.0348	$ 2.4296
630	Clinic	0.003926	per square foot	$ 3.9160	$ 0.1174	$ 0.0587	$ 4.0921
Office (700-799)							
710	General Office Building	0.003322	per square foot	$ 3.3135	$ 0.0994	$ 0.0497	$ 3.4626
714	Corporate Headquarters Building	0.003425	per square foot	$ 3.4159	$ 0.1024	$ 0.0512	$ 3.5695
715	Single-Tenant Office Building	0.003149	per square foot	$ 3.1403	$ 0.0942	$ 0.0471	$ 3.2816
720	Medical-Dental Office Building	0.004055	per square foot	$ 4.0443	$ 0.1213	$ 0.0606	$ 4.2262
760	Research and Development Center	0.002928	per square foot	$ 2.9201	$ 0.0876	$ 0.0438	$ 3.0515
770	Business Park	0.003079	per square foot	$ 3.0711	$ 0.0921	$ 0.0460	$ 3.2092
Retail (800-899)							
812	Building Materials and Lumber Store	0.001406	per square foot	$ 1.4023	$ 0.0420	$ 0.0210	$ 1.4653
813	Free-Standing Discount Superstore	0.000960	per square foot	$ 0.9575	$ 0.0287	$ 0.0143	$ 1.0005
814	Variety Store	0.000960	per square foot	$ 0.9575	$ 0.0287	$ 0.0143	$ 1.0005
815	Free-Standing Discount Store	0.001985	per square foot	$ 1.9795	$ 0.0593	$ 0.0296	$ 2.0684
816	Hardware/Paint Store	0.000964	per square foot	$ 0.9614	$ 0.0288	$ 0.0144	$ 1.0046
817	Nursery (Garden Center)	0.003120	per square foot	$ 3.1113	$ 0.0933	$ 0.0466	$ 3.2512
818	Nursery (Wholesale)	0.001667	per square foot	$ 1.6623	$ 0.0498	$ 0.0249	$ 1.7370
820	Shopping Center	0.001670	per square foot	$ 1.6656	$ 0.0499	$ 0.0249	$ 1.7404
823	Factory Outlet Center	0.001670	per square foot	$ 1.6656	$ 0.0499	$ 0.0249	$ 1.7404
826	Specialty Retail Center	0.001982	per square foot	$ 1.9769	$ 0.0593	$ 0.0296	$ 2.0658
841	Automobile Sales	0.001528	per square foot	$ 1.5239	$ 0.0457	$ 0.0228	$ 1.5924

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
843	Auto Parts Store	0.000960	per square foot	$ 0.9575	$ 0.0287	$ 0.0143	$ 1.0005
848	Tire Store	0.001280	per square foot	$ 1.2766	$ 0.0382	$ 0.0191	$ 1.3339
849	Tire Superstore	0.001280	per square foot	$ 1.2766	$ 0.0382	$ 0.0191	$ 1.3339
850	Supermarket	0.001164	per square foot	$ 1.1611	$ 0.0348	$ 0.0174	$ 1.2133
851	Convenience Market (Open 24 Hours)	0.001800	per square foot	$ 1.7953	$ 0.0538	$ 0.0269	$ 1.8760
853	Convenience Market with Gasoline Pumps	0.001800	per square foot	$ 1.7953	$ 0.0538	$ 0.0269	$ 1.8760
854	Discount Supermarket	0.002251	per square foot	$ 2.2453	$ 0.0673	$ 0.0336	$ 2.3462
860	Wholesale Market	0.000820	per square foot	$ 0.8176	$ 0.0245	$ 0.0122	$ 0.8543
861	Discount Club	0.001298	per square foot	$ 1.2943	$ 0.0388	$ 0.0194	$ 1.3525
862	Home Improvement Superstore	0.000960	per square foot	$ 0.9575	$ 0.0287	$ 0.0143	$ 1.0005
863	Electronics Superstore	0.000960	per square foot	$ 0.9575	$ 0.0287	$ 0.0143	$ 1.0005
870	Apparel Store	0.001670	per square foot	$ 1.6656	$ 0.0499	$ 0.0249	$ 1.7404
875	Department Store	0.001980	per square foot	$ 1.9748	$ 0.0592	$ 0.0296	$ 2.0636
880	Pharmacy/Drugstore	0.001670	per square foot	$ 1.6656	$ 0.0499	$ 0.0249	$ 1.7404
890	Furniture Store	0.000415	per square foot	$ 0.4140	$ 0.0124	$ 0.0062	$ 0.4326
Services (900-999)							
912	Drive-in Bank	0.004788	per square foot	$ 4.7757	$ 0.1432	$ 0.0716	$ 4.9905
931	Quality Restaurant	0.007460	per square foot	$ 7.4403	$ 0.2232	$ 0.1116	$ 7.7751
932	High-Turnover (Sit-Down) Restauant	0.007460	per square foot	$ 7.4403	$ 0.2232	$ 0.1116	$ 7.7751
934	Fast-Food Restaurant	0.010900	per square foot	$ 10.8713	$ 0.3261	$ 0.1630	$ 11.3604
941	Quick Lubrication Vehicle Shop	2.100000	per service bay	$ 2,094.4615	$ 62.8338	$ 31.4169	$ 2,188.7122
944	Gasoline/Service Station	0.160000	per pump	$ 159.5780	$ 4.7873	$ 2.3936	$ 166.7589
945	Gasoline Station w/Convenience Market	0.216000	per pump	$ 215.4303	$ 6.4629	$ 3.2314	$ 225.1246
947	Self-Service Car Wash	0.200000	per stall	$ 199.4725	$ 5.9841	$ 2.9920	$ 208.4486

Notes: ITE Code means the land use code assigned in the *Trip Generation* manual published by the Institute of Transportation Engineers, 9th Edition.
n/a - not applicable. Fee taken from the *Calculation of Housing Unit Fee* table.
"Square foot" means square foot of gross building floor area.

Emergency Medical Services

Introduction

Emergency medical services are provided by Harris County through its Emergency Medical Services (EMS) Department. The EMS Department provides advanced life support (ALS) ambulance service and maintains four EMS stations located throughout the county operating 24/7 with a fleet of ambulances and supporting equipment.

Service Area

Emergency medical services are provided countywide outside of the City of West Point, which has its own department and operates independently from the County EMS Department. For this reason, the entire county outside of West Point is considered a single service area for the provision of EMS services because all residents and employees within this area have equal access to the benefits of the service.

Level of Service

The Level of Service is determined by an inventory of the square footage, vehicles, and equipment currently used by the EMS Department and by the planned addition of building space in the form of expansions to two EMS stations and the addition of three new stations as well as the addition of five ambulances. These planned improvements have been identified to serve the needs of both existing and future growth to 2045.

As shown in Table 45, the EMS Department currently provides service with a combined building square footage of 19,341 in its 4 stations, utilizing a variety of vehicles (that include seven ambulances) and related equipment.

Table 45 also shows two future building expansion projects and three new stations, which would add 17,800 square feet to the inventory of building area for a total of 37,141 square feet. In addition, five additional ambulances are shown as being added to the fleet in the future, resulting in a total of 12 ambulances.

Table 45: Inventory of EMS Facilities

Description	Quantity
Existing Building Floor Area (in square feet)	
Station 1 EMS Hamilton	6,750
Station 2 EMS Mountain Hill	7,200
Station 3 EMS Waverly Hall	3,500
Station 4 EMS Pine Mountain	1,891
Total Building Floor Area	*19,341*
Existing Vehicles & Equipment*	
Ambulances	*7*
ATV Side x Sides	*2*
Emergency Response Boats	*1*
Trailers**	*2*
Field/Administrative Vehicles	*3*
Planned Building Floor Area (in square feet)	
Station 1 Expansion	1,400
Station 2 Expansion	1,400
Station 5 (New)	5,000
Station 6 (New)	5,000
Station 7 (New)	5,000
Total Planned Building Floor Area	*17,800*
Planned Vehicles	
Ambulances	5

Table 46 on the next page presents the calculation of Level of Service based on the inventory and planned improvements on the table above. Day-night population is used in calculating Level of Service and demand for future facilities due to the EMS Department serving both residences and businesses throughout the county on a 24-hour basis.

