Capital Improvements Plan and Development Impact Fee Study

Prepared for:
City of Tega Cay, South Carolina

October 27, 2022

TischlerBise
FISCAL | ECONOMIC | PLANNING

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EXECUTIVE SUMMARY

The City of Tega Cay, South Carolina retained TischlerBise to prepare an update to its impact fees. Impact fees are collected from new construction at the time a building permit is issued. The revenue collected from impact fees is used to construct system improvements needed to accommodate the demands from new development. An impact fee represents new growth's proportionate share of capital facility needs. Impact fees do have limitations, and should not be regarded as the total solution for infrastructure funding needs. Rather, they are one component of a comprehensive portfolio to ensure provision of adequate public facilities needed to serve new development. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies.

The City of Tega Cay has seen significant residential growth over the past several years and with it increased need for infrastructure improvements. This growth is expected to continue in the future. The City currently has an impact fee ordinance in place and this study establishes updated maximum supportable amounts. Any new impact fees, or changes to existing impact fees, require a study that complies with the current South Carolina Development Impact Fee Act.

This study documents the following fee components for the City of Tega Cay:

Updated Impact Fee Categories

- Parks & Recreation
- Police
- Fire
- Water
- Wastewater

New Impact Fee Category

- Public Works

SOUTH CAROLINA DEVELOPMENT IMPACT FEE ACT

The State of South Carolina grants the power for cities and counties to collect impact fees on new development pursuant to the rules and regulations set forth in the South Carolina Development Impact Fee Act (Code of Laws of South Carolina, Section 6-1-910 et seq.). The process to create a local impact fee system begins with a resolution by the City Council directing the Planning Commission to conduct an impact fee study and recommend a development impact fee ordinance for legislative action.

Generally, a governmental entity must have an adopted comprehensive plan to enact impact fees; however, certain provisions in State law allow counties, cities, and towns that have not adopted a comprehensive plan to impose development impact fees. Those jurisdictions must prepare a capital improvements plan as well as prepare an impact fee study that substantially complies with Section 6-1-960(B) of the Code of Laws of South Carolina.

All counties, cities, and towns are also required to prepare a report that estimates the effect of impact fees on the availability of affordable housing before imposing impact fees on residential dwelling units.

Based on the findings of the study, certain developments may be exempt from impact fees when all or part of the project is determined to create affordable housing, and the exempt development's proportionate share of system improvements is funded through a revenue source other than impact fees. A housing affordability analysis in support of the development impact fee study is published as a separate report.

Eligible costs may include design, acquisition, engineering, and financing attributable to those improvements recommended in the local capital improvements plan that qualify for impact fee funding. Revenues collected by the county, city, or town may not be used for administrative or operating costs associated with imposing the impact fee. All revenues from impact fees must be maintained in an interest-bearing account prior to expenditure on recommended improvements. Monies must be returned to the owner of record of the property for which the impact fee was collected if they are not spent within three years of the date they are scheduled to be encumbered in the local capital improvements plan. All refunds to private land owners must include the pro rata portion of interest earned while on deposit in the impact fee account.

The City of Tega Cay is also responsible for preparing and publishing an annual report describing the amount of impact fees collected, appropriated, and spent during the preceding year. Subsequent to adoption of a development impact fee ordinance, the Planning Commission will again be required to review and update the impact fee study report, capital improvements plan, housing affordability analysis, and development impact fee ordinance. These updates must occur at least once every five years. Pursuant to State Law, the City of Tega Cay will not be empowered to recommend additional projects eligible for impact fee funding or charge higher maximum allowable impact fees until the development impact fee study and capital improvement plan have been updated.

CONCEPTUAL IMPACT FEE CALCULATION

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of demand units for each unit of development. For example, an appropriate indicator of the demand for park facilities is population growth, and the increase in population can be estimated from the average number of residents per housing unit. The second step in the impact fee formula is to determine infrastructure units per demand unit, typically called level-of-service (LOS) standards. In keeping with the parks example, a common LOS standard is park acreage per resident. The third step in the impact fee formula is the cost of various infrastructure units. To complete the parks example, this part of the formula would establish the cost per acreage for acquiring new parkland.

GENERAL METHODOLOGIES

There are three general methods for calculating development impact fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and

service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

Reduced to its simplest terms, the process of calculating development impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss three basic methods for calculating development impact fees and how those methods can be applied.

Cost Recovery (Past Improvements)

The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.

Incremental Expansion (Concurrent Improvements)

The incremental expansion method documents current level-of-service (LOS) standards for each type of public facility, using both quantitative and qualitative measures. This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increment to keep pace with development.

Plan-Based Fee (Future Improvements)

The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

Credits

Regardless of the methodology, a consideration of “credits” is integral to the development of a legally defensible impact fee methodology. There are two types of “credits” with specific characteristics, both of which should be addressed in development impact fee studies and ordinances.

- First, a revenue credit might be necessary if there is a double payment situation and other revenues are contributing to the capital costs of infrastructure to be funded by impact fees. This type of credit is integrated into the impact fee calculation, thus reducing the fee amount.

- Second, a site-specific credit or developer reimbursement might be necessary for dedication of land or construction of system improvements funded by impact fees. This type of credit is addressed in the administration and implementation of the impact fee program.

PROPOSED FEE METHODS AND COST COMPONENTS

Figure 1 summarizes the methods and cost allocation components used for each infrastructure category in Tega Cay's development impact fee study. Parks & Recreation costs are allocated to residential development, while Police, Fire, and Public Works costs are allocated to both residential and nonresidential development. For these three fee categories, population is used as the cost allocation factor for residential development, and nonresidential vehicle trips is used to allocate costs for nonresidential development. Water and Wastewater costs are allocated based on peak consumption in gallons.

After consideration of input during work sessions and public hearings, the City Council may change the proposed development impact fees by eliminating infrastructure types, cost components, and/or specific capital improvements. If changes are made during the adoption process, TischlerBise will update the fee study to be consistent with legislative decisions.

Figure 1: Proposed Fee Methods and Cost Components

Fee Category	Service Area	Cost Recovery (past)	Incremental Expansion (present)	Plan-Based (future)	Cost Allocation
Parks & Recreation	Citywide	Golf Course Facilities	Park Amenities, Trails	Impact Fee Study	Population
Police	Citywide	Police Station	Vehicles & Equipment	Impact Fee Study	Population, Nonres. Trips
Fire	Citywide	Fire Stations	Apparatus	Impact Fee Study	Population, Nonres. Trips
Water	Citywide	Booster Pumps	n/a	Storage, Impact Fee Study	Gallons
Wastewater	Citywide	n/a	n/a	Treatment Facility Improvements, Vehicles, Impact Fee Study	Gallons
Public Works Facilities	Citywide	n/a	n/a	Public Works Facilities, Impact Fee Study	Population, Nonres. Trips

PROPOSED IMPACT FEE SCHEDULE

As documented in this report, the City of Tega Cay has complied with the South Carolina Development Impact Fee Act and applicable legal precedents. Impact fees are proportionate and reasonably related to capital improvement demands of new development. Specific costs have been identified using local data and current dollars. This report documents the formulas and input variables used to calculate the development impact fees. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

For residential development, proposed fees are assessed per housing unit by type of unit. The proposed residential fee categories include single family and multi-family units. Single family units include detached, attached (i.e. "townhouse"), and mobile home units. Multi-family units include duplexes, condominiums and apartments with two or more units. For nonresidential development, fees are assessed per 1,000 square feet of floor area. The proposed fee schedule for nonresidential development is designed to provide a reasonable impact fee determination for broad property classes – industrial, commercial, and office & institutional. For water and wastewater, fees are assessed per meter size.

Figure 2 summarizes proposed development impact fees for new development in Tega Cay. The amounts shown are "maximum allowable" amounts based on the methodologies, levels of service, and costs for the capital improvements identified herein. The fees represent the highest amount feasible for each type of applicable development, which represent new growth's fair share of the system improvement costs detailed in this report. The City can adopt amounts that are lower than the maximum amounts shown; however, a reduction in fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in the City's level of service.

Figure 2: Maximum Allowable Impact Fees

Residential Impact Fees (per Housing Unit)							
Type	*Parks & Recreation*	*Police*	*Fire*	*Public Works*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
Single Family Unit	$5,019	$754	$1,820	$331	**$7,924**	**$6,676**	*$1,248*
Multi-family Unit	$2,956	$444	$1,072	$194	**$4,666**	**$3,839**	*$827*

Nonresidential Impact Fees (per 1,000 Sq Ft)							
Type	*Parks & Recreation*	*Police*	*Fire*	*Public Works*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
Industrial	$0	$226	$554	$62	**$842**	**$591**	*$251*
Commercial	$0	$1,163	$2,852	$322	**$4,337**	**$3,751**	*$586*
Office & Institutional	$0	$516	$1,265	$143	**$1,924**	**$1,466**	*$458*

Water & Sewer Impact Fees, All Development Types (per Meter)					
Meter Size (inches)	*Water*	*Wastewater*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
0.75	$1,002	$1,209	**$2,211**	**$1,871**	*$340*
1.00	$1,674	$1,973	**$3,647**	**$3,087**	*$560*
1.50	$3,339	$3,865	**$7,204**	**$6,099**	*$1,105*
2.00	$5,345	$6,144	**$11,489**	**$9,728**	*$1,761*
3.00	$10,701	$12,230	**$22,931**	**$19,417**	*$3,514*
4.00	$16,719	$19,068	**$35,787**	**$30,304**	*$5,483*
6.00	$33,429	$38,055	**$71,484**	**$60,531**	*$10,953*

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using one, two, and three digit places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

PROJECTED DEMAND

Section 6-1-960(6) of the South Carolina Development Impact Fee Act requires:

> *"the total number of service units necessitated by and attributable to new development within the service area, based on the land use assumptions and calculated in accordance with generally accepted engineering or planning criteria."*

Based on the Land Use Assumptions discussed in Exhibit A, both residential and nonresidential development is expected continue in Tega Cay over the next ten years. Figure 3 on the following page shows projected housing units, population, nonresidential floor area, and vehicle trip ends over the next ten years.

Residential projections are based on anticipated housing projects being built currently and anticipated to be permitted over the next several years, provided by City of Tega Cay staff and resulting growth rates. Over the next ten years, Tega Cay is projected to grow by almost 1,700 units and over 4,600 residents.

Employment growth is projected based on historical growth rates. Ten-year projected growth is expected to produce over 700 jobs with an increase of around 25,000 to 30,000 nonresidential square footage on average per year.

Figure 3: Residential and Nonresidential Projections

						Multi-year interval>>		
	*Base Year^*	*1*	*2*	*3*	*4*	*5*	*10*	
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2032**	**10-Year Net Increase**
Population	13,335	13,811	14,303	14,814	15,343	15,891	17,963	4,628
Single Family	4,420	4,579	4,744	4,915	5,092	5,275	5,968	1,548
Multifamily	336	348	361	374	387	401	454	118
Total Housing Units	4,756	4,927	5,105	5,288	5,479	5,676	6,422	1,666
Jobs								
Industrial	163	168	173	179	184	190	221	58
Retail	999	1,030	1,062	1,095	1,129	1,164	1,356	357
Office/Institutional	877	904	932	961	991	1,021	1,190	313
Total Jobs	2,039	2,102	2,167	2,235	2,304	2,375	2,767	728
Nonresidential Square Footage								
Industrial	86,127	88,797	91,550	94,388	97,314	100,331	116,877	30,749
Retail	470,581	485,169	500,209	515,716	531,703	548,185	638,588	168,007
Office/Institutional	269,168	277,513	286,116	294,985	304,130	313,558	365,267	96,099
Total Square Footage	825,877	851,479	877,875	905,089	933,146	962,074	1,120,732	294,855

** U.S. Census, Decennal Census 2020 (Population)*

^ City of Tega Cay, SC (Population)

Sources: U.S. Census; City of Tega Cay, SC; Institute of Transportation Engineers; TischlerBise

Projected water demand is based on peak daily water consumption rates per meter, provided by City of Tega Cay staff. The total amount of peak daily water consumption is derived using the number of meters per demand unit (housing units and jobs). As the number of housing units and jobs increase each year, so too does the peak daily amount of water demanded. Figure 4 shows the projected number of residential and nonresidential meters, as well as the total projected amount of water consumption over the next ten years.

Figure 4: Projected Water Customers and Peak Daily Usage

Year		Total Meters	Peak Flow (GPD)	Housing Units	Res. Meters	Peak Res GPD	Jobs	Comm. Meters	Peak Comm GPD
Base	2022	5,277	1,791,883	4,756	5,228	1,672,960	2,039	49	118,923
1	2023	5,467	1,856,897	4,927	5,416	1,733,120	2,102	51	123,777
2	2024	5,663	1,921,724	5,105	5,611	1,795,520	2,167	52	126,204
3	2025	5,867	1,991,218	5,288	5,813	1,860,160	2,235	54	131,058
4	2026	6,077	2,060,525	5,479	6,022	1,927,040	2,304	55	133,485
5	2027	6,296	2,134,819	5,676	6,239	1,996,480	2,375	57	138,339
6	2028	6,454	2,189,593	5,818	6,395	2,046,400	2,449	59	143,193
7	2029	6,616	2,245,647	5,963	6,555	2,097,600	2,525	61	148,047
8	2030	6,782	2,302,981	6,112	6,719	2,150,080	2,603	63	152,901
9	2031	6,951	2,359,168	6,265	6,887	2,203,840	2,684	64	155,328
10	2032	7,125	2,419,062	6,422	7,059	2,258,880	2,767	66	160,182
Net Increase		**1,848**	**627,179**	**1,666**	**1,831**	**585,920**	**728**	**17**	**41,259**

PARKS & RECREATION CIP AND IMPACT FEE CALCULATION

METHODOLOGY

The components of Tega Cay's Parks & Recreation Capital Improvement Plan (CIP) include park amenities, trails, and golf course facilities. Because the City does not anticipate any land acquisition for parks within the next ten years, parkland acreage is not included. The impact fees for park amenities and trails were calculated using the incremental expansion method, while the fees for the golf course facilities were calculated using the cost recovery method.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

Because the City's parks are chiefly intended to serve residents, as opposed to nonresidential development, capital costs are allocated to residential development only. The fees are calculated on a per capita basis, with the net capital cost per person multiplied by the persons per housing unit factors discussed in Appendix A.

SERVICE UNITS FOR PARKS

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional parks & recreation will come from new residential development. The "service unit" used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure 5, there are 2.86 persons per single family housing unit and 1.69 persons per multi-family housing unit, based on the U.S. Census Bureau's 2020 ACS 5-year estimates.

