

Impact Fee Study

Prepared for:

City of Orange Beach, Alabama



Prepared by:

TischlerBise
Fiscal, Economic & Planning Consultants

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Executive Summary

TischlerBise was retained by the City of Orange Beach, Alabama to prepare this Impact Fee Study. Impact fees are one-time payments used to fund system improvements needed to accommodate new development. As documented in this report, the methods used to calculate impact fees in this study are intended to satisfy all legal requirements governing such fees, including provisions of the U.S. Constitution and Alabama Act 2006-300. TischlerBise evaluated impact fees for five types of public facilities: parks and recreation, fire, police, transportation and library.

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for each type of impact fee. Specific capital costs have been identified using local data and current dollars. The formula used to calculate each impact fee amount is diagrammed in a flow chart at the beginning of each section. Also, for each type of impact fee the report includes a summary table indicating the specific factors used to derive the amounts. These factors are referred to as “Level of Service” (LOS) standards. Park impact fees are based on residential demand only; fire, police and transportation impact fees are based on both residential and nonresidential demand.

METHODOLOGIES

There are three basic *methods* used to calculate impact fees. The **incremental expansion method** documents the current level of service for each type of public facility in both quantitative and qualitative measures. The intent is to use impact fee revenue to expand or provide additional facilities, as needed to accommodate new development, based on the current cost to provide capital improvements. The incremental expansion method is used to calculate all impact fees included in this study. Other methods include the plan-based method and the cost recovery method. The **plan-based method** is commonly used for public facilities that have adopted plans or engineering studies to guide capital improvements, such as utility systems. A third approach, known as the **cost recovery method**, is based on the rationale that new development is paying for its share of the useful life and remaining unused capacity of an existing facility.

A general requirement common to impact fee methodologies is the evaluation of credits. Two types of credits should be considered: **future revenue credits** and **site-specific credits**. Future revenue credits are necessary to avoid potential double payment situations arising from a one-time impact fee payment plus the payment of other revenues that may also fund growth-related capital improvements.

Future revenue credits are dependent upon the impact fee methodology used in the cost analysis. As new development will provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future principal payments on existing debt for public facilities. A credit is not necessary for interest payments if interest costs are not included in the impact fees. For Orange Beach, a future revenue credit is necessary for parks and recreation and police impact fees – due to outstanding debt for capacity enhancement projects.

The second type of credit is a site-specific credit for system improvements that have been included in the Impact Fee calculations. Policies and procedures related to site-specific credits for system improvements should be addressed in the City's Impact Fee Policy. However, the general concept is that developers may be eligible for site-specific credits or reimbursements *only if they provide system improvements that have been included in the impact fee calculations*. Project improvements normally required as part of the development approval process are not eligible for credits against impact fees.

IMPACT FEE CALCULATIONS

As noted above, TischlerBise calculated impact fees for five types of public facilities for Orange Beach: parks and recreation, fire, police, transportation and library. All types of development – residential and non-residential – create a demand for capital facilities. This analysis determines those capital needs – and the related costs – brought about by new development. The resulting impact fee maximum supportable amount represents each type of land uses' fair share of the capital cost for different improvements. For parks and recreation, residential development is the only type of land use that drives the need for additional facilities. The need for fire, police and transportation improvements, however, is brought about by both residential and non-residential development. Therefore, calculations for these impact fees are based on both residential and non-residential demand, with the resulting impact fee amount reflecting each type of development's fair share of related costs.

The following summarizes the methodologies used in each fee category. Also presented is the maximum supportable fee amount. Alabama's enabling legislation allows for impact fees not exceeding one (1%) percent of the estimated fair and reasonable market value of the new development after completion. The City of Orange Beach will calculate this 1% of value maximum for each new unit or development, as applicable. Due to this provision in the law, the City may be able to collect only a portion of the maximum supportable fee amounts presented here.

Parks and Recreation

The Parks and Recreation Impact Fee is allocated to residential development and motel rooms. The fee utilizes the plan-based method (for the Backcountry Trail) and the incremental expansion method for all other components. The impact fee is calculated based on household size (persons per room for motels) and capital cost per person for parkland, park facilities/amenities, Backcountry Trail, park vehicles and equipment and the park component of the impact fee study. There is outstanding debt for parkland and park facilities, so a credit is included for this component. The maximum supportable impact fee amounts for parks and recreation are: \$2,412 for a single family housing unit, \$1,932 for all other housing types and \$2,106 per motel room.

Fire

The Fire Impact Fee uses the incremental-expansion method to calculate new growth's contribution for future fire stations and vehicles and equipment. As Fire service is driven by residents and businesses, the impact fee is allocated to both new residential and nonresidential development. A future principal payment credit is not included as the City has no outstanding debt on its fire facilities or vehicles and equipment. The maximum supportable recommended impact fee amounts for Fire are: \$829 for single family housing units and \$664 for all other housing types. Non-residential impact fees vary with the specific use.

Police

The incremental expansion approach is used for all Police facilities and vehicles and equipment. As with Fire, Police service is driven by residents and businesses, so the impact fee is allocated to both new residential and nonresidential development. A future principal payment credit is included to account for outstanding debt for the construction of the Justice Center. The maximum supportable recommended impact fee amounts for Police are: \$243 for single family housing units and \$195 for all other housing types. Non-residential impact fees vary with the specific use.

Transportation

The incremental expansion method is used to calculate the City's transportation impact fee. The impact fee presented in this chapter provides the per development unit cost for the City's contribution to the expansion of State roads located within the City. As with police and fire, transportation demand is driven by residents and businesses, so the impact fee is allocated to both new residential and nonresidential development. A future principal payment credit is not included as the City does not plan to debt finance its contributions to State road expansions. The maximum supportable recommended impact fee amounts for Transportation are: \$1,859 for single family housing units and \$1,306 for all other housing types. Non-residential impact fees vary with the specific use.

Library

The Library Impact Fee is allocated to residential development and motel rooms. The fee utilizes the incremental expansion method. The impact fee is calculated based on household size (persons per room for motels) and capital cost per person for library facilities and collections. There is outstanding debt for construction of the library, so a credit is included for this component. The maximum supportable impact fee amounts for library are: \$229 for a single family housing, \$183 for all other housing types and \$200 for a motel room.

SUMMARY OF MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS

Figure 1 provides a schedule of the maximum supportable impact fee amounts for residential and non-residential development in Orange Beach.