The Level of Service is measured in terms of the existing vehicles and equipment used by the EMS Department per 2021 day-night population in the county, with the exception that the LOS for ambulances is based on the total number (existing and planned, which is 12) that are sufficient to meet the needs of the County through 2045. This same looking-forward approach is used to calculate the LOS for building floor area. In this instance, the existing and planned square footage combined (totaling 37,141 in size) is anticipated to serve future growth and development.

Table 46: Level of Service Calculations

Level of Service			Future Demand	
Facilities	**Service Population**	**Level of Service**	**Future Population**	**New Growth Demand***
Existing and Planned Square Feet	**2045 Day-Night Population**	**Square Feet of Floor Area per Person**	**2045 Day-Night Population**	**Net Square Feet of New Floor Area Needed**
37,141	68,412	0.542903	68,412	17,800
Existing and Planned Ambulances	**2045 Day-Night Population**	**Ambulances per Person**	**2045 Day-Night Population**	**Net New Ambulances Needed**
12	68,412	0.000175	68,412	5.00
Existing ATVs	**2021 Day-Night Population**	**ATVs per Person**	**2021-2045 Day-Night Population**	**Net New ATVs Needed**
2	43,649	0.000046	24,763	1.13
Existing Boats	**2021 Day-Night Population**	**Boats per Person**	**2021-2045 Day-Night Population**	**Net New Boats Needed**
1	43,649	0.000023	24,763	0.57
Existing Trailers	**2021 Day-Night Population**	**Trailers per Person**	**2021-2045 Day-Night Population**	**Net New Trailers Needed**
2	43,649	0.000046	24,763	1.13
Existing Vehicles	**2021 Day-Night Population**	**Ambulance per Person**	**2021-2045 Day-Night Population**	**Net New Vehicles Needed**
3	43,649	0.000069	24,763	1.70

* System improvements are 100% impact fee eligible to the whole number. One **ATV** is 100% impact eligible, a second is 13% impact fee eligible. One **boat** is impact fee eligible, at 57%. One **trailer** is 100% impact fee eligible, a second is 13% impact fee eligible. **One administrative vehicle** is 100% impact fee eligible, a second is 70% impact fee eligible.

Forecasts for Service Area

Future Demand

Table 46 also calculates the future demand for EMS facilities. For ATVs, boats, trailers, and vehicles (excluding ambulances), future demand is based on the LOS standards that are applied to the expected day-night population growth between 2021 and 2045. As shown on the table, 'new growth demand' technically only requires portions of some components. For example, 1.13 ATVs are required to serve future growth based on the Level of Service, resulting in one ATV being 100% impact fee eligible but only a portion (.13) of the second ATV is eligible because it is not fully needed for future growth. Since a whole second ATV is mathematically not required, only 13% of the cost of the second ATV is impact fee eligible.

For building floor area and ambulances, future demand is based on the EMS Department's plans to add additional building space and ambulances to the current system. The resulting expanded and new EMS stations and expanded fleet of ambulances are intended to serve future growth in the coming years. This is represented in the 'New Growth Demand' column.

Future Costs

Current (2021) estimated costs for system improvements needed to meet future demand are provided in Table 47.

The Net Present Value of impact fee eligible project costs are shown in Table 48.

To calculate the Net Present Value (NPV) of the impact fee eligible cost estimate for the construction of future building floor area, the NPV is calculated by increasing the current (2021) estimated costs to the target implementation years (as shown in the table) using the Engineering News Record's (ENR) 10-year average building cost inflation (BCI) rate, and then discounting this future amount back to 2021 current dollars using the Net Discount Rate.

To calculate the NPV of the impact fee eligible cost estimates for ambulances, ATVs, boats, trailers, and field/administrative vehicles, the current estimated cost is inflated to the target years shown on Table 48 using the 10-year average Consumer Price Index (CPI) and then reduced using the Net Discount Rate to produce the 2021 Net Present Value.

Table 47: System Improvement Costs to Meet Future Demand

Year	Buildings			Vehicles & Equipment		
	Project	Square Feet	2021 Cost*	Type	Number	2021 Cost*
2022	Station 1 Expansion	1,440	$ 244,800.00	Boat	1	$ 25,000.00
	Station 2 Expansion	1,440	$ 244,800.00	Admin. Vehicle	1	$ 45,000.00
2023						
2024						
2025						
2026	Future Station 5	5,000	$ 850,000.00	Ambulance	2	$ 546,000.00
				ATV	1	$ 15,000.00
				Trailer	1	$ 5,000.00
				Admin. Vehicle	1	$ 45,000.00
2027						
2028						
2029						
2030						
2032	Future Station 6	5,000	$ 850,000.00	Ambulance	2	$ 273,000.00
2033						
2034						
2035				ATV	1	$ 15,000.00
				Trailer	1	$ 5,000.00
2036						
2037						
2038	Future Station 7	5,000	$ 850,000.00	Ambulance	1	$ 273,000.00
2039						
2040						
2041						
2042						
2043						
2044						
2045						

*Cost estimates provided by Harris County EMS Department.

Table 48: Impact Fee Cost Calculations

Year	Costs in 2021 Dollars				Net Present Value*
	Project	Cost	% Impact Fee Eligible	New Growth Costs	
2022	Station 1 Expansion	$ 244,800.00	100%	$ 244,800.00	$ 249,944.35
	Station 2 Expansion	$ 244,800.00	100%	$ 244,800.00	$ 249,944.35
	Boat (1)	$ 25,000.00	57%	$ 14,250.00	$ 14,495.08
	Admin. Vehicle (1)	$ 45,000.00	100%	$ 45,000.00	$ 45,773.95
2026	Future Station 5	$ 850,000.00	100%	$ 850,000.00	$ 943,144.97
	Ambulance (2)	$ 546,000.00	100%	$ 546,000.00	$ 594,595.84
	ATV (1)	$ 15,000.00	100%	$ 15,000.00	$ 16,335.05
	Trailer (1)	$ 5,000.00	100%	$ 5,000.00	$ 5,445.02
	Admin. Vehicle (1)	$ 45,000.00	70%	$ 31,500.00	$ 34,303.61
2032	Future Station 6	$ 850,000.00	100%	$ 850,000.00	$ 1,068,488.58
	Ambulance (2)	$ 273,000.00	100%	$ 273,000.00	$ 329,326.69
2035	ATV (1)	$ 15,000.00	13%	$ 1,950.00	$ 2,475.80
	Trailer (1)	$ 5,000.00	13%	$ 650.00	$ 825.27
2038	Future Station 7	$ 850,000.00	100%	$ 850,000.00	$ 1,210,490.31
	Ambulance (1)	$ 273,000.00	100%	$ 273,000.00	$ 364,806.02
	Totals	**$ 4,286,600.00**		**$ 4,244,950.00**	**$ 5,130,394.87**

*2021 cost estimate inflated to target year using the BCI and CPI, reduced to NPV using the Discount Rate.

Since the new building area and the number of ambulances are exactly what is required to serve new growth, the projects are 100% impact fee eligible. As stated earlier with the ATV example, the other components are only partially impact fee eligible because only portions of each are technically 'demanded' by future growth.

Credit Calculation

Property Tax Credit

Credits against impact fees are applied when those being assessed the fee will also be contributing to the project's cost through their property taxes, thus creating a double-taxation situation. For this calculation it is assumed the County will meet its financial obligations toward non-eligible project costs through general fund expenditures. For this reason, the credit calculated here is based on future property tax contributions into the general fund that will be generated by new growth and development to pay for the non-eligible costs.

The credit, or future contribution from new growth, is shown on Table 49: New Growth Contribution from Future Property Taxes.

Table 49: New Growth Contribution from Future Property Taxes

Year	Ineligible Funding Required (NPV)*	Property Tax Credit**	Contribution from New Growth
2021		0.00%	
2022	$10,934.89	3.85%	$ 421.24
2023		7.49%	
2024		10.93%	
2025		14.17%	
2026	$14,701.55	17.24%	$ 2,535.00
2027		20.16%	
2028		22.94%	
2029		25.57%	
2030		28.07%	
2031		30.47%	
2032		32.76%	
2033		34.93%	
2034		37.02%	
2035	$22,091.80	39.01%	$ 8,618.41
2036		40.93%	
2037		42.75%	
2038		44.51%	
2039		46.19%	
2040		47.80%	
2041		49.37%	
2042		50.85%	
2043		52.30%	
2044		53.67%	
2045		55.01%	
		Total New Growth Contribution	**$ 11,574.65**

* Net Present Value of amount to be paid from property taxes to cover costs not eligible for impact fee funding.