Figure 5: Parks & Recreation Service Units

Type	Persons	Housing Units	Persons per Housing Unit
Single Unit*	10,524	3,678	2.86
2+ Units	310	184	1.69
TOTAL	**10,834**	**3,862**	**2.81**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

PARK AMENITIES

Existing Standards and Cost Factors

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires the following to be included in the CIP:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional park amenities will come from new residential development. Amenities include, but are not limited to, pavilions, tennis and basketball courts, playgrounds, ball parks, boat docks, community centers, as well as bathrooms and parking spaces which support these amenities. As previously stated, the incremental expansion methodology is used to calculate the park amenity portion of the impact fee. As shown in Figure 6, the fee study assesses residential level-of-service standards based on the City's estimated population in 2022. When the current number of park amenities (1,066) is compared to the 2022 population (13,335), the existing level of service standard is 0.08 amenities per person.[1] To determine the cost per demand unit, the existing level of service standard (0.08 amenities per person) is multiplied by the average cost per amenity ($17,445), for a cost per demand unit of $1,395.60 per person.

[1] Park amenities include Catawba Park.

Figure 6: Existing Standards for Park Amenities

Amenity	*# of Units*	*Cost per Unit*	*Replacement Cost*
Pavilions	2	$30,000	$60,000
Bathrooms	13	$50,000	$650,000
Water Fountains	3	$4,000	$12,000
Playgrounds	10	$150,000	$1,500,000
Basketball Courts	3	$66,000	$198,000
Tennis Courts	6	$200,000	$1,200,000
Baseball/Softball Fields	4	$682,000	$2,728,000
Baseball/Softball Field with Turf	5	$776,000	$3,880,000
Soccer/Multipurpose Fields	2	$682,000	$1,364,000
Soccer/Multipurpose Fields with T	3	$1,300,000	$3,900,000
Boat Docks	2	$275,000	$550,000
Disc Golf Course	1	$11,000	$11,000
Community Center	1	$825,000	$825,000
Croquet Course	1	$247,500	$247,500
Parking (total # of spaces)	1,002	$570	$571,140
Pickleball Courts	5	$50,000	$250,000
Fishing Piers	2	$200,000	$400,000
Boat Launch	1	$250,000	$250,000
TOTAL	**1,066**	**$17,445**	**$18,596,640**

Level-of-Service (LOS) Standards

Population in 2022	13,335
LOS: Park Amenities per Person	**0.08**

Cost Analysis

Cost per Unit	$17,445
LOS: Park Amenities per Person	0.08
Cost per Person	**$1,395.60**

TRAILS

Existing Standards and Cost Factors

Demand for additional trails will come from new residential development. Trails include both paved and natural trails. As previously stated, the incremental expansion methodology is used to calculate the trails portion of the impact fee. As shown in Figure 7, the fee study assesses level-of-service standards based on the City's estimated population in 2022. Tega Cay currently has 8.3 miles, or 43,824 linear feet, of trails, of which over 95% are paved.[2] The cost to construct a new paved trail is estimated at $200 per linear foot, and that for a new natural trail is $10 per linear foot. When the current total length of trails (43,824 linear feet) is compared to the 2022 population, the existing level of service standard is 3.29 linear feet per person. To determine the cost per demand unit, the existing level of service standard (3.29 linear feet per person) is multiplied by the weighted average cost per square foot of trail ($193), for a cost per demand unit of $634.97 per person.

Figure 7: Existing Standards for Trails

Surface Type	Miles	Linear Feet	Cost per Linear Foot
Paved	8.0	42,240	$200
Natural	0.3	1,584	$10
TOTAL	**8.3**	**43,824**	**$193**

Level-of-Service (LOS) Standards

Population in 2022	13,335
LOS: Linear Feet per Person	**3.29**

Cost Analysis

Cost per Unit	$193
LOS: Linear Feet per Person	3.29
Cost per Person	**$634.97**

[2] Includes mileage in Catawba Park.

GOLF COURSE FACILITIES

Standards and Cost Factors

The third and final component of the Parks & Recreation fee is golf course facilities. The City owns the Tega Cay Golf Club, a 180-acre public golf facility which does not require membership to use. The cost recovery method is used to calculate the golf course portion of the impact fees. As shown in Firgure 8, the City currently has a total of $4,626,925 in oustanding debt service payments, paid in regular installments through 2030. This means the amount of outstanding debt service per acre is $25,705. The fee study assesses level of service standards based on the City's total population in 2030, because the fees must be allocated to new and existing residential development proportionately.

City data suggests that approximately 45% of those who use the golf course are Tega Cay residents. This means the remaining 55% of users are travelling from outside the City to use the golf the course, and thus their usage share must be removed from the impact fee calculations. When the acreage of the golf course is discounted by 55% and then compared to the 2030 population, the level of service standard is 0.0047 acres per person. To determine the cost per demand unit, the level of service standard (0.0047 acres per person) is multiplied by the outstanding debt service per acre ($25,705), for a cost per demand unit of $121.74 per person.

Figure 8: Level of Service Standards for Golf Course Facilities

Golf Course	Acreage	Total Debt Service	Debt per Acre
Tega Cay Golf Club	180	$4,626,925	$25,705

Cost Recovery Standards	
Population in 2030	17,103
City Resident Usage Share	45%
Acres per Person	**0.0047**

Cost Allocation Factors	
Total Debt Service	$4,626,925
Cost per Acre	$25,705
Cost per Person	**$121.74**

Debt Service Schedule	
2022	$ 559,638
2023	$ 506,138
2024	$ 508,838
2025	$ 510,338
2026	$ 510,550
2027	$ 509,425
2028	$ 508,050
2029	$ 504,100
2030	$ 509,850
Total	**$ 4,626,925**

When the cost recovery method is used, it's important to note the share of the fee allocated towards existing versus new development. As previously stated, impact fees must be allocated to new and existing development proportionately. As shown in Figure 9, when the cost per person is multiplied by the population in 2022, the existing residential share is $1,562,168, which accounts for 34% of the total debt service on the golf course facility. Likewise, when the cost per person is multiplied by the net population increase through 2030, the residential growth share is $519,950, or 11% of the total debt service. The remaining 55% of the debt service is allocated towards non-City residents who use the golf facilities, which are excluded from the impact fee.

Figure 9: Existing and Growth Share of Golf Course Facilities

Facility	Total Debt Service	Population in 2030
Tega Cay Golf Club	$4,626,925	17,103
Cost per Person		**$121.74**

Existing Residential Share		
Population in 2022	12,832	
Existing Residents Share	**$1,562,168**	**34%**

Residential Growth Share		
Population in 2030	17,103	
Net Population Increase	4,271	
Residential Growth Share	**$519,950**	**11%**

CREDIT ANALYSIS FOR PARK SYSTEM IMPROVEMENTS

Tega Cay debt financed Catawba Park improvements. To avoid potential double payment for park capacity improvements, a credit is necessary because new residential development that will pay the impact fee will also contribute to future principal payments through property taxes on this remaining debt.

As shown in Figure 10, outstanding principal payments for the Catawba Park capacity improvements total $9.2 million. To derive the credit amount, projected principal amounts per year are divided by projected annual population.

To account for the time value of money, annual payments per capita are discounted using a net present value formula based on an average interest rate of the debt of 2.5 percent. The total net present value of future principal payments for capacity improvements is $403.17 per person. This amount is subtracted from the gross capital cost per person to derive a net capital cost per person for parks.

Figure 10. Park Principal Payment Credit Evaluation

Year	*Principal (Catawba Park)*	*Proj. Population*	*Credit per Capita*
2022	$393,000	13,335	$29.47
2023	$366,000	13,811	$26.50
2024	$376,000	14,303	$26.29
2025	$385,000	14,814	$25.99
2026	$395,000	15,343	$25.75
2027	$405,000	15,891	$25.49
2028	$415,000	16,285	$25.48
2029	$426,000	16,689	$25.53
2030	$437,000	17,103	$25.55
2031	$448,000	17,527	$25.56
2032	$459,000	17,963	$25.55
2033	$471,000	18,409	$25.59
2034	$483,000	18,866	$25.60
2035	$495,000	19,334	$25.60
2036	$508,000	19,815	$25.64
2037	$521,000	20,307	$25.66
2038	$534,000	20,811	$25.66
2039	$547,000	21,329	$25.65
2040	$561,000	21,859	$25.66
2041	$575,000	22,402	$25.67
Total	**$9,200,000**		**$517.88**

Discount Rate	**2.5%**
Net Present Value	**$403.17**

Source: Tega Cay, SC; TischlerBise analysis

PROJECTED DEMAND FOR GROWTH-RELATED PARKS & RECREATION IMPROVEMENTS

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

To accommodate projected development over the next ten years, Tega Cay will make capital improvements to its park and recreational facilities as development occurs. Based on the development projections contained in Appendix A, the City will need to provide the following growth-related improvements over the next ten years:

- 370 park amenities at a cost of $6.5 million.
- 15,225 linear feet of park trails at a cost of $2.9 million.

Figure 11: Growth-Related Need for Park Amenities and Trails

Park Level-of-Service Standards			
Level-of-Service		**Demand Unit**	**Unit Cost**
0.080	Amenities	per Person	$17,445
3.290	Linear Feet of Trails	per Person	$193

Year		Population	Park Amenities	Linear Feet of Trails	
Base	2022	13,335	1,067	43,872	
Year 1	2023	13,811	1,105	45,437	
Year 2	2024	14,303	1,144	47,058	
Year 3	2025	14,814	1,185	48,738	
Year 4	2026	15,343	1,227	50,478	
Year 5	2027	15,891	1,271	52,280	
Year 6	2028	16,285	1,303	53,577	
Year 7	2029	16,689	1,335	54,906	
Year 8	2030	17,103	1,368	56,269	
Year 9	2031	17,527	1,402	57,665	
Year 10	2032	17,963	1,437	59,097	
Ten-Year Increase		4,628	370	15,225	**TOTAL**
Growth-Related Expenditures			**$6,454,650**	**$2,938,425**	**$9,393,075**

PROPOSED PARKS & RECREATION FEES

Figure 12 details the proposed maximum supportable Parks & Recreation impact fees in Tega Cay. The fees are derived from the average number of persons per housing unit and the total cost per person. Cost factors for park amenities, park trails, and golf course facilities are summarized at the top. Also included in the cost factors is the cost of the Parks & Recreation portion of the Impact Fee Study, allocated by the net population increase through 2027 because the City is required to update its impact fees every five years. The sum of all of these cost factors yields a gross cost per person of $2,157.61. The debt service credit is subtracted from the gross amount to yield a net cost per person of $1,754.44.

To calculate the impact fee per housing unit, the cost per person is simply multiplied by the average persons per housing unit for single and multi-family units, as discussed in Appendix A. The proposed fee for single family housing units is $5,019, and the proposed fee for multi-family housing units is $2,956.

Figure 12: Proposed Fee Schedule for Parks & Recreation

Fee Component	Cost per Person
Park Amenities	$1,395.60
Trails	$634.97
Golf Course	$121.74
Development Impact Fee Study	$5.30
GROSS TOTAL	**$2,157.61**
Parks Credit	($403.17)
NET TOTAL	**$1,754.44**

Type of Household	Persons per Housing Unit	Proposed Fee	Current Fee	*Increase (Decrease)*
Single-Family	2.86	**$5,019**	**$4,317**	*$702*
Multi-Family	1.69	**$2,956**	**$2,483**	*$473*

PROJECTED REVENUE FROM PARKS & RECREATION IMPACT FEES

Revenue projections assume implementation of the proposed Parks & Recreation fees and that development over the next ten years is consistent with the Land Use Assumptions described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. As shown in Figure 13, Parks & Recreation fee revenue is expected to total over $8.1 million over the next ten years, compared to projected expenditures of almost $10 million.

Figure 13: Capital Costs and Revenue for Parks & Recreation

Fee Component	Projected Growth Share Expenditures
Park Amenities	$6,454,650
Trails	$2,938,425
Golf Course	$519,950
Development Impact Fee Study	$13,565
Total Expenditures	**$9,926,590**

		Single-Family	*Multi-Family*
		$5,019 per Unit	$2,956 per Unit
Year		Housing Units	Housing Units
Base	2022	4,420	336
1	2023	4,579	348
2	2024	4,744	361
3	2025	4,915	374
4	2026	5,092	387
5	2027	5,275	401
6	2028	5,407	411
7	2029	5,542	421
8	2030	5,681	432
9	2031	5,823	443
10	2032	5,968	454
10-year Increase		1,548	118
Projected Revenue		**$7,770,209**	**$347,886**

Total Projected Revenue	**$8,118,095**
Total Expenditures	**$9,926,590**

POLICE CIP AND IMPACT FEE CALCULATIONS

METHODOLOGY

The Police impact fee includes components for facilities and vehicles & equipment. Police impact fees are calculated using the cost recovery and incremental expansion methodologies. Costs are allocated to both residential and nonresidential development using different demand indicators for each type of development.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

Residential development impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on persons per housing unit factors. Nonresidential development impact fees are calculated using nonresidential vehicle trips. Trip generation rates are highest for commercial/retail development and lowest for industrial development, whereas trip rates for office & institutional development fall between the other two categories. Using vehicle trip rates ensures that impact fees are consistent with the relative demand for Police services from nonresidential development.

SERVICE UNITS FOR POLICE

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional police service will come from new residential and nonresidential development. The "service unit" used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure 14, there are 2.86 persons per single family housing unit and 1.69 persons per multi-family housing unit, based on the U.S. Census Bureau's 2020 ACS 5-year estimates (further discussed in Appendix A).

Figure 14: Residential Service Units for Police

Type	Persons	Housing Units	Persons per Housing Unit
Single Unit*	10,524	3,678	2.86
2+ Units	310	184	1.69
TOTAL	**10,834**	**3,862**	**2.81**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

TischlerBise recommends functional population to allocate the cost of police facilities and vehicles to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population," by accounting for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states. OnTheMap data is used, as shown in Figure 15, to derive Functional Population shares for Tega Cay.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Tega Cay are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Tega Cay are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2019 functional population data for Tega Cay, the cost allocation for residential development is 83 percent while nonresidential development accounts for 17 percent of the demand.

Figure 15: Tega Cay's Functional Population

DEMAND UNITS IN 2019 Tega Cay, SC					Demand Hours/Day	Person Hours	Proportionate Share
Residential							
Population	Tega Cay, SC	11,364					
Residents Not Working			5,101		20	102,020	
Workers Living in	Tega Cay, SC		6,263				
Residents Working in	Tega Cay, SC			279	14	3,906	
Residents Working outside of	Tega Cay, SC			5,984	14	83,776	
					Residential Subtotal	189,702	**83%**
Nonresidential							
Residents Not Working			5,101		4	20,404	
Jobs Located in	Tega Cay, SC		1,980				
Residents Working in	Tega Cay, SC			279	10	2,790	
Non-Resident Workers	Tega Cay, SC			1,701	10	17,010	
					Nonresidential Subtotal	40,204	**17%**
					TOTAL	229,906	**100%**

Source: U.S. Census (population); U.S. Census, OnTheMap Application and LEHD Origin-Destination Empl. Statistics, 2019.