The impact fees shown are for parks, fire, police, transportation and library. For a single family housing unit, the maximum supportable impact fee amount is \$5,573 and for all other housing units, \$4,280. Non-residential impact fees vary based on the use and/or size of the

development. The maximum supportable impact fee for a commercial/shopping center from 100,001-200,000 sq. ft. is \$6,705 per 1,000 sq. ft., while the maximum supportable impact fee for manufacturing is \$704 per 1,000 sq. ft. The maximum supportable impact fee for a motel room is \$3,342.

Figure 1: Schedule of Maximum Supportable Impact Fees

Per Housing Unit							
	<i>Parks and Recreation</i>	<i>Fire</i>	<i>Police</i>	<i>Transportation</i>	<i>Library</i>	<i>Total</i>	
Single Family	\$2,412	\$829	\$243	\$1,859	\$229	\$5,573	
All Other Housing	\$1,932	\$664	\$195	\$1,306	\$183	\$4,280	
Per 1,000 Square Feet of Floor Area							
	<i>Parks</i>	<i>Fire</i>	<i>Police</i>	<i>Transportation</i>	<i>Library</i>	<i>Total</i>	
Com / Shop Ctr 10,000 SF or less	N/A	\$4,263	\$1,616	\$6,876	N/A	\$12,755	
Com / Shop Ctr 10,001-25,000 SF	N/A	\$3,609	\$1,368	\$5,822	N/A	\$10,798	
Com / Shop Ctr 25,001-50,000 SF	N/A	\$3,135	\$1,188	\$5,057	N/A	\$9,380	
Com / Shop Ctr 50,001-100,000 SF	N/A	\$2,618	\$992	\$4,223	N/A	\$7,834	
Com / Shop Ctr 100,001-200,000 SF	N/A	\$2,241	\$849	\$3,615	N/A	\$6,705	
Com / Shop Ctr 200,001-400,000 SF	N/A	\$1,904	\$722	\$3,072	N/A	\$5,699	
Office / Inst 10,000 SF or less	N/A	\$1,324	\$502	\$2,349	N/A	\$4,174	
Office / Inst 10,001-25,000 SF	N/A	\$1,072	\$406	\$1,902	N/A	\$3,380	
Office / Inst 25,001-50,000 SF	N/A	\$914	\$346	\$1,622	N/A	\$2,883	
Office / Inst 50,001-100,000 SF	N/A	\$779	\$295	\$1,383	N/A	\$2,457	
Office / Inst 100,001 - 200,000 SF	N/A	\$664	\$252	\$1,179	N/A	\$2,095	
Business Park	N/A	\$745	\$282	\$1,323	N/A	\$2,351	
Light Industrial	N/A	\$407	\$154	\$723	N/A	\$1,284	
Warehousing	N/A	\$290	\$110	\$514	N/A	\$914	
Manufacturing	N/A	\$223	\$85	\$396	N/A	\$704	
Per Room							
Motel		\$2,106	\$329	\$125	\$584	\$200	\$3,342

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Results are discussed in the report using one-and two-digit places (in most cases), 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).

All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of impact fees. One approach is to adjust for inflation in costs by means of an index like the one published by Marshall Swift or the Engineering News-Record. This index could be applied against the calculated impact fees. If cost estimates change significantly, the impact fees should be recalculated.

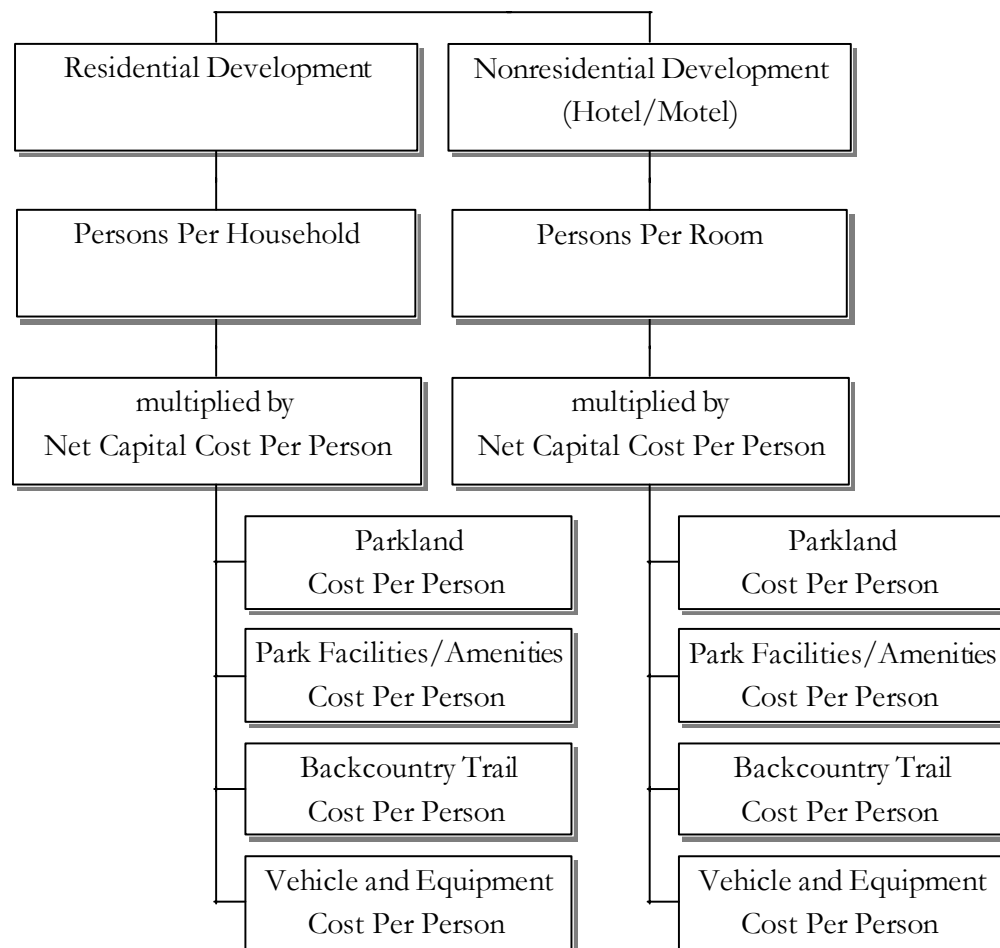
Parks and Recreation

METHODOLOGY

The components of this impact fee include parkland, park facilities/amenities, Backcountry Trail, and vehicles and equipment. The plan-based method is used to calculate the Backcountry Trail component of this impact fee. The incremental expansion methodology is used for all other impact fee components.

All capital costs have been allocated to residential development and hotel/motels. Standards have been shown on a per capita basis. Persons per household and persons per hotel/motel room are used to differentiate the impact fees by type of unit (see the Appendix for demographic information).