** The percentage that new growth will generate in property taxes that would be applied to the ineligible portion of impact fee projects.

The 'Property Tax Credit' is the percentage of the total countywide tax base (i.e., population and businesses combined) that represents accumulated new growth for each designated year, taken from the Cost Adjustments and Credits chapter.

The 'Contribution from New Growth' column shows the cost of the non-impact fee portion of EMS projects, multiplied by the tax credit percentage for the target implementation years.

Net Impact Cost Calculation

EMS impact fees are collected from both residential and nonresidential development.

Table 50: Net Cost to Serve New Growth

Description	Total
Total Eligible Cost of EMS Projects	$ 5,130,394.87
minus credit for Tax Contributions	$ (11,574.65)
= Net Eligible EMS Project Costs	$ 5,118,820.22
÷ Day-Night Pop Increase (2021-2045) in Service Area	24,763
= Cost per Person	**$ 206.7117**

Note that an administration fee and a fee for the preparation of the CIE is added to the net cost figure to produce the gross fee, which is shown on the Maximum Impact Fee Schedule.

In calculating the net impact cost on Table 50: Net Cost to Serve New Growth, the credit for future property tax contributions (from Table 49) is subtracted from the total impact fee eligible cost, as discussed above. Using the net eligible cost figure, the 'net impact cost per person' is calculated, based on the increase in day-night population between 2021 and 2045. This figure will be used to calculate impact fees for all nonresidential land uses.

A final calculation, shown in Table 51, is necessary in order to fairly distribute the portion of project costs that are attributable to residential growth, because they are assessed impact fees per housing unit rather than by person.

Table 51: Calculation of Net Housing Fee

Factor	Data
Residential Population Increase (2021-2045)	20,916
÷ Day-Night Population Increase (2021-2045)	24,763
= Residential Increase as % of Total Increase	84.465%
Net Eligible EMS Project Costs	$ 5,118,820.22
× Residential % of Total Day-Night Increase =	$ 4,323,600.08
÷ New Housing Units (2021-2045)	8,737
= Net Impact Fee per Housing Unit	**$ 494.8609**

The portion of project cost that is attributable to new residential growth is calculated based on the percentage of the total day-night population increase that is comprised of new residents. This percentage is then applied to the total net project cost figure to produce the cost attributable to new residential growth. Finally, this cost attributable to new residential growth is divided by the number of new housing units projected to 2045 to produce a 'net impact fee per housing unit'.

Maximum Impact Fee Schedule—EMS

The maximum net impact fee that could be charged in Harris County for the EMS category for nonresidential land uses, based on the calculations carried out in this chapter, is taken from Table 50. For residential uses, the 'per dwelling' fee is taken from Table 51.

The following are added to the net impact fee to produce the total maximum impact fee on Table 52:

- A 3% administrative fee; and,
- A 1.5% fee to cover the cost of preparing the Capital Improvements Element (CIE).

The total impact fees on the following table are transferred to Maximum Impact Fee Schedule in the Introduction Chapter of this report.

Table 52: Calculation of Maximum Impact Fee - EMS

Net Cost per Day/Night Person (Employee): $ 206.7117

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep(1.5%)	Total Impact Fee
Residential (200-299)							
210	Single-Family Detached Housing	n/a	per dwelling	$ 494.8609	$ 14.8458	$ 7.4229	$ 517.1296
220	Apartment	n/a	per dwelling	$ 494.8609	$ 14.8458	$ 7.4229	$ 517.1296
230	Residential Condominium/Townhouse	n/a	per dwelling	$ 494.8609	$ 14.8458	$ 7.4229	$ 517.1296
Port and Terminal (000-099)							
30	Intermodal Truck Terminal	0.001415	per square foot	$ 0.2925	$ 0.0087	$ 0.0043	$ 0.3055
Industrial/Agricultural (100-199)							
110	General Light Industrial	0.002308	per square foot	$ 0.4771	$ 0.0143	$ 0.0071	$ 0.4985
120	General Heavy Industrial	0.001829	per square foot	$ 0.3781	$ 0.0113	$ 0.0056	$ 0.3950
140	Manufacturing	0.001793	per square foot	$ 0.3707	$ 0.0111	$ 0.0055	$ 0.3873
150	Warehousing	0.000915	per square foot	$ 0.1892	$ 0.0056	$ 0.0028	$ 0.1976
151	Mini-Warehouse	0.000077	per square foot	$ 0.0159	$ 0.0004	$ 0.0002	$ 0.0165
152	High-Cube Warehouse	0.000076	per square foot	$ 0.0157	$ 0.0004	$ 0.0002	$ 0.0163
Lodging (300-399)							
310	Hotel or Conference Motel	0.569735	per room	$ 117.7709	$ 3.5331	$ 1.7665	$ 123.0705
311	All Suites Hotel	0.500000	per room	$ 103.3559	$ 3.1006	$ 1.5503	$ 108.0068
320	Motel	0.439500	per room	$ 90.8499	$ 2.7254	$ 1.3627	$ 94.9380
Recreational (400-499)							
430	Golf Course	0.245614	per acre	$ 50.7713	$ 1.5231	$ 0.7615	$ 53.0559
437	Bowling Alley	0.001000	per square foot	$ 0.2067	$ 0.0062	$ 0.0031	$ 0.2160
443	Movie Theater	0.001470	per square foot	$ 0.3038	$ 0.0091	$ 0.0045	$ 0.3174
460	Arena	3.333000	per acre	$ 688.9701	$ 20.6691	$ 10.3345	$ 719.9737
480	Amusement Park	9.094838	per acre	$1,880.0094	$ 56.4002	$ 28.2001	$ 1,964.6097
490	Tennis Courts	0.243888	per acre	$ 50.4145	$ 1.5124	$ 0.7562	$ 52.6831
491	Racquet/Tennis Club	0.000307	per square foot	$ 0.0634	$ 0.0019	$ 0.0009	$ 0.0662
492	Health/Fitness Center	0.000705	per square foot	$ 0.1457	$ 0.0043	$ 0.0021	$ 0.1521
495	Recreational Community Center	0.001241	per square foot	$ 0.2566	$ 0.0076	$ 0.0038	$ 0.2680