TischlerBise recommends using nonresidential vehicle trips as the nonresidential "service unit" for Police infrastructure. Average weekday vehicle trip ends for nonresidential development are from the 11th edition of the reference book, Trip Generation, published in 2021 by the Institute of Transportation Engineers. A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial. For commercial/retail development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For an average size shopping center, the ITE (2021) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor (0.66 x 0.50 = 0.33) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage by type, TischlerBise applied the trip end estimates and adjustment factors to calculate the average weekday trip ends for nonresidential

development in Tega Cay, as shown in Figure 16. TischlerBise estimates that there are 7,411 average weekday trip ends attributable to existing nonresidential development in the City of Tega Cay.

Figure 16: Current Estimate of Nonresidential Vehicle Trips

Nonresidential Vehicle Trips on an Average Weekday	*2022*	
Nonresidential Gross Floor Area (1,000 sq. ft.)	***Assumptions***	
Industrial	86	
Commercial	471	
Office & Institutional	269	
Total Nonresidential Floor Area (x1,000 sq. ft.)	826	
Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.*	***Trip Ends***	***Adj. Factor***
Industrial	4.75	50%
Commercial	37.01	33%
Office & Institutional	10.84	50%
Nonresidential Vehicle Trips on an Average Weekday		
Industrial	205	
Commercial	5,747	
Office & Institutional	1,459	
Total Inbound Nonresidential Trips	**7,411**	

* Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2021).

POLICE STATIONS

Existing Standards and Cost Factors

The first component included in the Police fee is police station space. The City built and opened a new Police Station in 2019. Because the station has excess capacity, the cost recovery methodology is used with demand factors set to the year 2033, the year debt service payments are scheduled to be paid off. The fee study assesses residential level of service standards based on projected 2033 population, and nonresidential level of service standards based on projected vehicle trip ends in 2033. Tega Cay's sole police facility is its police station, with a total of 14,000 square feet as shown in Figure 17.

To derive the residential level of service standards, the existing police station floor area (14,000 sq ft) is multiplied by the residential cost share (83%) and divided by the projected 2033 population (18,409), yielding 0.631 square feet of police station per person. Similarly, the nonresidential level of service standard is calculated by multiplying the police station floor area (14,000 sq ft) by the nonresidential cost share (17%) and dividing by projected nonresidential vehicle trips (10,368), yielding 0.230 square feet per vehicle trip.

Total debt issued for the Police Station is approximately $5.4 million , or $383.13 per square foot for the police station. To determine the cost per demand unit, the existing level of service standards (0.631 sq. ft. per person and 0.230 sq. ft. per vehicle trip) are multiplied by the cost per square foot ($383.13), for a cost per demand unit of $241.84 per person and $87.95 per vehicle trip.

Figure 17: Existing Standards for Police Facilities

Facility	Square Footage	Total Debt Service	Debt per Sq Ft
Police Station	14,000	$5,363,785	$383.13

Level-of-Service (LOS) Standards

Population in 2033	18,409
Nonresidential Vehicle Trip Ends in 2033	10,368
Residential Share	83%
Nonresidential Share	17%
LOS: Sq. Ft. per Person	**0.631**
LOS: Sq. Ft. per Vehicle Trip End	**0.230**

Cost Analysis

Debt per Square Foot	$383.13
LOS: Sq. Ft. per Person	0.631
Cost per Person	**$241.84**
LOS: Sq. Ft. per Vehicle Trip End	0.230
Cost per Vehicle Trip End	**$87.95**

Debt Service Schedule	
2019	$109,102
2020	$144,400
2021	$203,400
2022	$171,150
2023	$223,983
2024	$219,809
2025	$217,659
2026	$212,484
2027	$212,360
2028	$285,160
2029	$286,029
2030	$280,746
2031	$788,462
2032	$1,004,149
2033	$1,004,892
Total	**$5,363,785**

POLICE VEHICLES & EQUIPMENT

Existing Standards and Cost Factors

The second component included in the Police fee is police vehicles and equipment. The incremental expansion methodology is used to determine this portion of the impact fees. As shown in Figure 18, the fee study assesses residential level of service standards based on 2022 population, and nonresidential level of service standards based on nonresidential vehicle trip ends in 2022.

South Carolina's Development Impact Fee Act specifies that only vehicles and equipment "with an individual unit purchase price of not less than one hundred thousand dollars including, but not limited to, equipment and vehicles used in the delivery of public safety services, emergency preparedness services, collection and disposal of solid waste, and storm water management and control" may be factored in development impact fees (Code of Laws of South Carolina, Section 6-1-920 et seq.). For this reason, the City's police cars, which have a per unit cost less than $100,000, were excluded from the impact fee calculations.

The two items which meet the state's qualifications are the Police Department's patrol boat and Records/Dispatch Management Software, with a total replacement cost of $310,000 and average replacement cost per item of $155,500. The residential level of service standard of 0.00012 items per person was calculated by multiplying the number of units (2) by the residential cost share (83%) and dividing by the 2022 population (13,335). Similarly, the nonresidential level of service standard of 0.00005 items per vehicle trip was calculated by multiplying the number of units (2) by the nonresidential cost share (17%) and dividing by the number of vehicle trip ends in 2022 (7,411). To determine the cost per demand unit, the existing level of service standards are multiplied by the average unit cost ($155,000), for a cost per demand unit of $19.30 per person and $7.11 per nonresidential vehicle trip.

Figure 18: Existing Standards for Police Vehicles & Equipment

Item	# of Units	Unit Cost	Total Replacement Cost
Patrol Boat	1	$110,000	$110,000
Records/Dispatch Mgt Software	1	$200,000	$200,000
TOTAL	**2**	**$155,000**	**$310,000**

Level-of-Service (LOS) Standards

Population in 2022	13,335
Nonresidential Vehicle Trip Ends in 2022	7,411
Residential Share	83%
Nonresidential Share	17%
LOS: Vehicles & Equipment per Person	**0.00012**
LOS: Vehicles & Equipment per Vehicle Trip End	**0.00005**

Cost Analysis

Cost per Unit	$155,000
LOS: Vehicles & Equipment per Person	0.00012
Cost per Person	**$19.30**
LOS: Vehicles & Equipment per Vehicle Trip End	0.00005
Cost per Vehicle Trip End	**$7.11**

PROJECTED DEMAND FOR GROWTH-RELATED POLICE IMPROVEMENTS

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

Future growth in Tega Cay will utilize the excess capacity in the Police Station and will purchase additional vehicles & equipment as development occurs. Figure 19 demonstrates the Police Department's growth-related needs, which are based on the development projections contained in Appendix A. The following growth-related improvements are needed to serve growth over the next ten years:

- 3,528 square feet of police station floor area at a cost of approximately $1.4 million.
- 0.70 units of vehicles & equipment at a cost of $108,500.

Figure 19: Growth-Related Need for Police Facilities and Vehicles & Equipment

Level-of-Service			Demand Unit	Unit Cost
Residential	0.631	Square Feet	per Person	$383.13
Nonresidential	0.230		per Trip End	

Year		Population	Nonres. Vehicle Trips	Residential Sq. Ft.	Nonresidential Sq. Ft.	TOTAL
Base	2022	13,335	7,411	8,417	1,701	10,119
Year 10	2032	17,963	10,057	11,338	2,309	13,647
Ten-Year Increase		4,628	2,646	2,921	607	**3,528**
Growth-Related Expenditures:				**$1,119,123**	**$232,560**	**$1,351,683**

Growth-Related Need for Vehicles & Equipment

Level-of-Service			Demand Unit	Unit Cost
Residential	0.00012	Units	per Person	$155,000
Nonresidential	0.00005		per Trip End	

Year		Population	Nonres. Vehicle Trips	Res. Vehicles & Equip.	Nonres. Vehicles &	TOTAL
Base	2022	13,335	7,411	1.66	0.34	2.00
Year 10	2032	17,963	10,057	2.24	0.46	2.70
Ten-Year Increase		4,628	2,646	0.58	0.12	**0.70**
Growth-Related Expenditures:				**$89,900**	**$18,600**	**$108,500**

PROPOSED POLICE FEES

Figure 20 details the proposed maximum supportable Police impact fees in Tega Cay. Residential fees are derived from the average number of persons per housing unit and the total cost per person. Nonresidential fees are based on the average number of nonresidential vehicle trip ends per 1,000 square feet of floor area and the total cost per vehicle trip end.

Cost factors for police station facilities and vehicles & equipment are summarized at the top of the figure. Also included in the cost factors is the cost of the Police portion of the Impact Fee Study, allocated based on the net increase in population and nonresidential vehicle trips through 2027. The cost of the study was spread out over five years because the City is required to update its impact fees every five years. The sum of these cost factors yields a cost per person of $263.57 and cost per vehicle trip of $95.27. The proposed fees are calculated by multiplying these costs by the persons per housing unit and trips per 1,000 square feet ratios, as discussed in Appendix A.

Figure 20: Proposed Fee Schedule for Police

Fee Component	Cost per Person	Cost per Vehicle Trip
Police Station	$241.84	$87.95
Vehicles & Equipment	$19.30	$7.11
Development Impact Fee Study	$2.43	$0.21
TOTAL	**$263.57**	**$95.27**

Residential Development (per housing unit)

Type	Persons per Housing Unit	Proposed Fee	Current Fee	*Increase (Decrease)*
Single-Family	2.86	**$754**	**$657**	*$97*
Multi-Family	1.69	**$444**	**$377**	*$67*

Nonresidential Development (per 1,000 square feet)

Type	Trips per 1,000 Sq. Ft.	Trip Rate Adjustment	Proposed Fee	Current Fee	*Increase (Decrease)*
Industrial	4.75	50%	**$226**	**$165**	*$61*
Commercial	37.01	33%	**$1,163**	**$1,047**	*$116*
Office & Institutional	10.84	50%	**$516**	**$409**	*$107*

PROJECTED REVENUE FROM POLICE IMPACT FEES

Revenue projections assume implementation of the proposed police fees and that development over the next ten years is consistent with the Land Use Assumptions described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. As shown in Figure 21, Police fee revenue is expected to total about $1.5 million over the next ten years, compared to projected expenditures of $1.6 million.

Figure 21: Capital Costs and Revenue for Police

Fee Component	Projected Growth Share Expenditures
Facilities	$1,487,061
Vehicles & Equipment	$108,500
Development Impact Fee Study	$9,043
Total Expenditures	**$1,604,604**

		Single-Family	Multi-Family	Industrial	Commercial	Office & Institutional
		$754 per Unit	$444 per Unit	$226 per KSF	$1,163 per KSF	$516 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF
Base	2022	4,420	336	86	471	269
1	2023	4,579	348	89	485	278
2	2024	4,744	361	92	500	286
3	2025	4,915	374	94	516	295
4	2026	5,092	387	97	532	304
5	2027	5,275	401	100	548	314
6	2028	5,407	411	103	565	323
7	2029	5,542	421	107	583	333
8	2030	5,681	432	110	601	344
9	2031	5,823	443	113	619	354
10	2032	5,968	454	117	639	365
10-year Increase		1,548	118	31	168	96
Projected Revenue		**$1,167,312**	**$52,392**	**$7,006**	**$195,393**	**$49,587**

Projected Revenue	**$1,471,690**
Total Expenditures	**$1,604,604**

FIRE CIP AND IMPACT FEE CALCULATIONS

METHODOLOGY

The Fire impact fee includes components for fire station facilities and apparatus. Fire station impact fees are based on the cost recovery method, while the impact fees for fire apparatus employ the incremental expansion method.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

Costs are allocated to both residential and nonresidential development using different demand indicators for each type of development. Residential development impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on persons per housing unit factors. Because the Fire Department responds to emergency medical calls, the nonresidential development impact fees are calculated using nonresidential vehicle trips. Trip generation rates are highest for commercial/retail development and lowest for industrial development, whereas trip rates for office & institutional development fall between the other two categories. Using vehicle trip rates ensures that impact fees are consistent with the relative demand for Fire services from nonresidential development.

SERVICE UNITS FOR FIRE

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional fire service will come from new residential and nonresidential development. The "service unit" used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure 22, there are 2.86 persons per single family housing unit and 1.69 persons per multi-family housing unit, based on the U.S. Census Bureau's 2020 ACS 5-year estimates (further discussed in Appendix A).

Figure 22: Residential Service Units for Fire

Type	Persons	Housing Units	Persons per Housing Unit
Single Unit*	10,524	3,678	2.86
2+ Units	310	184	1.69
TOTAL	**10,834**	**3,862**	**2.81**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

TischlerBise recommends functional population to allocate the cost of fire facilities and vehicles to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population," by accounting for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states. OnTheMap data is used, as shown in Figure 23, to derive Functional Population shares for Tega Cay.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Tega Cay are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Tega Cay are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2019 functional population data for Tega Cay, the cost allocation for residential development is 83 percent while nonresidential development accounts for 17 percent of the demand.

Figure 23: Tega Cay's Functional Population

DEMAND UNITS IN 2019 Tega Cay, SC					Demand Hours/Day	Person Hours	Proportionate Share
Residential							
Population	Tega Cay, SC	11,364					
Residents Not Working			5,101		20	102,020	
Workers Living in	Tega Cay, SC		6,263				
Residents Working in	Tega Cay, SC			279	14	3,906	
Residents Working outside of	Tega Cay, SC			5,984	14	83,776	
					Residential Subtotal	189,702	**83%**
Nonresidential							
Residents Not Working			5,101		4	20,404	
Jobs Located in	Tega Cay, SC		1,980				
Residents Working in	Tega Cay, SC			279	10	2,790	
Non-Resident Workers	Tega Cay, SC			1,701	10	17,010	
					Nonresidential Subtotal	40,204	**17%**
					TOTAL	229,906	**100%**

Source: U.S. Census (population); U.S. Census, OnTheMap Application and LEHD Origin-Destination Empl. Statistics, 2019.

TischlerBise recommends using nonresidential vehicle trips as the nonresidential "service unit" for Fire infrastructure. Average weekday vehicle trip ends for nonresidential development are from the 11th edition of the reference book, Trip Generation, published in 2021 by the Institute of Transportation Engineers. A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial. For commercial/retail development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For an average size shopping center, the ITE (2021) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor (0.66 x 0.50 = 0.33) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage by type, TischlerBise applied the trip end estimates and adjustment factors to calculate the average weekday trip ends for nonresidential

development in Tega Cay, as shown in Figure 24. TischlerBise estimates that there are 7,411 average weekday trip ends attributable to existing nonresidential development in the City of Tega Cay.

Figure 24: Current Estimate of Nonresidential Vehicle Trips

Nonresidential Vehicle Trips on an Average Weekday	*2022*	
Nonresidential Gross Floor Area (1,000 sq. ft.)	***Assumptions***	
Industrial	86	
Commercial	471	
Office & Institutional	269	
Total Nonresidential Floor Area (x1,000 sq. ft.)	826	
Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.*	***Trip Ends***	***Adj. Factor***
Industrial	4.75	50%
Commercial	37.01	33%
Office & Institutional	10.84	50%
Nonresidential Vehicle Trips on an Average Weekday		
Industrial	205	
Commercial	5,747	
Office & Institutional	1,459	
Total Inbound Nonresidential Trips	**7,411**	

* Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2021).