Figure 2: Parks and Recreation Impact Fee Methodology Chart



PARKLAND

The parkland component of the impact fee uses the incremental expansion methodology. Figure 3 provides an inventory of the City's parkland. The City parkland acreage considered in the analysis totals 148 acres, which equates to a level of service of 6.76 acres per 1,000 peak residents. Selected parks are not included in the analysis. For example, parks maintained by the City, but which are owned by the State, are not included. Robinson Island is not included as the City has significant loan payments remaining on the land. Additionally, the City's golf course is not included as it is a unique facility that is not expected to be expanded on an incremental basis.

The current acquisition cost for parkland is estimated at \$100,000 per acre. This estimate was provided by the nearby community of the City of Gulf Shores, representing the cost to purchase parkland in the inland areas. This results in a total parkland value at approximately \$14.8 million.

The demand base for parkland is the service peak population for parks and recreation, which includes household peak population and lodging visitor peak population (see Appendix). Current land cost per person is \$676.39.

Figure 3: Parkland Level of Service and Cost Standards

Parks*	Acres
Waterfront Park	9.5
Orange Beach Fitness Park	1.5
Harrison Park	0.5
Orange Beach Sportsplex	102.5
Orange Beach Community Center	3.2
Orange Beach Art Gallery	4.1
Senior Center/Library	6.8
Recreation/Aquatic/Tennis Center	18.1
Snook Park/Sea and Indian Museum	1.9
Total	148
Unit Price**	\$100,000
Units x Price	
Total Land	\$14,810,000

k Population in 2006 (Park Service Area)	21,896
Acres per 1,000 residents	6.76
Land Cost Per Acre	\$100,000
Land Cost Per Person	\$676.39

Source: Orange Beach Parks and Recreation. Orange Beach Golf Center, Robinson Island and State-owned parkland located in the City are not included.

***Source: City of Gulf Shores estimate of land acquisition cost for inland park.*

PARK FACILITIES/AMENITIES

The incremental expansion methodology is also used to derive the Park Facilities/Amenities cost component of the impact fee. Figure 4 provides an inventory of current park facilities/amenities. Current replacement cost is provided by City staff. Total facility/amenity value is estimated at \$11.1 million for a per capita cost of \$507.27.

Figure 4: Park Facilities/Amenities and Level of Service and Cost Standards

<i>Facility</i>	<i>Replacement Cost*</i>
Recreation Center	\$3,687,954
Recreation Center Playground	\$150,000
Community Center	\$981,075
Museum	\$140,204
Art Center	\$245,864
Senior/Adult Center	\$901,500
Waterfront Park Facilities	
North Restrooms	\$60,863
South Restrooms	\$60,863
Pavilions (7)	\$7,500
Pier	\$365,172
Lighting	\$34,779
Kids Park	\$300,000
Harrison Park	\$60,000
Catman Trail	\$180,000
Sportsplex	
S.B. Concessions	\$126,621
Storage/Equipment Bldg.	\$37,142
Lighting	\$422,066
Fencing	\$403,239
Bleachers	\$600,000
Sportsplex Soccer Concessions	\$123,600
Soccer Locker Rooms	\$146,775
Soccer Dugout	\$115,875
Baseball Concessions	\$146,775
Office/Break Room	\$115,875
Hurricane Shelter	\$60,000
Softball Locker Rooms	\$37,500
Irrigation Pump Houses	\$16,500
Heavy Equipment Storage	\$37,500
Score Boards	\$110,000
Acquatic Center	
Building	\$245,864
Pump House Pool and Fence	\$444,291
Tennis Center	
Pro-Shop	\$368,796
Courts and Fence	\$372,894
Total Cost	\$11,107,087

Peak Population in 2006 (Park Service Area) 21,896
Cost per Capita \$507.27

**Source: Orange Beach Parks and Recreation. Golf Course facilities and amenities not included.*

BACKCOUNTRY TRAIL

The City of Orange Beach plans to construct a Backcountry Trail, a 9.5 mile multi-use path that at completion will have six trailheads. A two-mile segment of the trail was paved in 2002. In 2007, the City plans to extend the trail and build bridges, bathrooms and a comfort station. In 2008, the City will construct storm shelters, parking areas, a bathroom and install benches, water fountains, trash receptacles and signage. The improvements will be paid for by the City as well as federal funds. For Fiscal Year 2007, federal funds will cover 36% of total project funds. As federal funds are not yet committed for Fiscal Year 2008, it is estimated that federal dollars will make up 36% of project costs in that year. Only the City's contribution to the project is considered as part of the impact fee calculation.

Cost standards for the planned improvements to the Backcountry Trail are shown in Figure 5. The City's contribution to total project costs are estimated at \$2,008,216.

The cost per person of \$60.15 is derived by multiplying the total cost (\$2,008,216) by 100 percent (as park facilities are 100% attributable to residential development), then dividing by 33,385 persons, the projected park service peak population in 2018. Capital costs are allocated to projected park service peak population in 2018 as the City estimates the facility will have adequate capacity for approximately 10 years into the future.

Figure 5: Backcountry Trail Level of Service and Cost Standards

	Year Planned for Construction	Total Construction Cost	Federal Contribution*	City Portion of Construction
				Cost
Backcountry Trail	2007	\$2,723,000	\$972,000	\$1,751,000
	2008	\$400,000	\$142,784	\$257,216
	Total	\$3,123,000	\$1,114,784	\$2,008,216

	Proportionate Share	2018 Demand Units	Cost per Demand Unit
Residential	100%	33,385 peak population	\$60.15

**Funds for 2007 reflect the City's contribution to the project. Federal funding makes up 36% of project costs in FY 2007. Total project costs for FY 2008 are estimated at \$400,000. Federal dollars are not currently committed for that year, so it is estimated that federal funding will cover 36% of costs in 2008.*

VEHICLES AND EQUIPMENT

The incremental expansion methodology is also used to derive the Park Vehicles and Equipment cost component of the impact fee. Figure 6 provides an inventory of current vehicles and equipment. Current replacement cost for park vehicles is provided by the City. Total vehicle and equipment value is estimated at \$448,000 for a per capita cost of \$20.46.

Figure 6: Park Vehicles and Equipment and Level of Service and Cost Standards

<i>Type of Vehicle/Equipment</i>	<i>Units in Service</i>	<i>Unit Replacement Value*</i>	<i>Replacement Value</i>
Mid Size Sedan	1	\$18,000	\$18,000
Full-Size Sedan	2	\$19,000	\$38,000
Pickup Truck	4	\$18,000	\$72,000
Van	4	\$20,000	\$80,000
Bus	2	\$120,000	\$240,000
TOTAL	13		\$448,000

Peak Population in 2006 (Park Service Area)	21,896
Vehicles and Equipment Per Person	0.0006
Park Vehicles and Equipment Cost Per Capita	\$20.46

CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON PARKS AND RECREATION IMPROVEMENTS

Because the City debt financed the purchase of parkland and the construction of park facilities, TischlerBise recommends a credit for future principal payments on outstanding debt. Orange Beach Finance staff provided the amount of projected outstanding park-related debt for capacity improvements and principal payment schedules.