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
Institutional (500-599)							
520	Private Elementary School	0.000982	per square foot	$ 0.2030	$ 0.0060	$ 0.0030	$ 0.2120
530	Private High School	0.000653	per square foot	$ 0.1350	$ 0.0040	$ 0.0020	$ 0.1410
560	Church/Place of Worship	0.000347	per square foot	$ 0.0718	$ 0.0021	$ 0.0010	$ 0.0749
565	Day Care Center	0.002818	per square foot	$ 0.5824	$ 0.0174	$ 0.0087	$ 0.6085
566	Cemetery	0.081425	per acre	$ 16.8316	$ 0.5049	$ 0.2524	$ 17.5889
Medical (600-699)							
610	Hospital	0.002938	per square foot	$ 0.6073	$ 0.0182	$ 0.0091	$ 0.6346
620	Nursing Home	0.002331	per square foot	$ 0.4819	$ 0.0144	$ 0.0072	$ 0.5035
630	Clinic	0.003926	per square foot	$ 0.8116	$ 0.0243	$ 0.0121	$ 0.8480
Office (700-799)							
710	General Office Building	0.003322	per square foot	$ 0.6868	$ 0.0206	$ 0.0103	$ 0.7177
714	Corporate Headquarters Building	0.003425	per square foot	$ 0.7080	$ 0.0212	$ 0.0106	$ 0.7398
715	Single-Tenant Office Building	0.003149	per square foot	$ 0.6509	$ 0.0195	$ 0.0097	$ 0.6801
720	Medical-Dental Office Building	0.004055	per square foot	$ 0.8382	$ 0.0251	$ 0.0125	$ 0.8758
760	Research and Development Center	0.002928	per square foot	$ 0.6052	$ 0.0181	$ 0.0090	$ 0.6323
770	Business Park	0.003079	per square foot	$ 0.6365	$ 0.0190	$ 0.0095	$ 0.6650
Retail (800-899)							
812	Building Materials and Lumber Store	0.001406	per square foot	$ 0.2906	$ 0.0087	$ 0.0043	$ 0.3036
813	Free-Standing Discount Superstore	0.000960	per square foot	$ 0.1984	$ 0.0059	$ 0.0029	$ 0.2072
814	Variety Store	0.000960	per square foot	$ 0.1984	$ 0.0059	$ 0.0029	$ 0.2072
815	Free-Standing Discount Store	0.001985	per square foot	$ 0.4103	$ 0.0123	$ 0.0061	$ 0.4287
816	Hardware/Paint Store	0.000964	per square foot	$ 0.1993	$ 0.0059	$ 0.0029	$ 0.2081
817	Nursery (Garden Center)	0.003120	per square foot	$ 0.6448	$ 0.0193	$ 0.0096	$ 0.6737
818	Nursery (Wholesale)	0.001667	per square foot	$ 0.3445	$ 0.0103	$ 0.0051	$ 0.3599
820	Shopping Center	0.001670	per square foot	$ 0.3452	$ 0.0103	$ 0.0051	$ 0.3606
823	Factory Outlet Center	0.001670	per square foot	$ 0.3452	$ 0.0103	$ 0.0051	$ 0.3606
826	Specialty Retail Center	0.001982	per square foot	$ 0.4097	$ 0.0122	$ 0.0061	$ 0.4280
841	Automobile Sales	0.001528	per square foot	$ 0.3158	$ 0.0094	$ 0.0047	$ 0.3299

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
843	Auto Parts Store	0.000960	per square foot	$ 0.1984	$ 0.0059	$ 0.0029	$ 0.2072
848	Tire Store	0.001280	per square foot	$ 0.2646	$ 0.0079	$ 0.0039	$ 0.2764
849	Tire Superstore	0.001280	per square foot	$ 0.2646	$ 0.0079	$ 0.0039	$ 0.2764
850	Supermarket	0.001164	per square foot	$ 0.2407	$ 0.0072	$ 0.0036	$ 0.2515
851	Convenience Market (Open 24 Hours)	0.001800	per square foot	$ 0.3721	$ 0.0111	$ 0.0055	$ 0.3887
853	Convenience Market with Gasoline Pumps	0.001800	per square foot	$ 0.3721	$ 0.0111	$ 0.0055	$ 0.3887
854	Discount Supermarket	0.002251	per square foot	$ 0.4654	$ 0.0139	$ 0.0069	$ 0.4862
860	Wholesale Market	0.000820	per square foot	$ 0.1694	$ 0.0050	$ 0.0025	$ 0.1769
861	Discount Club	0.001298	per square foot	$ 0.2683	$ 0.0080	$ 0.0040	$ 0.2803
862	Home Improvement Superstore	0.000960	per square foot	$ 0.1984	$ 0.0059	$ 0.0029	$ 0.2072
863	Electronics Superstore	0.000960	per square foot	$ 0.1984	$ 0.0059	$ 0.0029	$ 0.2072
870	Apparel Store	0.001670	per square foot	$ 0.3452	$ 0.0103	$ 0.0051	$ 0.3606
875	Department Store	0.001980	per square foot	$ 0.4093	$ 0.0122	$ 0.0061	$ 0.4276
880	Pharmacy/Drugstore	0.001670	per square foot	$ 0.3452	$ 0.0103	$ 0.0051	$ 0.3606
890	Furniture Store	0.000415	per square foot	$ 0.0858	$ 0.0025	$ 0.0012	$ 0.0895
Services (900-999)							
912	Drive-in Bank	0.004788	per square foot	$ 0.9898	$ 0.0296	$ 0.0148	$ 1.0342
931	Quality Restaurant	0.007460	per square foot	$ 1.5421	$ 0.0462	$ 0.0231	$ 1.6114
932	High-Turnover (Sit-Down) Restauant	0.007460	per square foot	$ 1.5421	$ 0.0462	$ 0.0231	$ 1.6114
934	Fast-Food Restaurant	0.010900	per square foot	$ 2.2532	$ 0.0675	$ 0.0337	$ 2.3544
941	Quick Lubrication Vehicle Shop	2.100000	per service bay	$ 434.0946	$ 13.0228	$ 6.5114	$ 453.6288
944	Gasoline/Service Station	0.160000	per pump	$ 33.0739	$ 0.9922	$ 0.4961	$ 34.5622
945	Gasoline Station w/Convenience Market	0.216000	per pump	$ 44.6497	$ 1.3394	$ 0.6697	$ 46.6588
947	Self-Service Car Wash	0.200000	per stall	$ 41.3423	$ 1.2402	$ 0.6201	$ 43.2026

Notes: ITE Code means the land use code assigned in the *Trip Generation* manual published by the Institute of Transportation Engineers, 9th Ed.
n/a - not applicable. Fee taken from the *Calculation of Housing Unit Fee* table.
"Square foot" means square foot of gross building floor area.

Emergency 911

Introduction

The Harris County E-911 Center provides emergency communications service throughout its service area. The department receives and process emergency and non-emergency telephone calls and dispatches emergency personnel from the Sheriff's Office; Hamilton, Pine Mountain, Shiloh, and Waverly Hall police departments; county EMS, and ten volunteer fire departments, and assists many other county departments and state agencies with their various communication needs.

Service Area

E-911 services are provided countywide outside of the City of West Point, which has its own department and operates independently from the County E-911 Department. For this reason, the entire county outside of West Point is considered a single service area for the provision of E-911 services because all residents and employees within this area have equal access to the benefits of the service.

Level of Service

The Level of Service is determined by an inventory of communication towers, vehicles, and equipment currently used by the E-911 Department and by the planned addition of building space in the form of a stand-alone 911 Center building.

Table 53: Inventory of E-911 Facilities

Description	Quantity
Existing Facilities	
Building Floor Area (in square feet)	
E-911 Department*, 9907 Ga. Hwy.	*3,300*
Communication Towers	*10*
*Heavy Vehicles**	
E-911 Field Truck	1
EMA Field Truck	1
Mass Casualty Bus	1
Total Existing Heavy Vehicles	*3*
Heavy Equipment	
Emergency Utility Trailer	*1*
Emergency Power System	*1*
Planned System	
Building Floor Area (in square feet)	
E-911 Center, location TBD	*5,000*

*Located in the Harris County Emergency Services Building.
**Vehicles having a service life of 10 years or more.

This planned improvement has been identified to serve the needs of both existing and future growth to 2045. As shown in Table 53, the E-911 Department currently provides service from a 3,300 square foot space within the County Emergency Services Building and utilizes 10 communication towers and a variety of vehicles and equipment in fulfilling its duties.

Table 54 on the next page presents the calculation of Level of Service based on the inventory and planned improvements in Table 53. Day-night population is used in calculating Level of Service and demand for future facilities due to the E-911 Department serving both residences and businesses throughout the county on a 24-hour basis.

The Level of Service is measured in terms of all facilities (with the exception of building floor area) used by the E-911 Department per 2021 day-night population in the county. The LOS for

building floor area, however, is based on the total number (existing and planned, which is 8,300 square feet) that are sufficient to meet the needs of the County through 2045.