FIRE STATIONS

Standards and Cost Factors

The first component of the Fire fee is fire station space. The cost recovery method is used to calculate the fire station portion of the impact fees. The City currently has a total of $2,087,075 in outstanding debt service payments for Fire Station 1 (6,763 square feet). Fire Station 2 is 6,000 square feet with a current replacement cost estimated at $600 per square foot (per City of Tega Cay). Both stations together comprise the City's current level of service. The fee study assesses level of service standards based on the City's total population and nonresidential vehicle trips in 2031, because the fees must be allocated to new and existing residential development proportionately.

To derive the residential level of service standards, the station floor area (12,763 sq ft) is multiplied by the residential cost share (83%) and then divided by the projected 2031 population (17,527), yielding 0.604 square feet per person. Similarly, the nonresidential level of service standard is produced by multiplying the station floor area (12,763 sq ft) by the nonresidential cost share (17%) and dividing by the projected number of vehicle trip ends in 2031 (9,754), yielding 0.222 square feet per vehicle trip. To determine the

cost per demand unit, these level of service standards are multiplied by the weighted average cost per square foot ($445.59), for a cost per demand unit of $269.31 per person and $99.12 per vehicle trip end.

Figure 25: Level of Service Standards for Fire Stations

Facility	Square Footage	Cost*	Cost per Sq. Ft.
Fire Station 1	6,763	$2,087,075	$308.60
Fire Station 2	6,000	$3,600,000	$600.00
Total	12,763	$5,687,075	$445.59

<< updated Fire Chief

** Fire Station 1 reflects current outstanding debt;*
Fire Station 2 reflects current replacement cost (City of Tega Cay).

Debt Service Schedule	
2020	$184,800
2021	$190,800
2022	$200,607
2023	$202,331
2024	$203,954
2025	$205,477
2026	$207,899
2027	$209,201
2028	$211,402
2029	$213,482
2030	$215,442
2031	$217,281
Total (2022-31)	**$2,087,075**

Level-of-Service (LOS) Standards

Population in 2031	17,527
Nonresidential Vehicle Trip Ends in 2031	9,754
Residential Share	83%
Nonresidential Share	17%
LOS: Sq. Ft. per Person	**0.604**
LOS: Sq. Ft. per Vehicle Trip End	**0.222**

Cost Analysis

Cost per Square Foot	$445.59
LOS: Sq. Ft. per Person	0.604
Cost per Person	**$269.31**
LOS: Sq. Ft. per Vehicle Trip End	0.222
Cost per Vehicle Trip End	**$99.12**

When the cost recovery method is used, it's important to note the share of the fee allocated towards existing versus new development. As previously stated, impact fees must be allocated to new and existing development proportionately. As shown in Figure 26, when the cost allocation factors are multiplied by the population and number of nonresidential vehicle trips in 2022, the existing share is $1,587,510, which accounts for 76% of the total oustanding debt service on fire station. Likewise, when the cost allocation factors are multiplied by the population and number of nonresidential vehicle trips in 2031, the growth share is $499,581, or 24% of the total oustanding debt service.

Figure 26: Existing and Growth Share of Fire Station Facilities

Facility	Total Debt Service	2031 Development	Units
Fire Station 1	$2,087,075	17,527	population
		9,754	trip ends
	Cost per Person		**$98.83**
	Cost per Vehicle Trip End		**$36.38**

Existing Development Share		
Population in 2022	13,335	
Vehicle Trip Ends in 2022	7,411	
Existing Development Share	**$1,587,510**	**76%**

Growth Share		
Net Population Increase (thru 2031)	4,192	
Net Vehicle Trip Increase (thru 2031)	2,343	
Growth Share	**$499,581**	**24%**

FIRE APPARATUS

Existing Standards and Cost Factors

The second component included in the Fire fee is apparatus. The incremental expansion methodology is used to determine this portion of the impact fees. The fee study assesses residential level of service standards based on 2022 population, and nonresidential level of service standards based on nonresidential vehicle trip ends in 2022.

South Carolina's Development Impact Fee Act specifies that only vehicles and equipment "with an individual unit purchase price of not less than one hundred thousand dollars including, but not limited to, equipment and vehicles used in the delivery of public safety services, emergency preparedness services, collection and disposal of solid waste, and storm water management and control" may be factored in development impact fees (Code of Laws of South Carolina, Section 6-1-920 et seq.).

As shown in Figure 27, Tega Cay own seven qualifying fire apparatus with an average replacement cost of $835,714 per piece. The residential level of service standard of 0.00044 items per person was calculated by multiplying the number of apparatus (7) by the residential cost share (83%) and dividing by the 2022 population (13,335). Similarly, the nonresidential level of service standard of 0.00016 items per vehicle trip was calculated by multiplying the number of apparatus (7) by the nonresidential cost share (17%) and dividing by the number of vehicle trip ends in 2022 (7,411). To determine the cost per demand unit, the existing level of service standards are multiplied by the average unit cost ($835,714), for a cost per demand unit of $364.12 per person and $134.19 per nonresidential vehicle trip.

Figure 27: Existing Standards for Fire Apparatus

Apparatus	# of Units	Unit Cost	Total Cost
Fire Engine 1	1	$850,000	$850,000
Fire Engine 2	1	$850,000	$850,000
Fire Engine 4	1	$850,000	$850,000
Service Truck	1	$900,000	$900,000
Brush Truck	1	$200,000	$200,000
Marine 1	1	$200,000	$200,000
Platform	1	$2,000,000	$2,000,000
Total	**7**	**$835,714**	**$5,850,000**

Level-of-Service (LOS) Standards

Population in 2022	13,335
Nonresidential Vehicle Trip Ends in 2022	7,411
Residential Share	83%
Nonresidential Share	17%
LOS: Vehicles & Equipment per Person	**0.00044**
LOS: Vehicles & Equipment per Vehicle Trip End	**0.00016**

Cost Analysis

Cost per Unit	$835,714
LOS: Vehicles & Equipment per Person	0.00044
Cost per Person	**$364.12**
LOS: Vehicles & Equipment per Vehicle Trip End	0.00016
Cost per Vehicle Trip End	**$134.19**

PROJECTED DEMAND FOR GROWTH-RELATED FIRE IMPROVEMENTS

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

To accommodate projected development over the next ten years, Tega Cay will use excess capacity in Fire Stations and purchase additional fire apparatus. Figure 28 demonstrates the Fire Department's growth-related needs, which are based on the development projections contained in Appendix A. Projected development generates a need for 3,385 square feet and 2.5 units of additional apparatus.

Figure 28: Growth-Related Need for Fire Facilities and Apparatus

Growth-Related Need for Facilities

Level-of-Service			Demand Unit	Unit Cost
Residential	0.604	Square Feet	per Person	$445.59
Nonresidential	0.222		per Trip End	

Year		Population	NonRes. Trip Ends	Residential Sq. Ft.	Nonresidential Sq. Ft.	Total Sq. Ft.
Base	2022	13,335	7,411	8,059	1,649	9,708
Year 10	2032	17,963	10,057	10,856	2,237	13,093
Ten-Year Increase		4,628	2,646	2,797	589	**3,385**
Growth-Related Expenditures:				**$1,246,315**	**$262,453**	**$1,508,322**

Growth-Related Need for Apparatus

Level-of-Service			Demand Unit	Unit Cost
Residential	0.00044	Units	per Person	$835,714
Nonresidential	0.00016		per Trip End	

Year		Population	NonRes. Trip Ends	Residential Apparatus	Nonres. Apparatus	Total
Base	2022	13,335	7,411	5.8	1.2	7.0
Year 10	2032	17,963	10,057	7.8	1.6	9.4
Ten-Year Increase		4,628	2,646	2.0	0.4	**2.5**
Growth-Related Expenditures:				**$1,671,429**	**$334,286**	**$2,089,286**

PROPOSED FIRE FEES

Figure 29 details the proposed maximum supportable Fire impact fees in Tega Cay. Residential fees are derived from the average number of persons per housing unit and the total cost per person. Nonresidential fees are based on the average number of nonresidential vehicle trip ends per 1,000 square feet of floor area and the total cost per vehicle trip end.

Cost factors for fire station facilities and apparatus are summarized at the top of the figure. Also included in the cost factors is the cost of the Fire portion of the Impact Fee Study, allocated based on the net increase in population and nonresidential vehicle trips through 2027. The cost of the study was spread out over five years because the City is required to update its impact fees every five years. The sum of these cost factors yields a cost per person of $636.27 and cost per vehicle trip of $233.55. The proposed fees are calculated by multiplying these costs by the persons per housing unit and trips per 1,000 square feet ratios, as discussed in Appendix A.

Figure 29: Proposed Fee Schedule for Fire

Fee Component	Cost per Person	Cost per Trip End
Facilities	$269.31	$99.12
Apparatus	$364.12	$134.19
Development Impact Fee Study	$2.84	$0.24
TOTAL	**$636.27**	**$233.55**

Residential (per housing unit)				
Type of Household	**Persons per Housing Unit**	**Proposed Fee**	**Current Fee**	*Increase (Decrease)*
Single-Family	2.86	**$1,820**	**$1,702**	*$118*
Multi-Family	1.69	**$1,072**	**$979**	*$93*

Nonresidential Development (per 1,000 square feet)					
Type	**Trips per 1,000 Sq. Ft.**	**Trip Rate Adjustment**	**Proposed Fee**	**Current Fee**	*Increase (Decrease)*
Industrial	4.75	50%	**$554**	**$426**	*$128*
Commercial	37.01	33%	**$2,852**	**$2,704**	*$148*
Office & Institutional	10.84	50%	**$1,265**	**$1,057**	*$208*

PROJECTED REVENUE FROM FIRE IMPACT FEES

Revenue projections assume implementation of the proposed fire fees and that development over the next ten years is consistent with the Land Use Assumptions described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. As shown in Figure 30, Fire fee revenue is expected to total just under $3.6 million over the next ten years, compared to projected expenditures of $3.6 million.

Figure 30: Capital Costs and Revenue for Fire

Fee Component	Projected Growth Share Expenditures
Facilities	$1,508,322
Apparatus	$2,089,286
Development Impact Fee Study	$10,551
Total Expenditures	**$3,608,159**

		Single-Family	Multi-Family	Industrial	Commercial	Office & Institutional
		$1,820 per Unit	$1,072 per Unit	$554 per KSF	$2,852 per KSF	$1,265 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF
Base	2022	4,420	336	86	471	269
1	2023	4,579	348	89	485	278
2	2024	4,744	361	92	500	286
3	2025	4,915	374	94	516	295
4	2026	5,092	387	97	532	304
5	2027	5,275	401	100	548	314
6	2028	5,407	411	103	565	323
7	2029	5,542	421	107	583	333
8	2030	5,681	432	110	601	344
9	2031	5,823	443	113	619	354
10	2032	5,968	454	117	639	365
10-year Increase		1,548	118	31	168	96
Projected Revenue		**$2,818,220**	**$126,175**	**$17,035**	**$479,157**	**$121,565**

Projected Revenue	**$3,562,152**
Total Expenditures	**$3,608,159**

WATER CIP AND IMPACT FEE CALCULATIONS

METHODOLOGY

The components of Tega Cay's Water impact fee include booster pumps and water storage. Impact fees for booster pumps are calculated using the cost recovery method, while the fee for water storage is calculated using the plan-based method.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

The fees are based on average peak gallons of water used by residential customers and are assessed per meter/connection. In this section, the terms "meter" and "connection" are used interchangeably. Impact fees paid by nonresidential development are derived from capacity ratios according to the size of the new customer's water meter. Capacity ratios were obtained from the American Water Works Association (AWWA).

SERVICE UNITS FOR WATER AND WATER DEMAND PROJECTIONS

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional water will come from new residential and nonresidential development. The "service unit" used for water is peak daily water consumption per meter. Based on data provided by the City of Tega Cay, the peak daily water consumption per residential meter in 2022 is 320 gallons per day. Figure 31 summarizes the derivation of service units for water service.

Figure 31: Service Units for Water

Type	Meters	Total Peak Daily Water Flow	Peak Daily Flow per Meter
Residential	5,228	1,672,960	**320**

Water use by current customers was determined from the City's utility billing records. The number of water customers and peak usage for 2022 is shown in Figure 32. Tega Cay has a total of 5,277 connections with a peak daily demand of almost 1.8 million gallons. Residential connections have an average peak daily demand of 320 gallons per meter, and commercial connections have an average peak daily demand of 2,427 per meter.

Figure 32: Current Water Customers and Peak Daily Usage

Type	Meters	Peak Flow (Gal Per Day)*	Total Peak GPD	Demand Units	Meters per Demand Unit
Residential	5,228	320	1,672,960	4,756 Housing Units	1.099
Commercial	49	2,427	118,923	2,039 Jobs	0.024
Total	**5,277**	**2,747**	**1,791,883**		

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

Annual water meter and demand projections are shown in Figure 33. The number of projected water meters is based on the housing unit and job projections discussed in Appendix A and the number of meters per housing unit/job shown above in Figure 32 (1.099 meters per housing unit, and 0.024 meters per job). The projected peak daily usage is a function of the projected number of connections and the peak daily demand factors shown above (320 gallons per day for residential connections, and 2,427 gallons per day for nonresidential customers). Based on the increase in water customers shown below, peak daily water demand will be approximately 2.4 million gallons per day (MGD) by 2032.

Figure 33: Projected Water Customers and Peak Daily Usage

Type	Meters	Peak Flow (Gal Per Day)*	Total Peak GPD	Demand Units	Meters per Demand Unit
Residential	5,228	320	1,672,960	4,756 Housing Units	1.099
Commercial	49	2,427	118,923	2,039 Jobs	0.024
Total	**5,277**	**2,747**	**1,791,883**		

** City of Tega Cay Utilities*

Year		Total Meters	Peak Flow (GPD)	Housing Units	Res. Meters	Peak Res GPD	Jobs	Comm. Meters	Peak Comm GPD
Base	2022	5,277	1,791,883	4,756	5,228	1,672,960	2,039	49	118,923
1	2023	5,467	1,856,897	4,927	5,416	1,733,120	2,102	51	123,777
2	2024	5,663	1,921,724	5,105	5,611	1,795,520	2,167	52	126,204
3	2025	5,867	1,991,218	5,288	5,813	1,860,160	2,235	54	131,058
4	2026	6,077	2,060,525	5,479	6,022	1,927,040	2,304	55	133,485
5	2027	6,296	2,134,819	5,676	6,239	1,996,480	2,375	57	138,339
6	2028	6,454	2,189,593	5,818	6,395	2,046,400	2,449	59	143,193
7	2029	6,616	2,245,647	5,963	6,555	2,097,600	2,525	61	148,047
8	2030	6,782	2,302,981	6,112	6,719	2,150,080	2,603	63	152,901
9	2031	6,951	2,359,168	6,265	6,887	2,203,840	2,684	64	155,328
10	2032	7,125	2,419,062	6,422	7,059	2,258,880	2,767	66	160,182
Net Increase		**1,848**	**627,179**	**1,666**	**1,831**	**585,920**	**728**	**17**	**41,259**

WATER BOOSTER PUMPS

Standards and Cost Factors

The first component of the water fee is water booster pumps. The cost recovery method is used to calculate this portion of the water impact fees. As shown in Figure 34, the City currently has a total of $247,488 in oustanding debt service payments for its booster pumps, paid in regular installments through 2025. Dividing the total debt service by the projected peak daily water demand in 2025 (1,991,218 gallons) produces a cost per peak daily flow of $0.12 per gallon.