Figure 7 provides the credit calculation based on the principal payments to be made by the City on the outstanding park-related debt. A credit is necessary since new development that pays impact fees will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person are discounted using a net present value formula based on the applicable discount rate.

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential property owners and hotel/motel occupants through the lodging tax. The credit amount of \$226.36 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. Park peak population projections are discussed in detail in the Appendix.

Figure 7: Credit for Future Payments - Parks and Recreation
GO Warrant Series 1998B
***purchase of Campbell property for parks, purchase of other park property for parks and administration.*

<i>Fiscal Year</i>	<i>Principal</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>
2006	\$115,000	21,896	\$5.25
2007	\$120,000	23,012	\$5.21
2008	\$125,000	23,888	\$5.23
2009	\$130,000	24,764	\$5.25
2010	\$135,000	25,787	\$5.24
2011	\$145,000	26,811	\$5.41
2012	\$150,000	27,834	\$5.39
2013	\$155,000	28,857	\$5.37
2014	\$160,000	29,880	\$5.35
2015	\$170,000	30,756	\$5.53
2016	\$175,000	31,632	\$5.53
2017	\$185,000	32,509	\$5.69
2018	\$185,000	33,385	\$5.54
TOTAL	\$1,950,000		\$70.00
Discount Rate			3.60%
Net Present Value			\$54.95

GO Warrant Series 1999 (\$3.75 million for parks)

<i>Fiscal Year</i>	<i>Total Principal</i>	<i>Principal for Parks</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>
2006	\$290,000	\$155,357	21,896	\$7.10
2007	\$305,000	\$163,393	23,012	\$7.10
2008	\$315,000	\$168,750	23,888	\$7.06
2009	\$330,000	\$176,786	24,764	\$7.14
2010	\$345,000	\$184,821	25,787	\$7.17
2011	\$360,000	\$192,857	26,811	\$7.19
2012	\$375,000	\$200,893	27,834	\$7.22
2013	\$390,000	\$208,929	28,857	\$7.24
2014	\$410,000	\$219,643	29,880	\$7.35
2015	\$430,000	\$230,357	30,756	\$7.49
2016	\$450,000	\$241,071	31,632	\$7.62
2017	\$470,000	\$251,786	32,509	\$7.75
2018	\$495,000	\$265,179	33,385	\$7.94
2019	\$515,000	\$275,893	34,261	\$8.05
TOTAL	\$5,480,000	\$2,935,714		\$103.42
Discount Rate				3.40%
Net Present Value				\$80.79

GO Warrant Series 2001B
***\$3.2 million for recreation center, sportsplex II, adult activity center & tennis center*

<i>Fiscal Year</i>	<i>Total Principal</i>	<i>Principal for Parks</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>
2006	\$210,000	\$151,172	21,896	\$6.90
2007	\$220,000	\$158,371	23,012	\$6.88
2008	\$225,000	\$161,970	23,888	\$6.78
2009	\$235,000	\$169,169	24,764	\$6.83
2010	\$245,000	\$176,367	25,787	\$6.84
2011	\$255,000	\$183,566	26,811	\$6.85
2012	\$270,000	\$194,364	27,834	\$6.98
2013	\$280,000	\$201,563	28,857	\$6.98
2014	\$295,000	\$212,361	29,880	\$7.11
2015	\$310,000	\$223,159	30,756	\$7.26
2016	\$325,000	\$233,957	31,632	\$7.40
2017	\$340,000	\$244,755	32,509	\$7.53
2018	\$360,000	\$259,152	33,385	\$7.76
2019	\$375,000	\$269,950	34,261	\$7.88
2020	\$395,000	\$284,348	35,138	\$8.09
2021	\$415,000	\$298,745	36,014	\$8.30
TOTAL	\$4,755,000			\$116.37
Discount Rate				3.00%
Net Present Value				\$90.62

TOTAL PARK CREDIT PER PERSON \$226.36

PARKS AND RECREATION IMPACT FEE STUDY

The City plans on updating its impact fees study every year to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing this portion of the study in the parks and recreation impact fee calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$16,600) is allocated to the projected increase in park service peak population over the next year. This results in an impact fee study cost per demand unit of \$14.87 per person (\$16,600/1,116 people).

PARKS AND RECREATION IMPACT FEE INPUT VARIABLES

Figure 8 shows level of service standards and cost factors for Orange Beach parks and recreation impact fees. Impact fees for parks are based on household size (i.e., persons per household) and are only charged to residential development. Level of service standards are based on current costs per person for parkland, park facilities, backcountry trail, park vehicles and equipment and the parks and recreation component of the impact fee study.

Figure 8: Parks and Recreation Impact Fee Input Variables

INPUT VARIABLES	Residential	Nonresidential
<i>Persons Per Household</i>		
Single Family	2.29	
All Other Housing	1.83	
<i>Persons Per Motel Room</i>		
Motel		2.00
<i>Level Of Service</i>		
<i>Park Land (Incremental-Expansion)</i>		
Park Land Cost per Person		\$676.39
<i>Park Facilities and Amenities (Incremental-Expansion)</i>		
Park Facilities and Amenities Cost per Person		\$507.27
<i>Backcountry Trail - City Contribution (Planned)</i>		
Backcountry Trail Cost per Person		\$60.15
<i>Park Vehicles and Equipment (Incremental-Expansion)</i>		
Park Vehicles and Equipment Cost per Person		\$20.46
<i>Impact Fee Study</i>		
Impact Fee Study Cost Per Person		\$14.87
Gross Capital Cost Per Person		\$1,279.15
Less Principal Payment Credit Per Person		(\$226.36)
Total Capital Cost per Person		\$1,052.79

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNT FOR PARKS AND RECREATION

Figure 9 contains a schedule of maximum supportable Parks and Recreation impact fees for Orange Beach. The amounts are calculated by multiplying the persons per household for each type of unit by the net capital cost per person. For example, for a single family unit, the

persons per household figure of 2.29 is multiplied by the net capital cost per person of \$1,052.79 for a parks and recreation impact fee amount of \$2,412. For motels, the amount is calculated by multiplying the persons per room by the net capital cost per person. The persons per room figure of 2.00 is multiplied by the net capital cost per person of \$1,052.79 for a parks and recreation impact fee amount of \$2,106.