Table 54: Level of Service Calculations

Level of Service			Future Demand	
Facilities	**Service Population**	**Level of Service**	**Future Population**	**New Growth Demand**
Existing and Planned Total Square Feet	**2045 Day-Night Population**	**Square Feet of Floor Area per Person**	**2045 Day-Night Population**	**Net New Square Feet Needed**
8,300	68,412	0.1213	68,412	5,000
Existing Towers	**2021 Day-Night Population**	**Towers per Person**	**2021-2045 Day-Night Population**	**Net New Towers Needed**
10	43,649	0.000229	24,763	5.67
Existing Heavy Vehicles	**2021 Day-Night Population**	**Vehicles per Person**	**2021-2045 Day-Night Population**	**Net New Vehicles Needed**
3	43,649	0.000069	24,763	1.70
Existing Utility Trailers	**2021 Day-Night Population**	**Trailers per Person**	**2021-2045 Day-Night Population**	**Net New Trailers Needed**
1	43,649	0.000023	24,763	0.57
Existing Power Systems	**2021 Day-Night Population**	**Power Systems per Person**	**2021-2045 Day-Night Population**	**Net New Power Systems Needed**
1	43,649	0.000023	24,763	0.57

* System improvements are 100% impact fee eligible to the whole number. Five **communication towers** are 100% impact fee eligible, a sixth is 67% impact fee eligible. One **vehicle** is 100% impact fee eligible, a second is 70% imact fee eligible. One **trailer** and one **emergency power system** are partially impact fee eligible, at 57%.

Forecasts for Service Area

Future Demand

Table 54 also calculates the future demand for E-911 facilities. For communication towers, vehicles, equipment, and emergency power systems, future demand is based on the LOS standards that are applied to the expected day-night population growth between 2021 and 2045. As shown on the table, 'new growth demand' technically only requires portions of some components. For example, 1.70 heavy vehicles are required to serve future growth based on the Level of Service. This means one vehicle is fully impact fee eligible, while the second is only partially eligible because only a portion (.70) of it is needed for future growth. Since a whole second vehicle is mathematically not required, only 70% of the cost of the second vehicle is impact fee eligible.

For building floor area, future demand is based on the E-911 Department's plans to add additional building space to its inventory. The resulting new, stand-alone E-911 Center building, combined with the existing floor area utilized for E-911 service in the Emergency Services Building, is intended to serve future growth in the coming years. This is represented in the 'New Growth Demand' column.

Future Costs

Both the current (2021) estimated costs and the Net Present Value of impact fee eligible project costs are shown in Table 55.

Projects are 100% impact fee eligible if their number is the lowest whole number that is required to serve new growth. As shown on the table, the whole number of communication towers (5) and heavy vehicles (1) are 100% impact fee eligible, while a sixth communication tower and a second vehicle are partially impact fee eligible. Both the trailer and emergency power system are only partially impact fee eligible, because only portions of each are technically 'demanded' by future growth.

To calculate the Net Present Value (NPV) of the impact fee eligible cost estimates for the construction of future building floor area and communication towers, the NPV is calculated by increasing the current (2021) estimated costs to the average target implementation year (2033) using the Engineering New Record's (ENR) 10-year average building cost inflation (BCI) rate, and then discounting this future amount back to 2021 using the Net Discount Rate.

To calculate the NPV of the impact fee eligible cost estimates for all other E-911 projects (vehicles, trailer, and emergency power systems), the current estimated cost is inflated to the same average target year shown on Table 55 using the 10-year average Consumer Price Index (CPI) and then reduced using the Net Discount Rate to produce the Net Present Value.

Table 55: Project Costs to Meet Future Demand

Description	Number	2021 Cost*	Estimated Cost 2033 (NPV)**	% Impact Fee Eligible	Total Impact Fee Eligible Cost
E-911 Center (square feet)	5,000	$8,000,000.00	$ 10,267,692.43	100%	$ 10,267,692.43
Communication Tower	5	$2,500,000.00	$ 3,208,653.88	100%	$ 3,208,653.88
Communication Tower	1	$ 500,000.00	$ 641,730.78	57%	$ 365,786.54
Heavy Vehicle	1	$ 70,000.00	$ 85,895.06	100%	$ 85,895.06
Heavy Vehicle	1	$ 70,000.00	$ 85,895.06	70%	$ 60,126.54
Trailer	1	$ 15,000.00	$ 18,406.08	57%	$ 10,491.47
Emergency Power System	1	$ 85,000.00	$ 104,301.14	57%	$ 59,451.65
		Totals	**$ 14,118,077.09**		**$ 13,842,132.86**

* Cost estimates provided by Harris County E-911 Department.
**2021 cost estimate inflated to target year (2033) using the CPI and BCI, reduced to NPV using the Discount Rate.

Credit Calculation

Property Tax Credit

Credits against impact fees are applied when those being assessed the fee will also be contributing to the project's cost through their property taxes, thus creating a double-taxation situation. For this calculation it is assumed the County will meet its financial obligations toward non-eligible project costs through general fund expenditures. For this reason, the credit calculated here is based on future property tax contributions into the general fund that will be generated by new growth and development to pay for the non-eligible costs. The credit, or future contribution from new growth, is shown on Table 56.

Table 56: New Growth Contribution from Future Property Taxes

Year	Ineligible Funding Required (NPV)*	Property Tax Credit**	Contribution from New Growth
2033	$ 354,476.86	34.93%	$ 123,832.40
		Total New Growth Contribution	**$ 123,832.40**

* Net Present Value of amount to be paid from property taxes to cover costs not eligible for impact fee funding.

** The percentage that new growth will generate in property taxes that would be applied to the ineligible portion of impact fee projects.

The 'Property Tax Credit' is the percentage of the total countywide tax base (i.e., population and businesses combined) base that represents accumulated new growth for each designated year, taken from the Cost Adjustments and Credits chapter.

The 'Contribution from New Growth' column shows the cost of the non-impact fee portion of E-911 projects, multiplied by the tax credit percentage for the 'average' implementation year (2033).

Net Impact Cost Calculation

E-911 impact fees are collected from both residential and nonresidential development.

Table 57: Net Cost to Serve New Growth

Description	Total
Total Eligible Cost of E-911 Projects	$ 13,842,132.86
minus credit for Tax Contributions	$ (123,832.40)
= Net Eligible E-911 Project Costs	$ 13,718,300.46
÷ Day-Night Pop Increase (2021-2045)	24,763
= Net Impact Cost per Person	**$ 553.9819**

Note that an administration fee and a fee for the preparation of the CIE is added to the net cost figure to produce the gross fee, which is shown on the Maximum Impact Fee Schedule.

In calculating the net impact cost on Table 57, the credit for future property tax contributions (from Table 56) is subtracted from the total impact fee eligible cost, as discussed above. Using the net eligible cost figure, the net impact cost per housing unit is calculated, based on the increase in dwelling units between 2021 and 2045. This figure, divided by the future increase in day-night population, results in a 'net impact cost per person', which will be used to calculate impact fees for all nonresidential land uses.

A final calculation, shown in Table 58, is necessary in order to fairly distribute the portion of project costs that are attributable to residential growth, because they are assessed impact fees per housing unit rather than by person.

Table 58: Calculation of Net Housing Fee

Factor	Data
Residential Population Increase (2021-2045)	20,916
÷ Day-Night Population Increase (2021-2045)	24,763
= Residential Increase as % of Total Increase	84.465%
Total Net Eligible Public Safety Facilities Project Costs	$ 13,718,300.46
× Residential % of Total Day-Night Increase =	$ 11,587,131.89
÷ New Housing Units (2021-2045)	8,737
= Net Impact Fee per Housing Unit	**$ 1,326.2140**

The portion of project cost that is attributable to new residential growth is calculated based on the percentage of the total day-night population increase that is comprised of new residents. This percentage is then applied to the total net project cost figure to produce the cost attributable to new residential growth. Finally, this cost attributable to new residential growth is divided by the number of new housing units projected to 2045 to produce a 'net impact fee per housing unit'.

Maximum Impact Fee Schedule—E-911

The maximum net impact fee that could be charged in Harris County for the E-911 category, based on the calculations carried out in this chapter, is shown on Table 59.

The following are added to the net impact fee to produce the total maximum impact fee on Table 59:

- A 3% administrative fee; and,
- A 1.5% fee to cover the cost of preparing the Capital Improvements Element (CIE).

The total impact fees on the following table are transferred to Maximum Impact Fee Schedule in the Introduction Chapter of this report.