When the cost recovery method is used, it's important to note the share of the fee allocated towards existing versus new development. As previously stated, impact fees must be allocated to new and existing development proportionately. As shown in Figure 34, when the cost allocation factor ($0.12 per gallon) is multiplied by the residential peak flow in 2022, existing development's share is $222,713, which accounts for 90% of the total outstanding debt service on the water booster pumps. Likewise, when the cost allocation factor is multiplied by projected residential peak flow in 2025, the growth share is $24,775, or 10% of the total oustanding debt service.

Figure 34: Level of Service Standards for Water Booster Pumps

Cost Allocation Factors				
Asset	**Total Remaining Debt Service**	**Year of Final Debt Payment**	**2025 Peak Flow Demand (GPD)**	**Debt Service per Peak Flow Demand (per Gal.)**
Booster Pumps	$247,488	2025	1,991,218	**$0.12**

Debt Service Schedule	
2022	$61,872
2023	$61,872
2024	$61,872
2025	$61,872
Total	**$247,488**

Existing Development Share		
Total Peak Daily Flow in 2022	1,791,883	
Total Existing Development Share	**$222,713**	**90%**

Growth Share		
Net Increase in Peak Daily Flow (thru 2025)	199,335	
Total Growth Share	**$24,775**	**10%**

Source: City of Tega Cay Utilities; City of Tega Cay Finance

PLANNED WATER SYSTEM IMPROVEMENTS

Standards and Cost Factors

The second component of the water fee is the City's planned water system improvements. The plan-based methodology is used to calculate this portion of the water impact fees. As shown in Figure 35, the City currently has one planned system improvement: a 500,000 gallon water storage tank at a cost of $1.5 million.

The capacity of the storage tank is measured in gallons, yielding a cost per gallon of $3.00.

Figure 35: Planned Water System Improvements

Asset	Cost	Capacity (Gal)	Cost per Gallon
500,000 gal storage tank	$1,500,000	500,000	**$3.00**

Source: City of Tega Cay Utilities

COST FACTORS AND PROPOSED WATER FEE

Figure 36 details the cost factors and proposed maximum supportable Water impact fees in Tega Cay. Cost factors for water system improvements are summarized at the top of the figure. Included in the cost factors is the cost of the Water portion of the Impact Fee Study, allocated based on the net increase in peak daily water consumption through 2027. The cost of the study was spread out over five years because the City is required to update its impact fees every five years. The sum of cost factors measured per gallon of capacity is $3.13 per gallon.

The proposed fee for a 0.75 inch meter, the standard residential meter size, is calculated by multiplying the peak daily residential flow per meter (320 gallons) by the cost per gallon of capacity ($3.13), yielding a fee of $1,002 per residential meter. The impact fees for nonresidential meters are derived using capacity ratios according to the size of the new customer's water meter. Capacity ratios were obtained from the American Water Works Association (AWWA), and serve as multipliers for peak residential capacity. For example, the impact fee for a 1.5 inch meter is calculated by multiplying its capacity ratio (3.33), the peak daily residential flow per meter (320 gallons), and the cost factor per gallon ($3.13) together, producing a fee of $3,339.

Figure 36: Cost Factors and Proposed Impact Fees for Water

Demand Indicators	
Peak Residential GPD	320

Cost Factors per Gallon of Capacity	
Water Storage	$3.00
Cost Recovery for Booster Pumps	$0.12
Development Impact Fee Study	$0.01
Net Capital Cost per Gallon	**$3.13**

All Development Types (per meter)				
Meter Size (inches)	***Capacity Ratio****	***Proposed Fee***	**Current Fee**	*Increase (Decrease)*
0.75	1.00	**$1,002**	**$1,107**	*($105)*
1.00	1.67	**$1,674**	**$1,810**	*($136)*
1.50	3.33	**$3,339**	**$3,553**	*($214)*
2.00	5.33	**$5,345**	**$5,652**	*($307)*
3.00	10.67	**$10,701**	**$11,257**	*($556)*
4.00	16.67	**$16,719**	**$17,555**	*($836)*
6.00	33.33	**$33,429**	**$35,041**	*($1,612)*

**Source American Water Works Association, M6.*

WASTEWATER CIP AND IMPACT FEE CALCULATIONS

METHODOLOGY

Tega Cay's wastewater impact fee has two components: sewer lift/pump station upgrades and a vacuum jetter truck. Wastewater impact fees are calculated using the plan-based method.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

The City of Tega Cay does not track wastewater consumption by customer, so water consumption by customer is used as a proxy for wastewater demand. The wastewater fees are assessed per meter/connection. Impact fees paid by nonresidential development are derived from capacity ratios according to the size of the new customer's water meter. Capacity ratios were obtained from the American Water Works Association (AWWA). In this section, the terms "meter" and "connection" are used interchangeably.

WASTEWATER SERVICE UNITS AND DEMAND

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional water will come from new residential and nonresidential development. The "service unit" used for water is peak daily water consumption per meter. Per the Utility Deparment, customers typically return 85% of their water use to the wastewater system, therefore, peak daily water consumption per meter is multiplied by 85% to derive estimated wastewater consumption. Based on data provided by the City of Tega Cay, the peak daily water consumption per residential meter in 2022 is 320 gallons per day, which means 272 gallons per meter is returned to the wastewater system on a peak consumption day. Figure 37 summarizes the derivation of service units for wastewater.

Figure 37: Service Units for Wastewater

Type	Meters	Total Peak Daily Water Flow	Wastewater Return Rate	Peak Daily Flow per Meter
Residential	5,228	1,672,960	85%	**272**

Type	Meters	Peak Flow (Gal Per Day)*	Total Peak GPD	Demand Units	Meters per Demand Unit
Residential	5,228	272	1,422,016	4,756 Housing Units	1.099
Commercial	49	2,063	101,085	2,039 Jobs	0.024
Total	**5,277**	**2,335**	**1,523,101**		

** Per Tega Cay Utilities, 85% of water is assumed to return to wastewater system*

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

Annual wastewater connections and demand projections are shown in Figure 38. The number of projected connections is based on the housing unit and job projections discussed in Appendix A and the number of connections per housing unit/job shown above in Figure 37 (1.099 connections per housing unit, and 0.024 connections per job). The projected peak daily usage is simply a function of the projected number of connections and the peak daily demand factors shown above (272 gallons per day for residential connections, and 2,063 gallons per day for nonresidential customers). Based on the increase in connections shown below, peak daily wastewater demand will be nearly 1.9 million gallons per day (MGD) by 2032.

Figure 38: Projected Wastewater Customers and Peak Daily Flow

Year		Total Meters	Peak Flow (GPD)	Housing Units	Res. Meters	Peak Res GPD	Jobs	Comm. Meters	Peak Comm GPD
Base	2022	5,277	1,523,101	4,756	5,228	1,422,016	2,039	49	101,085
1	2023	5,467	1,578,362	4,927	5,416	1,473,152	2,102	51	105,210
2	2024	5,663	1,633,465	5,105	5,611	1,526,192	2,167	52	107,273
3	2025	5,867	1,692,535	5,288	5,813	1,581,136	2,235	54	111,399
4	2026	6,077	1,751,446	5,479	6,022	1,637,984	2,304	55	113,462
5	2027	6,296	1,814,596	5,676	6,239	1,697,008	2,375	57	117,588
6	2028	6,454	1,861,154	5,818	6,395	1,739,440	2,449	59	121,714
7	2029	6,616	1,908,800	5,963	6,555	1,782,960	2,525	61	125,840
8	2030	6,782	1,957,534	6,112	6,719	1,827,568	2,603	63	129,966
9	2031	6,951	2,005,293	6,265	6,887	1,873,264	2,684	64	132,029
10	2032	7,125	2,056,203	6,422	7,059	1,920,048	2,767	66	136,155
Net Increase		**1,848**	**533,102**	**1,666**	**1,831**	**498,032**	**728**	**17**	**35,070**

PLANNED WASTEWATER SYSTEM IMPROVEMENTS

Standards and Cost Factors

The plan-based methodology is used to calculate the wastewater impact fees. As shown in Figure 39, the City currently has one planned system improvement, a new sewer lift/pump station, with an estimated cost of $625,000. The station will increase capacity by an estimated 150,000 gallons per day. Dividing the station's cost by its additional capacity produces a total cost per gallon of $4.17 per gallon.

The vacuum jetter truck, however, will service all meters regardless of water consumption. Therefore, its capacity is measured per projected meters in 2032, with a cost of $70.18 per meter.

Figure 39: Planned Wastewater System Improvements

Asset	Cost	Additional Capacity	Cost per Gallon of Capacity
Sewer Lift/Pump Station Upgrades	$625,000	150,000	**$4.17**
Total	**$625,000**	150,000	**$4.17**

Source: City of Tega Cay Utilities

Asset	Cost	Projected Meters Served (Year 2032)	Cost per Meter
Vacuum Jetter Truck	$500,000	7,125	**$70.18**

Source: City of Tega Cay Utilities

COST FACTORS AND PROPOSED WASTEWATER FEES

Figure 40 details the cost factors and proposed maximum supportable Wastewater impact fees in Tega Cay. Cost factors for wastewater system improvements (measured in cost per gallon and cost per meter) are summarized at the top of the figure. Included in the cost factors is the cost of the Wastewater portion of the Impact Fee Study, allocated based on the net increase in peak daily wastewater usage through 2023. The cost of the study was spread out over five years because the City is required to update its impact fees every five years. The sum of these cost factors yields a cost per gallon of capacity of $4.19.

The proposed fee for a 0.75 inch meter, the standard residential meter size, is calculated by multiplying the peak daily residential flow per connection (240 gallons) by the cost factor per gallon ($4.19), and adding the cost per meter ($70.18), yielding a fee of $1,209 per residential meter.

The impact fees for nonresidential meters are derived from capacity ratios according to the size of the new customer's water meter. Capacity ratios were obtained from the American Water Works Association (AWWA), and are based on the standard 0.75 inch meter which has a capacity ratio of 1.00. For example, the impact fee for a 1.5 inch meter is calculated by multiplying the capacity ratio (3.33), the peak daily residential flow per meter (272 gallons), and the cost factor per gallon ($4.19) plus the net capital cost per meter of $70.18, producing a fee of $3,865.

Figure 40: Cost Factors and Proposed Impact Fees for Wastewater

Demand Indicators	
Peak Daily Gallons per Connection	272

Cost Factors per Gallon of Capacity	
Sewer Lift/Pump Station Upgrades	$4.17
Development Impact Fee Study	$0.02
Net Capital Cost	**$4.19**

Cost Factors per Meter	
Vacuum Jetter Truck Cost per Meter	$70.18
Net Capital Cost per Meter	**$70.18**

All Development Types (per meter)				
Meter Size (inches)	***Capacity Ratio****	***Proposed Fee***	**Current Fee**	*Increase (Decrease)*
0.75	1.00	**$1,209**	**$764**	*$445*
1.00	1.67	**$1,973**	**$1,277**	*$696*
1.50	3.33	**$3,865**	**$2,546**	*$1,319*
2.00	5.33	**$6,144**	**$4,076**	*$2,068*
3.00	10.67	**$12,230**	**$8,160**	*$4,070*
4.00	16.67	**$19,068**	**$12,749**	*$6,319*
6.00	33.33	**$38,055**	**$25,490**	*$12,565*

** Source American Water Works Association, M6.*

PUBLIC WORKS CIP AND IMPACT FEE CALCULATIONS

METHODOLOGY

The Public Works impact fee includes components for Public Works facilities. Public Works impact fees use the plan-based method with two facilities planned to be built.

Section 6-1-960(1) of the South Carolina Development Impact Fee Act requires:

> *"a general description of all existing facilities and their existing deficiencies, within the service area or areas of the governmental entity, a reasonable estimate of all costs, and a plan to develop the funding resources, including existing sources of revenues, related to curing existing deficiencies including, but not limited to, the upgrading, updating, improving, expanding, or replacing of these facilities to meet existing needs and usage."*

Section 6-1-960(2) of the South Carolina Development Impact Fee Act requires:

> *"an analysis of total capacity, the level of current usage, and commitments for usage of capacity of existing public facilities, which must be prepared by qualified a professional using generally accepted principles and professional standards."*

Costs are allocated to both residential and nonresidential development using different demand indicators for each type of development. Residential development impact fees are calculated on a per capita basis, then converted to an appropriate amount for each type of housing unit based on persons per housing unit factors. The nonresidential development Public Works impact fees are calculated using nonresidential vehicle trips because the facility included in the calculation is primarily used to support street construction and maintenance. Trip generation rates are highest for commercial/retail development and lowest for industrial development, whereas trip rates for office & institutional development fall between the other two categories. Using vehicle trip rates ensures that impact fees are consistent with the relative demand for Public Works services from nonresidential development.

SERVICE UNITS FOR PUBLIC WORKS

Section 6-1-960(4) of the South Carolina Development Impact Fee Act requires:

> *"a definitive table establishing the specific service unit for each category of system improvements and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, agricultural, and industrial, as appropriate."*

Demand for additional public works facilities will come from new residential and nonresidential development. The "service unit" used for residential development is persons per housing unit (PPHU). This is a measure of, on average, the number of persons residing in each housing unit. As shown in Figure 41, there are 2.86 persons per single family housing unit and 1.69 persons per multi-family housing unit, based on the U.S. Census Bureau's 2020 ACS 5-year estimates (further discussed in Appendix A).

Figure 41: Residential Service Units for Public Works

Type	Persons	Housing Units	Persons per Housing Unit
Single Unit*	10,524	3,678	2.86
2+ Units	310	184	1.69
TOTAL	**10,834**	**3,862**	**2.81**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

TischlerBise recommends functional population to allocate the cost of Public Works facilities to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population," by accounting for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states. OnTheMap data is used, as shown in Figure 42, to derive Functional Population shares for Tega Cay.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Tega Cay are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Tega Cay are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2019 functional population data for Tega Cay, the cost allocation for residential development is 83 percent while nonresidential development accounts for 17 percent of the demand.

Figure 42: Tega Cay's Functional Population

DEMAND UNITS IN 2019
Tega Cay, SC

					Demand Hours/Day	Person Hours	Proportionate Share
Residential							
Population	Tega Cay, SC	11,364					
Residents Not Working			5,101		20	102,020	
Workers Living in	Tega Cay, SC		6,263				
Residents Working in	Tega Cay, SC			279	14	3,906	
Residents Working outside of	Tega Cay, SC			5,984	14	83,776	
					Residential Subtotal	189,702	**83%**
Nonresidential							
Residents Not Working			5,101		4	20,404	
Jobs Located in	Tega Cay, SC		1,980				
Residents Working in	Tega Cay, SC			279	10	2,790	
Non-Resident Workers	Tega Cay, SC			1,701	10	17,010	
					Nonresidential Subtotal	40,204	**17%**
					TOTAL	229,906	**100%**

Source: U.S. Census (population); U.S. Census, OnTheMap Application and LEHD Origin-Destination Empl. Statistics, 2019.