Figure 9: Parks and Recreation Impact Fee Schedule

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS		Residential	Nonresidential
<u>Residential</u>		<u>Per Unit</u>	
Single Family		\$2,412	
All Other Housing		\$1,932	
<u>Nonresidential</u>			<u>Per Room</u>
Motel			\$2,106

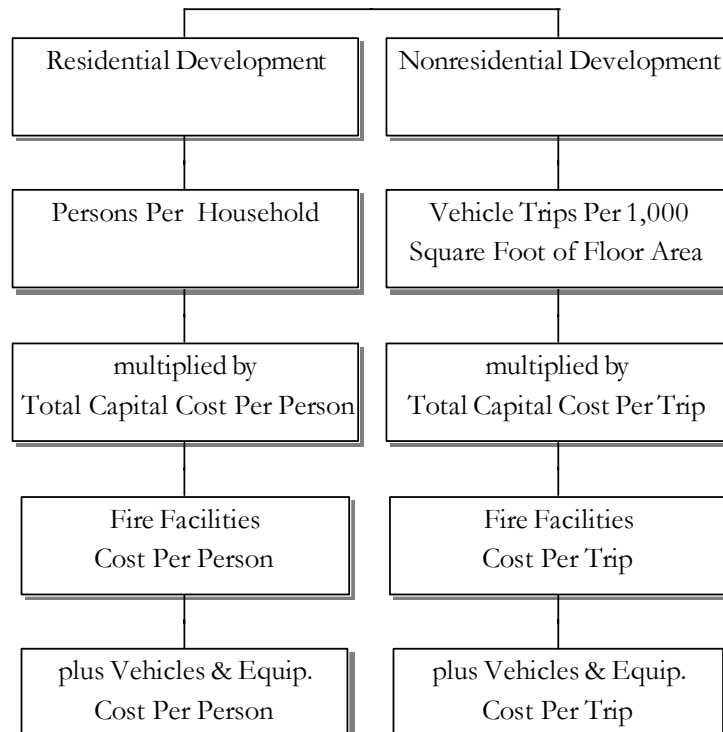
Fire

METHODOLOGY

The Fire Impact Fee uses an incremental expansion cost approach to determine the need for fire facilities and vehicles and equipment. The Orange Beach Fire Department serves both residential and non-residential development, providing fire protection and rescue services to residents and businesses.

As shown in Figure 10, this impact fee is allocated on a per capita basis for residential development. For nonresidential development, the impact fee methodology allocates the capital cost on a per nonresidential trip basis. TischlerBise recommends using nonresidential vehicle trips as the best demand nonresidential demand indicator for Fire facilities and vehicles and equipment. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for Fire service. If employees per thousand square feet were used as the demand indicator, impact fees would be too high for office/institutional development. If floor area were used as the demand indicator, impact fees would be too high for industrial development.

Figure 10: Fire Impact Fee Methodology



PROPORTIONATE SHARE FACTORS - FIRE

The Fire impact fee uses a functional population concept to allocate capital costs to residential and nonresidential development. The table distinguishes time at home (2/3 of a day, 16 hours) versus time at work (1/3 of a day, 8 hours) and accounts for commuting patterns in Orange Beach.

To estimate the residential share, person hours for individuals living in the City are calculated. The Census reported Orange Beach's labor force as 1,993 in 2000. This figure is subtracted from the 2000 year-round population estimate of 3,784, providing a resident, non-working population estimate of 1,791 persons. This group is estimated to be in the County 24 hours/day, bringing the person hours for this group to 42,984. Of those workers living in Orange Beach, the 2000 Census found that 1,051 go to work outside of Orange Beach. This figure is subtracted from the Census labor force figure of 1,993 to reach the number of City residents working in Orange Beach – 942. Each of these figures is multiplied by 16 demand hours/day representing the time these workers spend in the City outside of the 8 hour work day. This results in 31,888 person hours. Combined with the 42,984 person hours from resident non-workers, this brings the total residential person hours to 74,872.

To estimate the non-residential share, person hours for individuals working in the City is calculated. The Census estimated 3,194 jobs in the City in 2000. As there is some immigration of workers, the total number of Orange Beach residents working in Orange Beach (942) is subtracted from the total number of jobs (3,194) to reach the number of non-resident workers (2,252). The person hours for resident and non-resident workers in Orange Beach are multiplied by 8 hours, the typical work day, bringing the total number of non-residential person hours to 25,552. This brings the total number of person hours in the City in 2000 to 100,424. Of this, 74,872 is attributable to residential uses and 25,552 to non-residential uses. Thus, according to the functional population analysis, residential development accounts for 75% of the demand for Fire facilities and vehicles and equipment while nonresidential development accounts for 25% of the demand.

Figure 11: Proportionate Share Functional Population Analysis – Residential and Nonresidential

	<u>Demand Units in 2000</u>	<u>Demand Hours/Day</u>	<u>Person Hours</u>
Residential			
Year-Round Population (2000) ¹	3,784		
Residents Not Working	1,791	24	42,984
Workers Living in Orange Beach ²	1,993		
Residents Working in Orange Beach ³		942	16
Residents Working outside of Orange Beach		1,051	16
		Residential Subtotal	74,872
			75%
Nonresidential			
Jobs Located in Orange Beach (2000) ⁴	3,194		
Residents Working in Orange Beach ³		942	8
Non-Resident Workers		2,252	8
		Nonresidential Subtotal	25,552
			25%
		TOTAL	100,424

^{1,4} U.S. Census, PHC-T-40.

^{2,3} U.S. Census, Table P43.

FIRE FACILITIES

The incremental expansion methodology is used to derive the cost component of the impact Fee for the City's Fire Stations. Figure 12 provides an inventory of fire stations with square footage. Replacement cost per square foot is provided by the Orange Beach Fire Department.

To calculate the residential level of service, the total square footage is multiplied by 75% (based on proportionate share analysis shown in Figure 11) and then divided by the current peak population, resulting in 1.17 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 25% (see discussion above) and dividing by the number of nonresidential vehicle trips in the City in 2006, providing for .36 square feet per nonresidential trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$204.03 per person and \$62.55 per nonresidential trip.

Figure 12: Fire Station Level of Service and Cost Standards

<i>Facility</i>	<i>Sq. Ft.</i>	<i>Replace. Cost/Sq. Ft.</i>	<i>Replacement Cost</i>
Station One	22,600	\$175	\$3,955,000
Station Two	7,600	\$175	\$1,330,000
Station Three	1,500	\$175	\$262,500
TOTAL	31,700		\$5,547,500

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	75%	20,271 peak population	1.17	\$204.03
Nonresidential	25%	22,567 nonres trips	0.36	\$62.55

*Source: City of Orange Beach Fire Dept.