Table 59: Calculation of Maximum Impact Fee – E-911

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
			Net Cost per Day/Night Person (Employee):	**$ 553.9819**			
Residential (200-299)							
210	Single-Family Detached Housing	n/a	per dwelling	$ 1,326.2140	$ 39.7864	$ 19.8932	$ 1,385.8936
220	Apartment	n/a	per dwelling	$ 1,326.2140	$ 39.7864	$ 19.8932	$ 1,385.8936
230	Residential Condominium/Townhouse	n/a	per dwelling	$ 1,326.2140	$ 39.7864	$ 19.8932	$ 1,385.8936
Port and Terminal (000-099)							
30	Intermodal Truck Terminal	0.001415	per square foot	$ 0.6282	$ 0.0188	$ 0.0094	$ 0.6564
Industrial/Agricultural (100-199)							
110	General Light Industrial	0.002308	per square foot	$ 1.2786	$ 0.0383	$ 0.0191	$ 1.3360
120	General Heavy Industrial	0.001829	per square foot	$ 1.0134	$ 0.0304	$ 0.0152	$ 1.0590
140	Manufacturing	0.001793	per square foot	$ 0.9935	$ 0.0298	$ 0.0149	$ 1.0382
150	Warehousing	0.000915	per square foot	$ 0.5070	$ 0.0152	$ 0.0076	$ 0.5298
151	Mini-Warehouse	0.000077	per square foot	$ 0.0427	$ 0.0012	$ 0.0006	$ 0.0445
152	High-Cube Warehouse	0.000076	per square foot	$ 0.0420	$ 0.0012	$ 0.0006	$ 0.0438
Lodging (300-399)							
310	Hotel or Conference Motel	0.569735	per room	$ 315.6229	$ 9.4686	$ 4.7343	$ 329.8258
311	All Suites Hotel	0.500000	per room	$ 276.9910	$ 8.3097	$ 4.1548	$ 289.4555
320	Motel	0.439500	per room	$ 243.4753	$ 7.3042	$ 3.6521	$ 254.4316
Recreational (400-499)							
430	Golf Course	0.245614	per acre	$ 136.0657	$ 4.0819	$ 2.0409	$ 142.1885
437	Bowling Alley	0.001000	per square foot	$ 0.5540	$ 0.0166	$ 0.0083	$ 0.5789
443	Movie Theater	0.001470	per square foot	$ 0.8141	$ 0.0244	$ 0.0122	$ 0.8507
460	Arena	3.333000	per acre	$ 1,846.4217	$ 55.3926	$ 27.6963	$ 1,929.5106
480	Amusement Park	9.094838	per acre	$ 5,038.3756	$ 151.1512	$ 75.5756	$ 5,265.1024
490	Tennis Courts	0.243888	per acre	$ 135.1094	$ 4.0532	$ 2.0266	$ 141.1892
491	Racquet/Tennis Club	0.000307	per square foot	$ 0.1700	$ 0.0051	$ 0.0025	$ 0.1776
492	Health/Fitness Center	0.000705	per square foot	$ 0.3906	$ 0.0117	$ 0.0058	$ 0.4081
495	Recreational Community Center	0.001241	per square foot	$ 0.6875	$ 0.0206	$ 0.0103	$ 0.7184

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
Institutional (500-599)							
520	Private Elementary School	0.000982	per square foot	$ 0.5441	$ 0.0163	$ 0.0081	$ 0.5685
530	Private High School	0.000653	per square foot	$ 0.3617	$ 0.0108	$ 0.0054	$ 0.3779
560	Church/Place of Worship	0.000347	per square foot	$ 0.1923	$ 0.0057	$ 0.0028	$ 0.2008
565	Day Care Center	0.002818	per square foot	$ 1.5609	$ 0.0468	$ 0.0234	$ 1.6311
566	Cemetery	0.081425	per acre	$ 45.1082	$ 1.3532	$ 0.6766	$ 47.1380
Medical (600-699)							
610	Hospital	0.002938	per square foot	$ 1.6275	$ 0.0488	$ 0.0244	$ 1.7007
620	Nursing Home	0.002331	per square foot	$ 1.2915	$ 0.0387	$ 0.0193	$ 1.3495
630	Clinic	0.003926	per square foot	$ 2.1751	$ 0.0652	$ 0.0326	$ 2.2729
Office (700-799)							
710	General Office Building	0.003322	per square foot	$ 1.8405	$ 0.0552	$ 0.0276	$ 1.9233
714	Corporate Headquarters Building	0.003425	per square foot	$ 1.8973	$ 0.0569	$ 0.0284	$ 1.9826
715	Single-Tenant Office Building	0.003149	per square foot	$ 1.7443	$ 0.0523	$ 0.0261	$ 1.8227
720	Medical-Dental Office Building	0.004055	per square foot	$ 2.2464	$ 0.0673	$ 0.0336	$ 2.3473
760	Research and Development Center	0.002928	per square foot	$ 1.6219	$ 0.0486	$ 0.0243	$ 1.6948
770	Business Park	0.003079	per square foot	$ 1.7058	$ 0.0511	$ 0.0255	$ 1.7824
Retail (800-899)							
812	Building Materials and Lumber Store	0.001406	per square foot	$ 0.7789	$ 0.0233	$ 0.0116	$ 0.8138
813	Free-Standing Discount Superstore	0.000960	per square foot	$ 0.5318	$ 0.0159	$ 0.0079	$ 0.5556
814	Variety Store	0.000960	per square foot	$ 0.5318	$ 0.0159	$ 0.0079	$ 0.5556
815	Free-Standing Discount Store	0.001985	per square foot	$ 1.0995	$ 0.0329	$ 0.0164	$ 1.1488
816	Hardware/Paint Store	0.000964	per square foot	$ 0.5340	$ 0.0160	$ 0.0080	$ 0.5580
817	Nursery (Garden Center)	0.003120	per square foot	$ 1.7282	$ 0.0518	$ 0.0259	$ 1.8059
818	Nursery (Wholesale)	0.001667	per square foot	$ 0.9233	$ 0.0276	$ 0.0138	$ 0.9647
820	Shopping Center	0.001670	per square foot	$ 0.9251	$ 0.0277	$ 0.0138	$ 0.9666
823	Factory Outlet Center	0.001670	per square foot	$ 0.9251	$ 0.0277	$ 0.0138	$ 0.9666
826	Specialty Retail Center	0.001982	per square foot	$ 1.0981	$ 0.0329	$ 0.0164	$ 1.1474
841	Automobile Sales	0.001528	per square foot	$ 0.8464	$ 0.0253	$ 0.0126	$ 0.8843

ITE Code	Land Use	Employees	Unit of Measure	Net Fee per Unit	Administration (3%)	CIE Prep (1.5%)	Total Impact Fee
843	Auto Parts Store	0.001982	per square foot	$ 1.0981	$ 0.0329	$ 0.0164	$ 1.1474
848	Tire Store	0.001528	per square foot	$ 0.8464	$ 0.0253	$ 0.0126	$ 0.8843
849	Tire Superstore	0.000960	per square foot	$ 0.5318	$ 0.0159	$ 0.0079	$ 0.5556
850	Supermarket	0.001280	per square foot	$ 0.7091	$ 0.0212	$ 0.0106	$ 0.7409
851	Convenience Market (Open 24 Hours)	0.001280	per square foot	$ 0.7091	$ 0.0212	$ 0.0106	$ 0.7409
853	Convenience Market with Gasoline Pumps	0.001164	per square foot	$ 0.6449	$ 0.0193	$ 0.0096	$ 0.6738
854	Discount Supermarket	0.001800	per square foot	$ 0.9972	$ 0.0299	$ 0.0149	$ 1.0420
860	Wholesale Market	0.001800	per square foot	$ 0.9972	$ 0.0299	$ 0.0149	$ 1.0420
861	Discount Club	0.002251	per square foot	$ 1.2471	$ 0.0374	$ 0.0187	$ 1.3032
862	Home Improvement Superstore	0.000820	per square foot	$ 0.4541	$ 0.0136	$ 0.0068	$ 0.4745
863	Electronics Superstore	0.001298	per square foot	$ 0.7189	$ 0.0215	$ 0.0107	$ 0.7511
870	Apparel Store	0.000960	per square foot	$ 0.5318	$ 0.0159	$ 0.0079	$ 0.5556
875	Department Store	0.000960	per square foot	$ 0.5318	$ 0.0159	$ 0.0079	$ 0.5556
880	Pharmacy/Drugstore	0.001670	per square foot	$ 0.9251	$ 0.0277	$ 0.0138	$ 0.9666
890	Furniture Store	0.001980	per square foot	$ 1.0969	$ 0.0329	$ 0.0164	$ 1.1462
Services (900-999)							
912	Drive-in Bank	0.004788	per square foot	$ 2.6526	$ 0.0795	$ 0.0397	$ 2.7718
931	Quality Restaurant	0.007460	per square foot	$ 4.1327	$ 0.1239	$ 0.0619	$ 4.3185
932	High-Turnover (Sit-Down) Restauant	0.007460	per square foot	$ 4.1327	$ 0.1239	$ 0.0619	$ 4.3185
934	Fast-Food Restaurant	0.010900	per square foot	$ 6.0384	$ 0.1811	$ 0.0905	$ 6.3100
941	Quick Lubrication Vehicle Shop	2.100000	per service bay	$ 1,163.3620	$ 34.9008	$ 17.4504	$ 1,215.7132
944	Gasoline/Service Station	0.160000	per pump	$ 88.6371	$ 2.6591	$ 1.3295	$ 92.6257
945	Gasoline Station w/Convenience Market	0.216000	per pump	$ 119.6601	$ 3.5898	$ 1.7949	$ 125.0448
947	Self-Service Car Wash	0.200000	per stall	$ 110.7964	$ 3.3238	$ 1.6619	$ 115.7821