TischlerBise recommends using nonresidential vehicle trips as the nonresidential "service unit" for Public Works infrastructure. Average weekday vehicle trip ends for nonresidential development are from the 11th edition of the reference book, Trip Generation, published in 2021 by the Institute of Transportation Engineers. A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial. For commercial/retail development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For an average size shopping center, the ITE (2021) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor (0.66 x 0.50 = 0.33) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage by type, TischlerBise applied the trip end estimates and adjustment factors to calculate the average weekday trip ends for nonresidential development in Tega Cay, as shown in Figure 43. TischlerBise estimates that there are 7,411 average weekday trip ends attributable to existing nonresidential development in the City of Tega Cay.

Figure 43: Current Estimate of Nonresidential Vehicle Trips

Nonresidential Vehicle Trips on an Average Weekday	*2022*	
Nonresidential Gross Floor Area (1,000 sq. ft.)	***Assumptions***	
Industrial	86	
Commercial	471	
Office & Institutional	269	
Total Nonresidential Floor Area (x1,000 sq. ft.)	826	
Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.*	***Trip Ends***	***Adj. Factor***
Industrial	4.75	50%
Commercial	37.01	33%
Office & Institutional	10.84	50%
Nonresidential Vehicle Trips on an Average Weekday		
Industrial	205	
Commercial	5,747	
Office & Institutional	1,459	
Total Inbound Nonresidential Trips	**7,411**	

* Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2021).

PUBLIC WORKS FACILITIES

Standards and Cost Factors

The Public Works impact fee has two components: Public Works Operation Center and Mulching Facility. The plan-based method is used to calculate the fees.

The Public Works Operation Center is allocated to both residential and nonresidential demand at an estimated cost of $1.6 million. The Mulching Facility is available exclusively to residential users and therefore allocated to residential land uses at a planned estimated cost of $750,000.

The fee study determines level of service standards based on the City's projected population and nonresidential vehicle trips in 2033, as these facilities are planned to provide capacity through 2033.

To derive the residential level of service standards, total square footage allocated to residential development (14,960 sq. ft.) is divided by the projected 2033 population (18,409), yielding 0.813 square feet per person. Similarly, the nonresidential level of service standard is produced by dividing square footage allocated to nonresidential development (2,040 sq. ft.) by the projected number of vehicle trip

ends in 2033 (10,368), yielding 0.197 square feet per vehicle trip. To determine the cost per demand unit, costs allocated to each respective demand base is divided by appropriate demand units, resulting in a cost of $112.88 per person and $26.23 per vehicle trip end.

Figure 44: Level of Service Standards for Public Works Facilities

				Allocation					
Facility	**Current Sq. Ft.**	**Planned Sq. Ft.**	**Planned Cost**	**Resid. %**	**Nonresid. %**	**Resid. Sq. Ft.**	**Nonresid. Sq. Ft.**	**Resid. $**	**Nonresid. $**
Public Works Operation Center	8,784	12,000	$1,600,000	83%	17%	9,960	2,040	$1,328,000	$272,000
Public Works Mulching Facility	0	5,000	$750,000	100%	0%	5,000	0	$750,000	$0
TOTAL	8,784	17,000	$2,350,000			14,960	2,040	$2,078,000	$272,000
Weighted Average per Sq. Ft.			$138.24						

Level-of-Service (LOS) Standards

Population in 2033	18,409
Nonresidential Vehicle Trip Ends in 2033	10,368
Residential Sq. Ft.	14,960
Nonresidential Sq. Ft.	2,040
LOS: Sq. Ft. per Person	**0.813**
LOS: Sq. Ft. per Vehicle Trip End	**0.197**

Cost Analysis

Residential Planned Cost	$2,078,000
Population in 2033	18,409
Cost per Person	**$112.88**
Nonresidential Planned Cost	$272,000
Nonresidential Vehicle Trip Ends in 2033	10,368
Cost per Vehicle Trip End	**$26.23**

PROJECTED DEMAND FOR GROWTH-RELATED PUBLIC WORKS IMPROVEMENTS

Section 6-1-960(5) of the South Carolina Development Impact Fee Act requires:

> *"a description of all system improvements and their costs necessitated by and attributable to new development in the service area, based on the approved land use assumptions, to provide a level of service not to exceed the level of service currently existing in the community or service area, unless a different or higher level of service is required by law, court order, or safety consideration."*

Section 6-1-960(7) of the South Carolina Development Impact Fee Act requires:

> *"the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years."*

To accommodate projected development, Tega Cay plans to build the Public Works facilities. Figure 45 demonstrates Public Works' growth-related needs, which are based on the development projections contained in Appendix A. Projected development generates a need for 4,281 square feet.

Figure 45: Growth-Related Need for Public Works Facilities

Level-of-Service			*Demand Unit*	*Unit Cost*
Residential	0.813	Square Feet	per Person	$138.24
Nonresidential	0.197		per Trip End	

Year		*Population*	*Nonres. Vehicle Trips*	*Residential Sq. Ft.*	*Nonresidential Sq. Ft.*	*TOTAL*
Base	2022	13,335	7,411	10,837	1,458	12,295
Year 1	2023	13,811	7,641	11,223	1,503	12,727
Year 2	2024	14,303	7,877	11,624	1,550	13,174
Year 3	2025	14,814	8,122	12,039	1,598	13,637
Year 4	2026	15,343	8,373	12,468	1,647	14,116
Year 5	2027	15,891	8,632	12,914	1,698	14,612
Year 6	2028	16,285	8,901	13,234	1,751	14,985
Year 7	2029	16,689	9,176	13,562	1,805	15,368
Year 8	2030	17,103	9,460	13,899	1,861	15,760
Year 9	2031	17,527	9,754	14,244	1,919	16,163
Year 10	2032	17,963	10,057	14,598	1,979	16,576
Ten-Year Increase		4,628	2,646	3,761	521	**4,281**
Growth-Related Expenditures:				**$519,903**	**$72,021**	**$591,785**

PROPOSED PUBLIC WORKS FEES

Figure 46 details the proposed maximum supportable Public Works impact fees in Tega Cay. Residential fees are derived from the average number of persons per housing unit and the total cost per person. Nonresidential fees are based on the average number of nonresidential vehicle trip ends per 1,000 square feet of floor area and the total cost per vehicle trip end.

Cost factors for Public Works facilities are summarized at the top of the figure. Also included in the cost factors is the cost of the Public Works portion of the Impact Fee Study, allocated based on the net increase in population and nonresidential vehicle trips through 2027. The cost of the study was spread out over five years because the City is required to update its impact fees every five years. The sum of these cost factors yields a cost per person of $115.71 and cost per vehicle trip of $26.44. The proposed fees are calculated by multiplying these costs by the persons per housing unit and trips per 1,000 square feet ratios, as discussed in Appendix A.

Figure 46: Proposed Fee Schedule for Public Works

Fee Component	Cost per Person	Cost per Vehicle Trip
Public Works Facilities	$112.88	$26.23
Development Impact Fee Study	$2.83	$0.21
TOTAL	**$115.71**	**$26.44**

Residential Development (per housing unit)				
Type	**Persons per Housing Unit**	**Proposed Fee**	**Current Fee**	*Increase (Decrease)*
Single-Family	2.86	**$331**	**na**	*$331*
Multi-Family	1.69	**$194**	**na**	*$194*

Nonresidential Development (per 1,000 square feet)					
Type	**Trips per 1,000 Sq. Ft.**	**Trip Rate Adjustment**	**Proposed Fee**	**Current Fee**	*Increase (Decrease)*
Industrial	4.75	50%	**$62**	**na**	*$62*
Commercial	37.01	33%	**$322**	**na**	*$322*
Office & Institutional	10.84	50%	**$143**	**na**	*$143*

PROJECTED REVENUE FROM PUBLIC WORKS IMPACT FEES

Revenue projections assume implementation of the proposed public works fees and that development over the next ten years is consistent with the Land Use Assumptions described in Appendix A. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. As shown in Figure 47, Public Works fee revenue is expected to generate appoximately $605,000 over the next ten years. Revenue exceeds costs due to rounding and truncating values in the calculations.

Figure 47: Capital Costs and Revenue for Public Works

Fee Component	Growth Share
Facilities	$591,884
Development Impact Fee Study	$9,043
Total Expenditures	**$600,927**

		Single-Family	Multi-Family	Industrial	Commercial	Office & Institutional
		$331 per Unit	$194 per Unit	$62 per KSF	$322 per KSF	$143 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF
Base	2022	4,420	336	86	471	269
1	2023	4,579	348	89	485	278
2	2024	4,744	361	92	500	286
3	2025	4,915	374	94	516	295
4	2026	5,092	387	97	532	304
5	2027	5,275	401	100	548	314
6	2028	5,407	411	103	565	323
7	2029	5,542	421	107	583	333
8	2030	5,681	432	110	601	344
9	2031	5,823	443	113	619	354
10	2032	5,968	454	117	639	365
10-year Increase		1,548	118	31	168	96
Projected Revenue		**$512,441**	**$22,892**	**$1,922**	**$54,098**	**$13,742**

Projected Revenue	**$605,095**
Total Expenditures	**$600,927**

CAPITAL IMPROVEMENT SCHEDULE

Section 6-1-960(9) of the South Carolina Development Impact Fee Act requires:

> *"a schedule setting forth estimated dates for commencing and completing construction of all improvements identified in the capital improvements plan."*

Figure 48 lists the capacity-related projects the City of Tega Cay has planned for the next ten years. Capital improvements which do not have set timelines but instead occur as need arises are not included in the schedule.

Figure 48: Capital Improvement Schedule

CIP Component	Improvement	Acquisition / Completion Year	Cost
Parks & Recreation	Catawba Park improvements	2022	$14,500,000
Parks & Recreation	Tennis/Pickleball Facility	2023-2028	$1,200,000
Parks & Recreation	Windhaven Park	2023-2028	$950,000
Police	Police station Expansion	2025-32	$1,350,000
Police	Records/Dispatch Mgt Software	2023-25	$200,000
Fire	Fire Apparatus	2023-32	$400,000
Fire	Fire Station Expansion	2025-32	$1,510,000
Public Works	Operations Center Expansion	2023-2028	$1,600,000
Public Works	Mulching Facility	2023-2028	$750,000
Water	500,000 gallon storage tank	2023-2028	$1,500,000
Wastewater	Sewer lift/pump station upgrades	2024-2026	$625,000
Wastewater	Vacuum Jetter Truck	2025-2027	$500,000

Source: City of Tega Cay

APPENDIX A – LAND USE ASSUMPTIONS

INTRODUCTION

The City of Tega Cay, South Carolina, retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate development impact fees. Base year estimates and projections of population, housing units, jobs, and nonresidential square footage in this document provide the foundation for the development impact fee study. To evaluate demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on demand indicators by type of housing unit, jobs and floor area by type of nonresidential development. These metrics (explained further below) are the service units and demand indicators used in the development impact fee study.

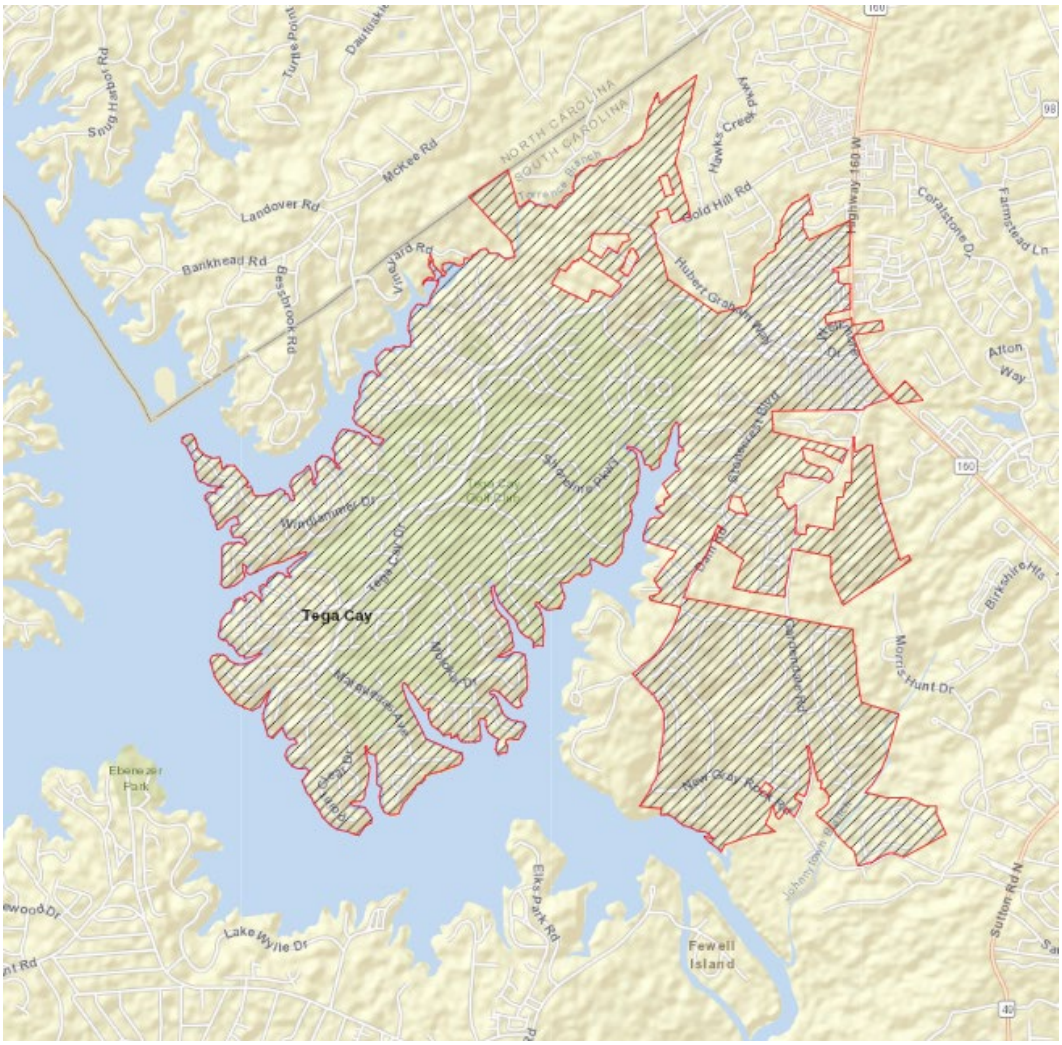
Development impact fees are based on the need for growth-related improvements. Demographic data and growth projections are used to demonstrate proportionality and to identify the potential need for future infrastructure. Demographic data reported by the U.S. Census Bureau, and data provided by Tega Cay staff, are used to calculate base year estimates and annual projections for a 20-year horizon (with a 10-year interval). Development impact fee studies typically project to 10 to 20 years,[3] with the expectation that fees will be updated every three to five years.