FIRE VEHICLES AND EQUIPMENT

The incremental expansion methodology is also used to derive the Fire Vehicles and Equipment cost component of the Impact Fee. Figure 13 provides an inventory of current vehicles and equipment. Current replacement cost for City fire vehicles and equipment is provided by the Orange Beach Fire Department.

To calculate the residential level of service, the total number of units is multiplied by 75% (based on Figure 10) and then divided by the current peak population, resulting in .0009 vehicles per person. Nonresidential level of service is calculated by multiplying the total number of vehicles by 25% (see Figure 11) and dividing by the number of nonresidential vehicle trips in the City in 2006, providing for .0003 vehicles per nonresidential trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$149.56 per person and \$45.85 per nonresidential trip.

Figure 13: Fire Vehicles and Equipment Level of Service and Cost Standards

<i>Type of Vehicle/Equipment</i>	<i>Units in Service</i>	<i>Unit Replacement Cost*</i>	<i>Total Replacement Cost</i>
Ambulance	1	\$120,000	\$120,000
Full-Size Sedan	2	\$19,000	\$38,000
SUV	5	\$23,000	\$115,000
Trailer	1	\$75,000	\$75,000
Pumper Truck	6	\$450,000	\$2,700,000
Ladder Truck	1	\$850,000	\$850,000
Pick-up Truck	7	\$18,000	\$126,000
Super Crew Truck	1	\$42,470	\$42,470
TOTAL	24		\$4,066,470

	Proportionate Share	2006 Demand Units	Vehicles Per Demand Unit	Cost per Demand Unit
Residential	75%	20,271 persons	0.0009	\$149.56
Nonresidential	25%	22,567 nonres trips	0.0003	\$45.85

*Source: City of Orange Beach Fire Dept.

FIRE IMPACT FEE STUDY

The City plans to update its impact fees every year to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing this portion of the study in the fire impact fee calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$15,600) is allocated to the projected increase in peak population and nonresidential trips over the next year. This results in an impact fee study cost per demand unit of \$8.42 per person and per nonresidential trip (\$15,600/1,852 people and nonresidential trips).

CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON FIRE IMPROVEMENTS

The City has no outstanding debt for fire station facilities or vehicles and equipment, so a credit component is not included for this fee category.

FIRE IMPACT FEE INPUT VARIABLES

Figure 14 shows level of service standards and cost factors for the Orange Beach fire impact fee. Impact fees for fire are based on household size (i.e., persons per housing unit) for residential uses and weekday vehicle trips per 1,000 square feet of floor area for non-residential uses. Level of service standards are based on costs per person and per nonresidential trip for fire facilities, vehicles and equipment and the fire component of the impact fee study.

Figure 14: Fire Impact Fee Input Variables

INPUT VARIABLES	Residential	Nonresidential
<i>Persons Per Household</i>		
Single Family	2.29	
All Other Housing	1.83	
<i>Weekday Vehicle Trip Ends per 1,000 Square Feet</i>		
Com / Shop Ctr 10,000 SF or less		152.03
Com / Shop Ctr 10,001 to 25,000 SF		110.32
Com / Shop Ctr 25,001-50,000 SF		86.56
Com / Shop Ctr 50,001-100,000 SF		67.91
Com / Shop Ctr 100,001-200,000 SF		53.28
Com / Shop Ctr 200,001-400,000 SF		41.80
Office / Inst 10,000 SF or less		22.66
Office / Inst 10,001-25,000 SF		18.35
Office / Inst 25,001-50,000 SF		15.65
Office / Inst 50,001-100,000 SF		13.34
Office / Inst 100,001-200,000 SF		11.37
Business Park		12.76
Light Industrial		6.97
Warehousing		4.96
Manufacturing		3.82
Lodging		5.63
<i>Trip Adjustment Factors</i>		
Com / Shop Ctr 10,000 SF or less		24%
Com / Shop Ctr 25,000 SF or less		28%
Com / Shop Ctr 25,001-50,000 SF		31%
Com / Shop Ctr 50,001-100,000 SF		33%
Com / Shop Ctr 100,001-200,000 SF		36%
Com / Shop Ctr 200,001-400,000 SF		39%
All Other Nonresidential Development		50%
<i>Cost Factors</i>	<u>Per Person</u>	<u>Per Trip</u>
Fire Facilities (Incremental Expansion)	\$204.03	\$62.55
Fire Vehicles and Equipment (Incremental Expansion)	\$149.56	\$45.85
Impact Fee Study	\$8.42	\$8.42
Total Capital Cost Per Demand Unit	\$362.02	\$116.82

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNT FOR FIRE

Figure 15 contains a schedule of the maximum supportable Fire impact fees for Orange Beach. The amounts are calculated by multiplying the persons per household for each type of housing by the total capital cost per person. For example, for a single family unit, the persons per household figure of 2.29 is multiplied by the total capital cost per person of \$362.02 for an impact fee amount of \$829. The calculation is repeated for all other housing types. For non-residential development, the weekday vehicle trips per 1,000 sq. ft. is multiplied by the appropriate trip adjustment factor and then by the total capital cost per trip. For example, for a commercial/shopping center less than 25,000 sq. ft., 110.32 trips per 1,000 sq. ft. is multiplied by a trip adjustment factor of 28% and then by \$116.82 per trip.

Trip adjustment factors are discussed in more detail in the Appendix. This results in a fire impact fee of \$3,609 per 1,000 sq. ft. for that nonresidential use. This calculation is repeated for the remaining non-residential categories.