Notes: ITE Code means the land use code assigned in the *Trip Generation* manual published by the Institute of Transportation Engineers, 9th Ed.
n/a - not applicable. Fee taken from the *Calculation of Housing Unit Fee* table.
"Square foot" means square foot of gross building floor area.

Glossary

The following terms are used in this report. Generally, 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: capital improvements in one of the following categories:

(A) Water supply production, treatment, and distribution facilities;

(B) Wastewater 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) Stormwater 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

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 a municipality or county 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, county, 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 three 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 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 improvements: capital improvements that are public facilities and are designed to provide service to the community at large, in contrast to "project improvements."

Nonresidential Land Use Definitions

The following definitions below are the official definitions for interpretation in the County's impact fee program (but may differ from Zoning Ordinance definitions of allowable land uses). The definitions are derived from the Institute of Transportation Engineers' *Trip Generation Manual (9TH edition)*. In some cases, interpretation of the definition is required. This is the role of the Impact Fee Administrator, though the applicant can appeal the interpretation.

Land Use Category	ITE Code*	Description
All Suites Hotel	311	Places of lodging 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, and limited kitchen facilities
Amusement Park	480	An outdoor facility that contains rides, entertainment, refreshment stands, and picnic areas.
Apparel Store	876	Individual store specializing in the sale of clothing.
Arena	460	Large indoor structure in which spectator events are held. These events vary from professional ice hockey and basketball to non-sporting events such as concerts, shows, or religious services.
Automobile Sales	841	Dealerships offering new or used cars for sale. Automobile services, parts sales and substantial used car sales may also be available. Some dealerships also include leasing options, truck sales and servicing.
Auto Parts Store	843	Facilities specializing in the sale of automobile parts for do-it-yourself maintenance and repair. Items sold at these facilities include items such as spark plugs, oil, batteries and a wide range of automobile parts. These facilities are not equipped for on-site vehicle repair.
Bowling Alley	437	A recreational facility that primarily provides lanes for bowling. A small lounge, restaurant and/or snack bar, video games, and pool tables may also be available as accessory uses.
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. (In contrast, see Hardware/Paint Store below.)
Business Park Building	770	A flex-type or incubator one- or two-story building served by a common roadway system. The tenant space is flexible and lends itself to a variety of uses; the rear side of the building is usually 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.
Cemetery	566	A place for burying the deceased, possibly including buildings used for funeral services, a mausoleum, and a crematorium.

Land Use Category	ITE Code*	Description
Church/Place of Worship	560	Any building providing public religious worship facilities. A church, synagogue or any other religious facility generally houses an assembly hall or sanctuary, meeting rooms, classrooms, and occasionally, dining, catering or party facilities.
Clinic	630	Any facility that provides limited diagnostic and outpatient care but is unable to provide prolonged in-house medical and surgical care. Clinics often have lab facilities or a pharmacy.
Convenience Market (Open 24 Hours)	851	Open 24 hours per day. These stores sell convenience foods, newspapers, magazines, and often beer and wine; and they do not have gasoline pumps.
Convenience Market with Gasoline Pumps	853	These stores sell gasoline, convenience foods, newspapers, magazines, and often, beer and wine. This land use includes convenience markets with gasoline pumps where the primary business is the selling of convenience items, not the fueling of motor vehicles. (See Gas Station w/Convenience Market, below.)
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.
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.
Department Store	875	A free-standing facility that specializes in the sale of a wide range of products including apparel, footwear, home products, bedding and linens, luggage, jewelry and accessories.
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, tires and appliances; many items are sold in large quantities or bulk.
Discount Supermarket	854	A free-standing retail store selling a complete assortment of food (often in bulk), food preparation and wrapping materials, and household cleaning and servicing items at discounted prices.
Drive-in Bank	912	Contains banking facilities for both the motorist while in a vehicle, and someone who walks into the building.

Land Use Category	ITE Code*	Description
Electronics Superstore	863	A free-standing warehouse type facility, they specialize in the sale of home and vehicle electronic merchandise and generally offer a variety of customer services and centralized cashiering. They typically maintain long store hours seven days a week. Examples of items sold in these stores include televisions, audio and video players and recorders, cameras, software, telephones, computers, and general electronic accessories. Major home appliances may also be sold at these facilities. Electronics superstores are sometimes found as separate parcels within a retail complex with their own dedicated parking.
Factory Outlet Center	823	A shopping center that primarily houses factory outlet stores, attracting customers from a wide geographic area, very often even from a larger area than a regional shopping center.
Fast Food Restaurant	934	This category includes restaurants with drive-through windows. This type of restaurant is characterized by a large drive-through clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours per day), and high turnover rates for eat-in customers. These limited-service eating establishments do not provide table service. Non-drive-through patrons generally order at a cash register, pay before they eat and pick up their meals at a counter. Examples include Burger King, Chick-fil-A, Captain D's, Kentucky Fried Chicken, McDonalds, Papa John's Pizza, Sonic Drive-in, Subway, Taco Bell, Wendy's, and all cafeterias.
Free-Standing Discount Store	815	Similar to the Free-Standing Discount Superstore land use, but does not contain a full-service grocery department. Usually offers fewer services than a Department Store, has centralized cashiering and a wide range of products. Often the only store on a site, but again, one can find them in mutual operation with their own or other supermarkets, garden centers and service stations, or as part of community-sized shopping centers. Usually maintains long store hours, even on Sunday.
Free-Standing Discount Superstore	813	Similar to the Free-Standing Discount Store land use, with the exception that these also contain a full-service grocery department under the same roof that shares entrances and exits with the discount store area. These stores usually offer a variety of customer services, centralized cashiering, and a wide range of products. They typically maintain long store hours seven 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.
Furniture Store	890	A retail facility that specializes in the sale of furniture and often carpeting. The stores are generally large and include storage areas.