SERVICE AREA

The estimates and projections of residential and nonresidential development herein reflect the area within the municipal boundaries of the City of Tega Cay. The map below depicts the City's boundaries, outlined in red, which for the purposes of this study shall coincide with the service area boundaries.

[3] South Carolina Development Impact Fee Act, Section 6-1-960 (B)(7): *the projected demand for system improvements required by new service units projected over a reasonable period of time not to exceed twenty years.*

Figure 49. City of Tega Cay Municipal Boundary/Service Area



RESIDENTIAL DEVELOPMENT

Incorporated in 1982, Tega Cay's population at the U.S. Census Bureau's 1990 Census was 3,016. By the 2020 Census, the population had grown to almost 13,000, reflecting a fourfold increase. Recent estimates and future projections of residential development are detailed in this section, including housing units by type.

Current Residential Estimates

In 2010 the U.S. Census Bureau transitioned from the traditional long-form questionnaire to the American Community Survey (ACS), which is less detailed and has smaller sample sizes. As a result, Census data now has more limitations than before. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For impact fees in Tega Cay, "single family" residential includes both detached units and townhouses that share a common sidewall but are

constructed on an individual parcel of land. The "multi-family" category includes all structures with two or more units.

According to the Census Bureau, a household is a housing unit that is occupied by year-round residents. Development impact fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. When persons per housing unit are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household are used in the fee calculations, the development fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards.

TischlerBise recommends that development impact fees for residential development in the City of Tega Cay be imposed according to year-round residents per housing unit. For the development fee calculations, TischlerBise used the ACS results shown in Figure 50 to determine the number of persons per housing unit by type of residential unit in Tega Cay.

Figure 50. Persons per Housing Unit by Type

Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	*Housing Mix*	*Vacancy Rate*
Single Unit*	10,524	3,624	2.90	3,678	2.86	95%	1.5%
2+ Units	310	184	1.68	184	1.69	5%	0.0%
TOTAL	**10,834**	**3,808**	**2.85**	**3,862**	**2.81**		**1.4%**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

Current Population and Housing Unit Estimate

The City of Tega Cay tracks housing unit totals and provided TischlerBise with a current (2022) count and population estimate. Data is shown below and is current as of May 2022.

Figure 51. City of Tega Cay Current (2022) Housing Unit and Population Estimate

		*Base Year^*
		2022
Population		13,335
	PPHU	
Single Family	2.86	4,420
Multifamily	1.69	336
Total Housing Units		4,756

^ City of Tega Cay, SC

RESIDENTIAL PROJECTIONS

The City anticipates continued residential growth, given the approved and unbuilt housing units shown below in Figure 52. The figure shows approved subdivisions with anticipated completion dates. The number of units remaining is used in part to project future residential growth in the City.

Figure 52. Approved Residential Development

Project Name	Unit Type	Units Approved	Units Remaining	Expected Completion Year
Formerly Game On	Single Family (SF + TH)	160	160	2027
	MF	250	225	2027
Trinity Townes	Single Family (SF + TH)	167	101	2023
River Falls	Single Family (SF + TH)	136	136	2024
River Lakes Phase 3	Single Family (SF + TH)	31	1	2022
Serenity Point PDD	Single Family (SF + TH)	89	18	2022
The Courtyards	Single Family (SF + TH)	45	3	2022
Traditional Tega Cay	Single Family (SF + TH)	9	0	nd
Windell Woods	Single Family (SF + TH)	138	138	2030
Windhaven	Single Family (SF + TH)	335	261	2023
TOTAL		**1,360**	**1,043**	

Source: City of Tega Cay, SC

Anticipated short-term residential development (expected to be completed by 2027) generates an annual growth rate of 3.6 percent. This is used to project residential growth in the short-term. Beyond year 2027, the rate is reduced to 2.5 percent based on long-term assumptions from the approved subdivision list.

Population is projected using household sizes by type of residential unit (2.86 persons per housing unit for single family units; 1.69 persons per housing unit for multifamily units) from U.S. Census American Community Survey (see Figure 50). TischlerBise's projections for housing units and population through 2042 is shown in Figure 53 below—with summaries for 10-year and 20-year growth. Over the next ten years, Tega Cay is projected to grow by almost 1,700 units and over 4,600 residents. The twenty-year projection essentially doubles the 10-year projection.

Figure 53. Tega Cay Housing and Population Projections

												Multi-year interval>>			
		Base Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*20*		
		2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2042**	**10-Year Net Increase**	**20-Year Net Increase**
Population		13,335	13,811	14,303	14,814	15,343	15,891	16,285	16,689	17,103	17,527	17,963	22,959	4,628	9,624
Compound Annual Growth Rate		*3.60%*						*2.50%*							
Single Family	2.86	4,420	4,579	4,744	4,915	5,092	5,275	5,407	5,542	5,681	5,823	5,968	7,640	1,548	3,220
Multifamily	1.69	336	348	361	374	387	401	411	421	432	443	454	581	118	245
Total Housing Units		4,756	4,927	5,105	5,288	5,479	5,676	5,818	5,963	6,112	6,265	6,422	8,221	1,666	3,465
Annual Units															
Annual Single Family			159	165	171	177	183	132	135	139	142	146	186	1,548	3,220
Annual Multifamily			12	13	13	13	14	10	10	11	11	11	14	118	245
Annual Total Units			171	177	184	190	197	142	145	149	153	157	201	1,666	3,465
Cumulative New Units			*171*	*349*	*532*	*723*	*920*	*1,062*	*1,207*	*1,356*	*1,509*	*1,666*	*3,465*		

Source: City of Tega Cay, SC; TischlerBise

NONRESIDENTIAL DEVELOPMENT

In addition to data on residential development, the calculation of certain impact fees requires data on employment (number of jobs) and nonresidential square footage in the City of Tega Cay. Current estimates and future projections for jobs and nonresidential square footage are detailed in this section. TischlerBise uses the term "jobs" to refer to employment by place of work (as opposed to place of residence).

Employment

Figure 54 provides detail on employment trends since 2015 within Tega Cay as well as the city's Metropolitan Statistical Area (MSA) (Charlotte-Concord-Gastonia, NC-SC). Employment data is available for Tega Cay from U.S. Census OnTheMap Application through the year 2019. To estimate employment for 2022, TischlerBise compared the number of jobs in Tega Cay relative to the MSA from 2015 to 2019 and extrapolated out to 2022. As shown, it is assumed that Tega Cay has retained an average of .16 percent of the region's jobs over the past three years. This approach captures the decrease in employment due to the COVID-19 pandemic as well as the subsequent and ongoing recovery. As shown in Figure 54, the number of jobs in Tega Cay in 2022 is estimated at 2,039.

Figure 54. Employment Trends: City of Tega Cay and the Metropolitan Statistical Area (MSA)

						Estimated		
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
City of Tega Cay Jobs*	1,409	1,627	1,840	2,097	1,980	*1,918*	*1,990*	*2,039*
Annual Growth		*15.47%*	*13.09%*	*13.97%*	*-5.58%*	*-3.13%*	*3.75%*	*2.46%*
Charlotte-Concord-Gastonia, NC-SC, MSA Jobs^	1,110,900	1,150,000	1,179,800	1,208,100	1,238,100	1,198,800	1,243,800	1,274,600
Annual Growth		*3.52%*	*2.59%*	*2.40%*	*2.48%*	*-3.17%*	*3.75%*	*2.48%*
Tega Cay Share (%) of Region	0.127%	0.141%	0.156%	0.174%	0.160%	0.16%	0.16%	0.16%
			Rounded 3-Year Average		***0.1600%***			

** Source: U.S. Census, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Q2, 2015-2019).*

^ U.S. Bureau of Labor Statistics, "State and Area Employment, Hours, and Earnings," for Charlotte-Concord-Gastonia, NC-SC

Estimated number of jobs in Tega Cay in 2022 is used to estimate current nonresidential floor area. Employment is first grouped into general land use categories (Industrial, Retail, and Office / Institutional) using data for Tega Cay for the latest years for which data is available (2015-2019). An average from the years 2017-2019 is used to reflect trends as well as pre-pandemic conditions.

Figure 55. City of Tega Cay Employment by Type of Nonresidential Land Use

	2015	**2016**	**2017**	**2018**	**2019**	
Industrial	161	163	194	151	134	
Retail	758	760	843	1,124	927	
Office/Institutional	490	704	803	822	919	
Total	1,409	1,627	1,840	2,097	1,980	
						Rounded 3-Year Average
Industrial	11%	10%	11%	7%	7%	***8%***
Retail	54%	47%	46%	54%	47%	***49%***
Office/Institutional	35%	43%	44%	39%	46%	***43%***
Total	100%	100%	100%	100%	100%	***100%***

Source: U.S. Census, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Q2, 2015-2019).

Nonresidential square footage is estimated using a square foot per employee multiplier obtained from the Institute of Transportation Engineers (ITE 2021). For Industrial jobs, the ITE multiplier for Manufacturing was used. The multiplier for Retail is that for an average-size shopping center, and the multiplier for Office / Institutional is that for an average-sized office. Gray shading in Figure 56 below indicates the three nonresidential development prototypes used to estimate floor area in Tega Cay.

Figure 56. Employee and Building Area Ratios

ITE Code	Land Use Group	Demand Unit	Avg Wkdy Trip Ends Per Demand Unit[1]	Avg Wkdy Trip Ends Per Employee[1]	Employees Per Demand Unit	Square Feet Per Employee
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
254	Assisted Living	bed	2.60	4.24	0.61	na
254	Assisted Living	1,000 Sq Ft	4.19	4.24	0.99	1,012
310	Hotel	room	7.99	14.34	0.56	na
320	Motel	room	3.35	25.17	0.13	na
520	Elementary School	student	2.27	22.50	0.10	na
525	High School	student	1.94	21.95	0.09	na
540	Community College	student	1.15	14.61	0.08	na
550	University/College	student	1.56	8.89	0.18	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
620	Nursing Home	bed	3.06	3.31	0.92	na
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.08	3.37	3.29	304
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

The 2022 estimate of employment and square footage is shown in Figure 57.

Figure 57. City of Tega Cay Nonresidential Square Footage Estimate by Type of Nonresidential Land Use

		Base Year
		2022
Jobs	%*	
Industrial	8%	163
Retail	49%	999
Office/Institutional	43%	877
Total Jobs	100%	2,039

Nonresidential Square Footage	*Sq. Ft./Empl.*	
Industrial	528	86,127
Retail	471	470,581
Office/Institutional	307	269,168
Total Square Footage		556,708

** Average share from three year-period (pre-COVID-19) (2017-19)*
Sources: U.S. Census; City of Tega Cay, SC; Institute of Transportation Engineers; TischlerBise

Nonresidential Development Projections

Figure 58 provides projections of jobs and nonresidential square footage for Tega Cay for a 20-year period. Employment growth is projected based on a compound annual growth rate of 3.1 percent derived from estimated growth over the last 2 years. Ten-year projected growth is expected to produce over 700 jobs with an increase of around 25,000 to 30,000 nonresidential square footage on average per year.

Figure 58. Projected Jobs and Nonresidential Floor Area

												Multi-year interval>>			
		Base Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*20*		
		2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2042**	**10-Year Net Increase**	**20-Year Net Increase**
Jobs	%*														
Industrial	8%	163	168	173	179	184	190	196	202	208	215	221	300	58	137
Retail	49%	999	1,030	1,062	1,095	1,129	1,164	1,200	1,237	1,276	1,315	1,356	1,840	357	841
Office/Institutional	43%	877	904	932	961	991	1,021	1,053	1,086	1,119	1,154	1,190	1,615	313	738
Total Jobs	100%	2,039	2,102	2,167	2,235	2,304	2,375	2,449	2,525	2,603	2,684	2,767	3,755	728	1,716
Compound Annual Growth Rate	*3.1%*														
Nonresidential Square Footage	*Sq. Ft./Empl.*														
Industrial	528	86,127	88,797	91,550	94,388	97,314	100,331	103,441	106,648	109,954	113,362	116,877	158,604	30,749	72,477
Retail	471	470,581	485,169	500,209	515,716	531,703	548,185	565,179	582,700	600,763	619,387	638,588	866,578	168,007	395,997
Office/Institutional	307	269,168	277,513	286,116	294,985	304,130	313,558	323,278	333,300	343,632	354,284	365,267	495,675	96,099	226,507
Total Square Footage		556,708	573,966	591,759	610,104	629,017	648,516	668,620	689,348	710,717	732,750	755,465	1,025,182	198,757	468,474
Annual Nonresidential Square Footage															
Annual Industrial			2,670	2,753	2,838	2,926	3,017	3,110	3,207	3,306	3,409	3,514	4,769	30,749	72,477
Annual Retail			14,588	15,040	15,506	15,987	16,483	16,994	17,521	18,064	18,624	19,201	26,056	168,007	395,997
Annual Office/Institutional			8,344	8,603	8,870	9,145	9,428	9,720	10,022	10,332	10,653	10,983	14,904	96,099	226,507
Annual Total Nonres. Square Feet			25,602	26,396	27,214	28,058	28,928	29,824	30,749	31,702	32,685	33,698	45,729	294,855	694,981
Cumulative New Nonres. Square Feet			*25,602*	*51,998*	*79,212*	*107,270*	*136,197*	*166,022*	*196,771*	*228,473*	*261,157*	*294,855*	*694,981*		

** Average share from three year-period (pre-COVID-19) (2017-19)*
Sources: U.S. Census; City of Tega Cay, SC; Institute of Transportation Engineers; TischlerBise

FUNCTIONAL POPULATION

Both residential and nonresidential development increase the demand on City services and facilities. To calculate the proportionate share between residential and nonresidential demand on service and facilities, a functional population approach is used. A functional population approach is used to allocate costs of some types of facilities to residential and nonresidential development based on the activity of residents and workers in the city through a 24-hour day.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Tega Cay are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the City are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the City working. Inflow commuters are assigned 10 hours to nonresidential development. Based on the below functional population data (2019 is the latest available for U.S. Census OnTheMap employment data), residential development accounts for 83 percent of the functional population, while nonresidential development accounts for 17 percent. Detail is provided in Figure 59.

Figure 59. Tega Cay Functional Population

DEMAND UNITS IN 2019
Tega Cay, SC

					Demand Hours/Day	Person Hours	Proportionate Share
Residential							
Population	Tega Cay, SC	11,364					
Residents Not Working			5,101		20	102,020	
Workers Living in	Tega Cay, SC		6,263				
Residents Working in	Tega Cay, SC			279	14	3,906	
Residents Working outside of	Tega Cay, SC			5,984	14	83,776	
					Residential Subtotal	189,702	**83%**
Nonresidential							
Residents Not Working			5,101		4	20,404	
Jobs Located in	Tega Cay, SC		1,980				
Residents Working in	Tega Cay, SC			279	10	2,790	
Non-Resident Workers	Tega Cay, SC			1,701	10	17,010	
					Nonresidential Subtotal	40,204	**17%**
					TOTAL	229,906	**100%**

Source: U.S. Census (population); U.S. Census, OnTheMap Application and LEHD Origin-Destination Empl. Statistics, 2019.