Figure 15: Fire Impact Fee Schedule

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS			
<u>Residential</u>	<u>Per Housing Unit</u>		
Single Family	\$829		
Multi-Family	\$664		
<u>Nonresidential</u>		<u>Per 1,000 Sq. Ft.</u>	
Com / Shop Ctr 10,000 SF or less		\$4,263	
Com / Shop Ctr 10,001 to 25,000 SF		\$3,609	
Com / Shop Ctr 25,001-50,000 SF		\$3,135	
Com / Shop Ctr 50,001-100,000 SF		\$2,618	
Com / Shop Ctr 100,001-200,000 SF		\$2,241	
Com / Shop Ctr 200,001-400,000 SF		\$1,904	
Office / Inst 10,000 SF or less		\$1,324	
Office / Inst 10,001-25,000 SF		\$1,072	
Office / Inst 25,001-50,000 SF		\$914	
Office / Inst 50,001-100,000 SF		\$779	
Office / Inst 100,001-200,000 SF		\$664	
Business Park		\$745	
Light Industrial		\$407	
Warehousing		\$290	
Manufacturing		\$223	<u>Per Room</u>
Lodging			\$329

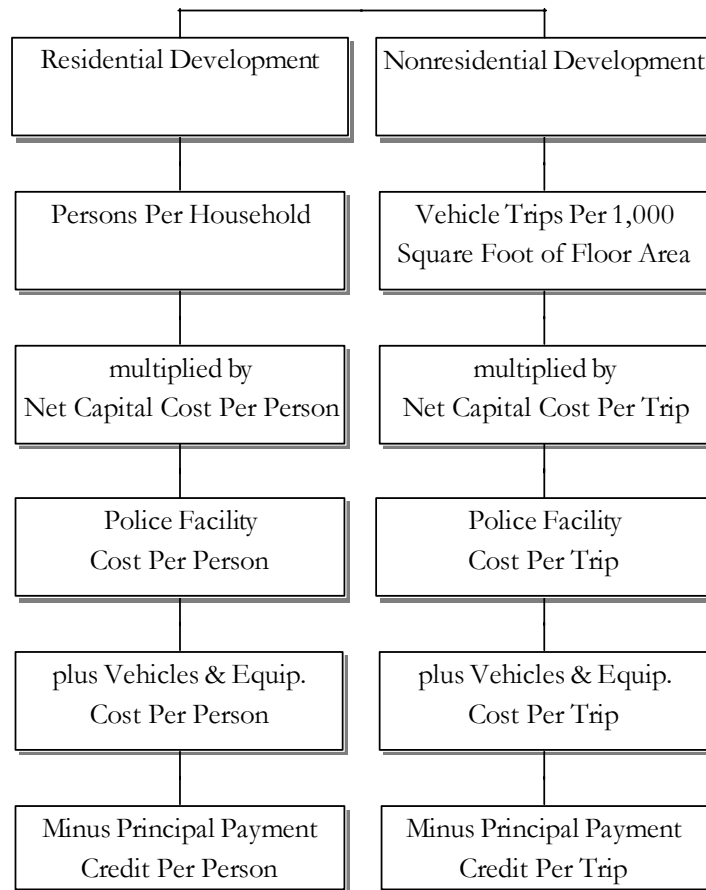
Police

METHODOLOGY

The Police Impact Fee uses an incremental expansion cost approach to determine the need for police facilities and vehicles and equipment. The Orange Beach Police Department serves both residential and non-residential development, providing protection to residents and businesses.

As shown in Figure 16, this impact fee is allocated on a per capita basis for residential development. For nonresidential development, the methodology allocates the capital cost on a per nonresidential trip basis. TischlerBise recommends using nonresidential vehicle trips as the best demand nonresidential demand indicator for police facilities and vehicles. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for police services. If employees per thousand square feet were used as the demand indicator, impact fees would be too high for office/institutional development. If floor area were used as the demand indicator, impact fees would be too high for industrial development.

Figure 16: Police Impact Fee Methodology



PROPORTIONATE SHARE FACTORS - POLICE

As with the Fire impact fee, the Police impact fee uses a functional population concept to allocate capital costs to residential and nonresidential development. The table distinguishes time at home (2/3 of a day, 16 hours) versus time at work (1/3 of a day, 8 hours) and accounts for commuting patterns in Orange Beach.

To estimate the residential share, person hours for individuals living in the City are calculated. The Census reported Orange Beach's labor force as 1,993 in 2000. This figure is subtracted from the 2000 year-round population estimate of 3,784, providing a resident, non-working population estimate of 1,791 persons. This group is estimated to be in the County 24 hours/day, bringing the person hours for this group to 42,984. Of those workers living in Orange Beach, the 2000 Census found that 1,051 go to work outside of Orange Beach. This figure is subtracted from the Census labor force figure of 1,993 to reach the number of City residents working in Orange Beach – 942. Each of these figures is multiplied by 16 demand hours/day representing the time these workers spend in the City outside of the 8 hour work day. This results in 31,888 person hours. Combined with the 42,984 person hours from resident non-workers, this brings the total residential person hours to 74,872.

To estimate the non-residential share, person hours for individuals working in the City is calculated. The Census estimated 3,194 jobs in the City in 2000. As there is some immigration of workers, the total number of Orange Beach residents working in Orange Beach (942) is subtracted from the total number of jobs (3,194) to reach the number of non-resident workers (2,252). The person hours for resident and non-resident workers in Orange Beach are multiplied by 8 hours, the typical work day, bringing the total number of non-residential person hours to 25,552. This brings the total number of person hours in the City in 2000 to 100,424. Of this, 74,872 is attributable to residential uses and 25,552 to non-residential uses. Thus, according to the functional population analysis, residential development accounts for 75% of the demand for Police facilities and vehicles and equipment while nonresidential development accounts for 25% of the demand.

Figure 17: Proportionate Share Functional Population Analysis – Residential and Nonresidential

	<u>Demand Units in 2000</u>	<u>Demand Hours/Day</u>	<u>Person Hours</u>
Residential			
Year-Round Population (2000) ¹	3,784		
Residents Not Working	1,791	24	42,984
Workers Living in Orange Beach ²	1,993		
Residents Working in Orange Beach ³		942	16
Residents Working outside of Orange Beach		1,051	16
		Residential Subtotal	74,872
			75%
Nonresidential			
Jobs Located in Orange Beach (2000) ⁴	3,194		
Residents Working in Orange Beach ³		942	8
Non-Resident Workers		2,252	8
		Nonresidential Subtotal	25,552
			25%
		TOTAL	100,424

^{1,4} U.S. Census, PHC-T-40.

^{2,3} U.S. Census, Table P43.

POLICE FACILITY

The incremental expansion methodology is used to derive the cost component of the impact fee for the City's police facility. The Justice Center is shared by the Police Dept. with the court system. Therefore, Figure 18 provides square footage and cost for the share of the Justice Center allocated to the Police Dept. Replacement cost is calculated using 2002 construction costs, adjusted for inflation using the *Engineering News-Record* Building Cost Index.

To calculate the residential level of service, the total square footage is multiplied by 75% (see Figure 16) and then divided by the current peak population, resulting in .81 square feet per person. Nonresidential level of service is calculated by multiplying the total square footage by 25% (see Figure 17) and dividing by the number of nonresidential trips in the City in 2006, providing for .25 square feet per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$101.34 per person and \$31.07 per nonresidential trip.