Land Use Category	ITE Code*	Description
Gasoline/Service Station	944	A gasoline/service station where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles.
Gas Station w/Convenience Market	945	This land use includes gasoline/service stations with convenience markets where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles. Some commonly sold convenience items are newspapers, coffee or other beverages and snack items that are usually consumed in the car.
General Heavy Industrial	120	Unlike manufacturing facilities, which convert raw materials into products, heavy industrial uses generally involve the assembly of parts into finished products.
General Light Industrial	110	Free-standing facility devoted to a single industrial use, but having an emphasis other than manufacturing. Light industries typical of those included in this category are printing plants, material testing laboratories, and assemblers of data processing equipment.
General Office Building	710	Houses multiple tenants and is the location where affairs of a business, commercial or industrial organization, professional person or firm are conducted. The building is designed to contain a mixture of tenants including professional services, insurance companies, investment brokers, company headquarters, and services for the tenants such as a bank or savings and loan, a restaurant or cafeteria, and service retail facilities.
Golf Course	430	Includes 9-, 18-, 27- or 36-hole golf courses and may include a private country club. Some sites have driving ranges and clubhouses with a pro shop and/or restaurant, lounge or banquet facilities.
Hardware/Paint Store	816	Generally, a free-standing building where the primary business is the sale of hand tools and power tools for repairs, maintenance and construction work; and/or house paint, paint brushes and other painting accessories.
Health/Fitness Center	492	Health/fitness centers are privately-owned facilities that primarily focus on individual fitness or training. Typically, they provide exercise classes; weightlifting, fitness and gymnastics equipment; spas; locker rooms; and small restaurants or snack bars. This land use may also include ancillary facilities, such as swimming pools, whirlpools, saunas, tennis, racquetball and handball courts and limited retail.
High-Cube Warehouse	152	Highly mechanized facilities used for the storage of manufactured goods prior to their distribution to retail outlets, distribution centers or other warehouses. These facilities generally consist of large steel or masonry shell buildings, with a typical ceiling height of 24 feet or more. They are also characterized by a small employment count due to the high level of mechanization, may include an office component, and some limited assembly and repackaging may occur.

Land Use Category	ITE Code*	Description
High-Turnover (Sit-Down) Restaurant	932	Sit-down, full service eating places ("sometimes called Family Restaurants") where customers generally stay less than one hour. Restaurants in this group are usually moderately priced and frequently belong to chains. These restaurants generally serve lunch and dinner, sometimes breakfast, and are sometimes open 24 hours a day. Reservations are typically not taken. Patrons wait to be seated, are served by a waiter or waitress, order from a menu at the table and may pay at the table. The restaurant may include a bar as an accessory use. Examples include: Applebee's, Huddle House, IHOP, Longhorn Steakhouse, Olive Garden, Ruby Tuesday, and Waffle House. For contrast, see also Fast Food Restaurant (ITE 934) and Quality Restaurant (ITE 931).
Home Improvement Superstore	862	A free-standing warehouse type facility, they specialize in the sale of home improvement merchandise and generally offer a variety of customer services and centralized cashiering. They typically maintain long store hours seven days a week. Examples of items sold in these stores include lumber, tools, paint, lighting, wallpaper and paneling, kitchen and bathroom fixtures, lawn equipment, and garden plants and accessories. Home improvement superstores are sometimes found as separate parcels within a retail complex with their own dedicated parking.
Hospital	610	Any institution where medical or surgical care and overnight accommodations is given to non-ambulatory and ambulatory patients.
Hotel or Conference Hotel	310	*A* place of lodging providing sleeping accommodations, and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or small retail and service shops.
Intermodal Truck Terminal	030	Faculties where goods are transferred between trucks, trucks and railroads, or trucks and ports. (See also High-Cube Warehouse.)
Manufacturing	140	Places 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, manufacturing facilities generally also have office, warehouse, research and assorted functions.
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. Usually occupied by a single private physician or dentist, a group of doctors, or several independent physicians or dentists.
Mini-Warehouse	151	A building in which a storage unit or vault is rented for the storage of goods (sometimes called a "self-storage facility"). Each unit is physically separated from other units and access is usually provided through an overhead door.

Land Use Category	ITE Code*	Description
Motel	320	*A* place of lodging offering sleeping accommodations and possibly a restaurant or breakfast area. Little or no meeting space and few supporting facilities are provided. Access to rooms may be from an interior corridor or from outdoor landings.
Movie Theater	443	Consists of audience seating, one or more screens and auditoriums, and a lobby and refreshment stand.
Nursery (Garden Center)	817	A free-standing building with an outside storage area for planting or landscape stock. These nurseries primarily serve the general public. Some have large greenhouses and offer landscaping services, and may sell lawn care and maintenance supplies, trimmers or mowers. Most have office, storage, and shipping facilities.
Nursery (Wholesale)	818	A free-standing building with an outside storage area for planting or landscape stock. These nurseries primarily serve contractors and suppliers. Some have large greenhouses and offer landscaping services. Most have office, storage, and shipping facilities.
Nursing Home	620	Any facility whose primary function is to provide 24-hour per day care for persons 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.
Pharmacy/Drugstore	880	A retail facility that primarily sells prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationary, personal care products, limited food products, and general merchandise.
Private Elementary School	520	A privately owned, state accredited school that serves students attending kindergarten through fifth or sixth grade.
Private High School	530	A privately owned, state accredited school that serves students in the ninth through twelfth grade; middle or junior high schools can also be included in this category.
Quality Restaurant	931	A high quality, full service eating establishment with turnover rates generally of at least one hour or longer. Generally, a quality restaurant does not serve breakfast and may or may not serve lunch. Reservations are available and sometimes required. Patrons wait to be seated, are served by a waiter or waitress, and order from a menu at the table. Tables are generally pre-set with table cloths, silverware and napkins. The restaurant may include a lounge or bar as an accessory use. For comparison, see 'High-Turnover (Sit-Down) Restaurant' (ITE 932).
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.

Land Use Category	ITE Code*	Description
Racquet/Tennis Club	491	An indoor or outdoor facility that primarily caters to racquet sports (tennis, racquetball, squash), and may include ancillary facilities such as swimming pools, whirlpools, saunas, weight rooms, snack bars and small retail stores.
Recreational Community Center	495	Facilities similar to and including YMCAs, often including classes and clubs for adults and children; a day care or nursery school; meeting rooms; swimming pools and whirlpools; saunas; tennis, racquetball, handball, basketball and volleyball courts; exercise classes; weightlifting and gymnastics equipment; locker rooms; and a restaurant or snack bar.
Research & Development Center	760	A facility 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.
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.
Shopping Center	820	An integrated group of commercial establishments that is planned, developed, owned and managed as a unit. It is related to its market area in terms of size, location, and type of store. *A single impact fee is charged when the shopping center is first issued a building permit. Individual stores, shops, movie theaters, eating establishments and other uses that locate within a shopping center building from time to time are not charged an impact fee because the initial shopping center fee already assumes a wide variety of uses that are commonly found in shopping centers.*
Single-Tenant Office Building	715	A free-standing building exclusively occupied by one 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.
Specialty Retail Center	826	A small strip shopping center that contains a variety of retail shops and specializes in quality apparel, hard goods, and services such as real estate offices, dance studios, florists, and small restaurants. *A single impact fee is charged when the specialty retail center is first issued a building permit. Individual stores, shops and other uses that locate within a specialty retail center building from time to time are not charged an impact fee because the initial specialty retail center fee already assumes a wide variety of uses that are commonly found in specialty retail centers.*

Land Use Category	ITE Code*	Description
Supermarket	850	Free-standing retail stores selling a complete assortment of food, food preparation and wrapping materials, and household cleaning items, and may also include automobile supplies, bakeries, snack areas, books and magazines, floral arrangements, greeting cards, cooking and other household items, and video sales or rentals. Limited-service banks, photo centers and pharmacies are often located within supermarkets.
Tennis Courts	490	Indoor or outdoor facilities specifically designed for playing tennis. Other on-site facilities may include limited spectator seating and a parking lot. (See also Racquet/Tennis Club above.)
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.
Tire Superstore	849	A warehouse-like facility with the primary function of selling and installing tires for automobiles and small trucks. Other services provided may include automotive maintenance functions such as wheel alignment or shock and brake service. A tire display, customer waiting lounge and restroom facilities, staff office space, and significant storage area are also provided. General mechanical repairs and body work are usually not conducted at these facilities.
Variety Store	814	A retail store that sells a broad range of inexpensive items (once known as “five and dime stores”). Those that sell a single price are typically referred to as "dollar stores." Items sold at these stores typically include kitchen supplies, cleaning products, home office supplies, food products, household goods, decorations and toys.
Warehousing	150	Facility that is primarily devoted to the storage of materials, often in transit for distribution to retail outlets, distribution centers or other manufacturers. They may also include office and maintenance areas.
Wholesale Market	860	Facilities that generally include large storage and distribution areas for receiving goods and shipping those goods to places such as grocery stores and restaurants. Generally, these markets are characterized by little drive-in business, and truck deliveries and pick-ups at all hours of the day.

*Institute of Transportation Engineers, *Trip Generation Manual*, land use code.