SUMMARY

Figure 60 provides a summary of growth projections for the City of Tega Cay over a twenty-year time period. Growth projections will be used in the impact fee study to identify growth-related infrastructure needs as well as potential revenue from impact fees.

Figure 60. Summary of Tega Cay Growth Projections

												Multi-year interval>>			
	*Census**	*Base Year^*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*20*		
	2020	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2042**	**10-Year Net Increase**	**20-Year Net Increase**
Population	12,832	13,335	13,811	14,303	14,814	15,343	15,891	16,285	16,689	17,103	17,527	17,963	22,959	4,628	9,624
Single Family		4,420	4,579	4,744	4,915	5,092	5,275	5,407	5,542	5,681	5,823	5,968	7,640	1,548	3,220
Multifamily		336	348	361	374	387	401	411	421	432	443	454	581	118	245
Total Housing Units		4,756	4,927	5,105	5,288	5,479	5,676	5,818	5,963	6,112	6,265	6,422	8,221	1,666	3,465
Jobs															
Industrial		163	168	173	179	184	190	196	202	208	215	221	300	58	137
Retail		999	1,030	1,062	1,095	1,129	1,164	1,200	1,237	1,276	1,315	1,356	1,840	357	841
Office/Institutional		877	904	932	961	991	1,021	1,053	1,086	1,119	1,154	1,190	1,615	313	738
Total Jobs		2,039	2,102	2,167	2,235	2,304	2,375	2,449	2,525	2,603	2,684	2,767	3,755	728	1,716
Nonresidential Square Footage															
Industrial		86,127	88,797	91,550	94,388	97,314	100,331	103,441	106,648	109,954	113,362	116,877	158,604	30,749	72,477
Retail		470,581	485,169	500,209	515,716	531,703	548,185	565,179	582,700	600,763	619,387	638,588	866,578	168,007	395,997
Office/Institutional		269,168	277,513	286,116	294,985	304,130	313,558	323,278	333,300	343,632	354,284	365,267	495,675	96,099	226,507
Total Square Footage		556,708	573,966	591,759	610,104	629,017	648,516	668,620	689,348	710,717	732,750	755,465	1,025,182	198,757	468,474

** U.S. Census, Decennal Census 2020 (Population)*

^ City of Tega Cay, SC (Population)

Sources: U.S. Census; City of Tega Cay, SC; Institute of Transportation Engineers; TischlerBise

APPENDIX B – AFFORDABLE HOUSING STUDY

In accordance with South Carolina Development Impact Fee Act (Code of Laws of South Carolina, Title 6, Article 9, Chapter 1), this chapter estimates the effects of imposing an updated development impact fee on the affordability of housing in Tega Cay. The analysis will examine the current household income and housing expenses that burden an average household in the City. Next, the maximum development impact fee will be included in the cost burden analysis to identify the effect the proposed impact fee increase will have on affordable housing in the City.

South Carolina Development Impact Fee Act

Affordable housing is defined in South Carolina Development Impact Fee Act as housing to families whose incomes do not exceed 80 percent of the median income for the service area or areas within the jurisdiction of the governmental entity. The Act does not mention a preferred methodology to examine households whose income does not exceed 80 percent of the median income. Therefore, the analysis uses the U.S. Housing and Urban Development's (HUD) criteria that housing should be 30 percent or less of a household's income. The cost of housing is "moderately burdensome" if its cost burden is over 30 percent and "severely burdensome" if the ratio is over 50 percent.

PROPOSED DEVELOPMENT IMPACT FEE

The impact fees in Figure 61 are new development's fair share of the cost to provide additional capital improvements in Tega Cay. The City may adopt fees that are less than the amounts shown. However, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in levels of service. The housing affordability analysis assumes the full increase is implemented. If the City were to choose a lower impact fee amount, the results presented in this report would improve.

Figure 61. Proposed Impact Fees

Residential Impact Fees (per Housing Unit)							
Type	*Parks & Recreation*	*Police*	*Fire*	*Public Works*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
Single Family Unit	$5,019	$754	$1,820	$331	**$7,924**	**$6,676**	*$1,248*
Multi-family Unit	$2,956	$444	$1,072	$194	**$4,666**	**$3,839**	*$827*

Nonresidential Impact Fees (per 1,000 Sq Ft)							
Type	*Parks & Recreation*	*Police*	*Fire*	*Public Works*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
Industrial	$0	$226	$554	$62	**$842**	**$591**	*$251*
Commercial	$0	$1,163	$2,852	$322	**$4,337**	**$3,751**	*$586*
Office & Institutional	$0	$516	$1,265	$143	**$1,924**	**$1,466**	*$458*

Water & Sewer Impact Fees, All Development Types (per Meter)					
Meter Size (inches)	*Water*	*Wastewater*	*Maximum Fee*	Current Fee	*Increase (Decrease)*
0.75	$1,002	$1,209	**$2,211**	**$1,871**	*$340*
1.00	$1,674	$1,973	**$3,647**	**$3,087**	*$560*
1.50	$3,339	$3,865	**$7,204**	**$6,099**	*$1,105*
2.00	$5,345	$6,144	**$11,489**	**$9,728**	*$1,761*
3.00	$10,701	$12,230	**$22,931**	**$19,417**	*$3,514*
4.00	$16,719	$19,068	**$35,787**	**$30,304**	*$5,483*
6.00	$33,429	$38,055	**$71,484**	**$60,531**	*$10,953*

HOUSING STOCK

Listed in Figure 62, there are a total of 3,246 housing units in Tega Cay. Of the total, almost 99 percent are occupied. The majority (95 percent) of the housing stock in the City is single family units.

Figure 62. Tega Cay Housing Stock Characteristics

	Owner-Occupied		Renter-Occupied	
Type	**Persons**	**Households**	**Persons**	**Households**
Single Unit*	9,413	3,345	1,111	279
2+ Units	24	24	286	160
TOTAL	**9,437**	**3,369**	**1,397**	**439**

	Renter and Owner Combined						
Type	**Persons**	**Households**	**Persons per Household**	**Housing Units**	**Persons per Housing Unit**	***Housing Mix***	***Vacancy Rate***
Single Unit*	10,524	3,624	2.90	3,678	2.86	95%	1.5%
2+ Units	310	184	1.68	184	1.69	5%	0.0%
TOTAL	**10,834**	**3,808**	**2.85**	**3,862**	**2.81**	**100.0%**	**1.4%**

** Single Unit includes detached, attached, and mobile homes.*

Source: 2020: ACS 5-Year Estimates Detailed Tables

HOUSEHOLD INCOME

The purchasing power of Tega Cay residents to secure housing is represented by personal income. Personal income includes all wages, tips, and bonuses from employment, as well as retirement income earned from a pension plan or retirement account. In the analysis, household income represents all residents living in the housing unit, no matter the relationship. From the U.S. Census Bureau American Community Survey, in 2020 the median annual household income for ower- and renter-occupied households is shown below. Income in 2020 is inflated to 2022 values using CPI-U index.

Figure 63: Household Income in Tega Cay

Tenure	**Median Annual Hsehold Income (2020)**	**Median Annual Hsehold Income (2022)**	**Hsehold Income Factor**	**80% of Median Annual Income**	**Monthly Income**
Owner-occupied	$132,781	$152,546	80%	$122,037	**$10,170**
Renter-occupied	$125,236	$143,878	80%	$115,102	**$9,592**

Source: U.S. Census Bureau, 2020 American Community Survey 5-Year Estimates; U.S. Bureau of Labor Statistics CPI Calculator

Note: American Community Survey data represents information as of June, 2020. CPI calculator calculates median income to August 2022 dollars.

COST OF HOMEOWNERSHIP

The analysis uses the following categories to calculate the baseline cost of homeownership in the City: purchase price; mortgage payment; property tax; stormwater management fee; solid waste collection fee; water, sewer and electric utilities; telephone, cable and internet utilities; and homeowners insurance.

Purchase Price

The median home value is used to estimate the purchase price of a home. The American Community Survey estimates that the median value of a single family house in the City in 2020 was $358,000 (U.S. Census Bureau, 2020 American Community Survey 5-Year Estimates). Prices are inflated to 2022 and cross checked with a range of real estate market data for a 3- to 4-bedroom house (trulia.com; rocketmortgage.com). It is assumed that the current price reflects impact fees currently in place (City, School District, County).

Mortgage Payment

A conventional, fixed-rate 30-year mortgage is assumed to estimate monthly costs of principal and interest on a home loan. The down payment for a loan is assumed to be 20 percent of the purchase price ($450,000 x 20% = $91,709). The loan amount for the mortgage is determined by subtracting the down payment from the purchase price ($458,547 -$91,709 = $366,838). An interest rate of 5.00 percent is assumed for the home purchase based on recent range of interest rates. The monthly mortgage payment is estimated at $1,969.

Property Tax

It is assumed that housing affordability is based on permanent residency, so the assessment ratio in this analysis is 4 percent.[4] The assessed value of an average single family home is $18,342 ($458,547 x 4% = $18,342). The City of Tega Cay has a millage rate of 0.089 (city) along with County (.148) and school district debt service millage rate (.072) and is applied to the assesed value. Assumed in the analysis, annual property tax for the average valued home is $5,668, or $472 per month.

Stormwater Management Fee

The City of Tega Cay has a stormwater management fee of $108 per year for a housing unit, or $9 per month.

Solid Waste Collection Fee

The annual collection fee for curbside trash pickup and recycling services in Tega Cay is estimated to be $240 per year, or $20 per month.

Water, Sewer, and Electric Utilities

It is assumed that average daily water usage is 230 gallons per day. Based on current water and sewer rates, it is estimated that monthly fee for water is $52 and $67 for wastewater.

[4] See **https://www.yorkcountygov.com/150/Assessor**

Additionally, for an average household that uses 1,000 kilowatts of electricity per month, electricity is approximately $109 per month.

Telephone, Cable, and Internet Utilities

Comporium is a provider of telephone, cable, and internet in Tega Cay. From their website, the three services cost an estimated $150 per month.

Homeowner's Insurance

Homeowner's insurance provides protection for the home and is generally required when a home has a mortgage. The average cost for homeowner's insurance in the City is estimated to be .5 percent of the purchase price, or $190 per month.

Monthly Payment

The above homeownership costs total $3,038 per month. Monthly costs are listed at the end of this section in Figure 66.

COST OF RENTING

The cost of renting a home in Tega Cay is estimated with data provided from the U.S. Census Bureau. In 2019 (note: 2020 U.S. Census ACS data is unavailable for this table (Table B25064)), the median gross rent (including all utilities and rental insurance) in the City is estimated to be $1,453 per month. Costs are adjusted to 2022 values to $1,700 per month.

COST BURDEN ANALYSIS

The cost burden for affordable housing is measured as the ratio between monthly payments for housing (including property tax, fee, utilities, and insurance) and monthly gross household income. An analysis was conducted for owner-occupied units. The HUD-established cost burden ratio of 30 percent is used as the threshold to determine housing affordability.

Scenario 1: Baseline Conditions

Figure 64 summarizes the cost burden analysis for residents purchasing or renting a median valued home under current conditions, i.e., without the updated City of Tega Cay impact fee included. Based on the results, both owner-occupied and renter-occupied housing cost burdens are below the limit of affordability for households whose income is 80 percent of the City's median income. In other words, estimated average housing costs are affordable to a household at 80 percent area median income.

Figure 64. Scenario 1: Cost Burden Analysis without Proposed Updated Impact Fee

Occupancy	Monthly Income	Monthly Cost	Cost Burden
Owner-Occupied	$10,170	$3,038	**29.9%**
Renter-Occupied	$9,592	$1,711	**17.8%**

Scenario 2: Baseline Condition + Proposed Updated Impact Fee

In the second scenario, the proposed updated impact fee is included into the cost burden analysis to highlight the effects the fee has on housing affordability. Indicated in Figure 62, owner-occupied housing units are predominately single family units. Since the impact fee is a based on housing type, the owner-occupied housing unit will be assessed the increase in the fee amount for single family units ($1,588 ($1,248 proposed impact fee increase + $340 proposed utility fee increase) and the renter-occupied housing unit will be assessed the increase in the fee amount for multifamily units ($1,387 ($827 proposed impact fee increase + $340 proposed utility fee increase)).

The analysis takes a conservative approach and assumes the purchase price of the median home is raised by the increase in the impact fee. This ultimately increases the household's mortgage payment and property tax, see Figure 66. For renter-occupied housing units, the analysis assumes that the impact fee increase will be recouped by the landlord through an increase in monthly rent. The fee is assumed to be recouped over 30 years, thus increasing the monthly rent by $19.

Listed in Figure 65, the monthly costs for owners and renters increase with the proposed impact fee increase. The cost burden ratio for owner-occupied homes increases by 0.1 percentage points and for renter-occupied homes the cost burden ratio increases by 0.2 percentage points. Although the monthly cost burden increases, housing costs under Scenario 2 are still considered affordable (i.e., at or below 30 percent income) for households with an income of 80 percent of the median to purchase or rent in Tega Cay.

Figure 65. Scenario 2: Cost Burden Analysis with Proposed Impact Fee

Occupancy	Monthly Income	Monthly Cost	Cost Burden
Owner-Occupied	$10,170	$3,047	**30.0%**
Renter-Occupied	$9,592	$1,730	**18.0%**

CONCLUSION

The South Carolina Development Impact Fee Act requires preparation of a report that estimates the effect of imposing development impact fees on affordability of housing in the jurisdiction. To calculate the effect, a household that earns 80 percent of the median income should have a cost burden ratio of 30 percent or less for housing. **This analysis has concluded that the proposed increase to the City of Tega Cay's development impact fee would not create an additional burden large enough to exceed the cost burden criteria established by the U.S. Housing and Urban Development Department.** The analysis assumes that proposed impact fee increases are absorbed entirely by the home occupants. However, in some cases, impact fees result in a decrease in land values, shifting some of the cost burden from future homeowners and renters on to current land owners.

Figure 66: Cost of Homeownership

	Monthly Payment Calculation	
	Scenario 1 **Baseline Condition**	**Scenario 2** **Baseline Condition + Impact Fee Increase**
Purchase Price	$458,547	$460,135
Down Payment	$91,709	$92,027
Loan Amount	$366,838	$368,108
Loan Length (Years)	30	30
Loan Length (Months)	360	360
Yearly Interest Rate	5.00%	5.00%
Monthly Interest Rate	0.42%	0.42%
Monthly Payment	$1,969	$1,976
Property Tax - County (per month)	$226	$227
Property Tax - City (per month)	$136	$137
Property Tax - School Debt (per month)	$110	$110
Stormwater Management Fee	$9	$9
Solid Waste	$20	$20
Water, Sewer, Electric Utilities	$228	$228
Telephone, Cable, Internet Utilities	$150	$150
Homeowners Insurance	$190	$190
Monthly Cost	**$3,038**	**$3,047**