Figure 18: Police Facility Level of Service and Cost Standards

Facility	Sq. Ft.	Replacement Cost/Sq. Ft.	Replacement Cost*
Justice Center	22,000	\$125	\$2,755,434
TOTAL	22,000		\$2,755,434

	Proportionate Share	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	75 %	20,271 persons	0.81	\$101.34
Nonresidential	25 %	22,567 nonres trips	0.25	\$31.07

***Source: City of Orange Beach Police. The Justice Center is 29,000 sq. ft., and is shared with the Courts. The Police Dept. uses 22,000 sq. ft. of the facility, so the square footage and cost attributable to the Police Dept. is reflected above. Original construction cost (2002) adjusted for inflation using ENR Building Cost Index.*

POLICE VEHICLES AND EQUIPMENT

The incremental expansion methodology is also used to derive the Police Vehicles and Equipment cost component of the Police impact fee. Figure 19 provides an inventory of current police vehicles and equipment. Current replacement cost for police vehicles and equipment is provided by the Orange Beach Police Dept.

To calculate the residential level of service, the total number of units is multiplied by 75% (see Figure 17) and then divided by the current peak population, resulting in .0015 vehicles per person. Nonresidential level of service is calculated by multiplying the total number of vehicles by 25% (see Figure 17) and dividing by the number of nonresidential vehicle trips in the City in 2006, providing for .0005 vehicles per trip. To determine cost factors, the calculation is repeated with the total cost, resulting in costs per demand unit of \$62.18 per person and \$19.06 per trip.

Figure 19: Police Vehicles and Equipment Level of Service and Cost Standards

Type of Vehicle/Equipment	Units in Service	Unit Replacement Cost*	Total Replacement Cost
Equipped Police Sedan	36	\$35,150	\$1,265,400
Vessels	2	\$203,000	\$406,000
ATVs	2	\$8,200	\$16,400
Bikes	2	\$1,400	\$2,800
TOTAL	42		\$1,690,600

	Proportionate Share	2006 Demand Units	Vehicles per Demand Unit	Cost per Demand Unit
Residential	75 %	20,271 persons	0.0015 persons	\$62.18
Nonresidential	25 %	22,567 nonres trips	0.0005 nonres trips	\$19.06

**Source: City of Orange Beach Police*

POLICE IMPACT FEE STUDY

The City plans to update its impact fees every year to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing this portion of the study in the impact fee calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$13,400) is allocated to the projected increase in peak population and nonresidential trips over the next year. This results in an impact fee study cost per demand unit of \$7.24 per person and per nonresidential trip (\$13,400/1,852 people and nonresidential trips).

CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON POLICE IMPROVEMENTS

Because the City debt financed the construction of the Justice Center, TischlerBise recommends a credit for future principal payments on outstanding debt. Orange Beach Finance staff provided the amount of outstanding police-related debt for capacity projects and principal payment schedules.

Figure 20 provides the credit calculation based on the principal payments to be made by the City on the outstanding police related debt. A credit is necessary since new development that will pay impact fees will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person and per nonresidential trip are discounted using a net present value formula based on the applicable discount rate.

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential and non-residential property owners. This allocation is made using the proportionate share discussed earlier in this chapter (75% to residential and 25% to non-residential). The credit amount of \$64.49 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. The subtraction is repeated with the per trip credit amount of \$13.09 to arrive at a net capital cost per nonresidential trip. Population and trip projections are discussed in detail in the Appendix.

Figure 20: Credit for Future Payments - Police
GO Warrant Series 1999
***\$1.5 million for police station, the remainder for parks and library*

<i>Fiscal Year</i>	<i>Total Principal</i>	<i>Principal for Police Station</i>	<i>Residential Share - of Principal (75%)</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>	<i>Nonresidential Share of Principal (25%)</i>	<i>Projected Nonres Trips</i>	<i>Payment/ Trip</i>
2006	\$290,000	\$62,143	\$46,331	20,271	\$2.29	\$15,812	29,060	\$0.54
2007	\$305,000	\$65,357	\$48,728	21,147	\$2.30	\$16,630	30,290	\$0.55
2008	\$315,000	\$67,500	\$50,325	22,024	\$2.29	\$17,175	31,521	\$0.54
2009	\$330,000	\$70,714	\$52,722	22,900	\$2.30	\$17,993	32,751	\$0.55
2010	\$345,000	\$73,929	\$55,118	23,776	\$2.32	\$18,810	33,981	\$0.55
2011	\$360,000	\$77,143	\$57,515	24,653	\$2.33	\$19,628	35,211	\$0.56
2012	\$375,000	\$80,357	\$59,911	25,529	\$2.35	\$20,446	36,441	\$0.56
2013	\$390,000	\$83,571	\$62,307	26,405	\$2.36	\$21,264	37,671	\$0.56
2014	\$410,000	\$87,857	\$65,503	27,282	\$2.40	\$22,354	38,901	\$0.57
2015	\$430,000	\$92,143	\$68,698	28,158	\$2.44	\$23,445	40,131	\$0.58
2016	\$450,000	\$96,429	\$71,893	29,034	\$2.48	\$24,535	41,362	\$0.59
2017	\$470,000	\$100,714	\$75,088	29,911	\$2.51	\$25,626	42,592	\$0.60
2018	\$495,000	\$106,071	\$79,082	30,787	\$2.57	\$26,989	43,822	\$0.62
2019	\$515,000	\$110,357	\$82,278	31,663	\$2.60	\$28,079	45,052	\$0.62
TOTAL	\$5,480,000	\$1,174,286	\$875,499		\$33.53	\$298,787	\$518,785	\$8.02
					Discount Rate		Discount Rate	
					Net Present Value	3.40%	Net Present Value	3.40%
						\$26.19		\$6.26

GO Warrant Series 2001B
**28% of principal allocated to police station, the remainder to parks.*

<i>Fiscal Year</i>	<i>Total Principal</i>	<i>Principal for Police</i>	<i>Residential Share - of Principal (75%)</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>	<i>Nonresidential Share of Principal (25%)</i>	<i>Projected Nonres Trips</i>	<i>Payment/ Trip</i>
2006	\$210,000	\$58,828	\$43,860	20,271	\$2.90	\$14,968	29,060	\$0.52
2007	\$220,000	\$61,629	\$45,948	21,147	\$2.91	\$15,681	30,290	\$0.52
2008	\$225,000	\$63,030	\$46,992	22,024	\$2.86	\$16,037	31,521	\$0.51
2009	\$235,000	\$65,831	\$49,081	22,900	\$2.87	\$16,750	32,751	\$0.51
2010	\$245,000	\$68,633	\$51,170	23,776	\$2.89	\$17,463	33,981	\$0.51
2011	\$255,000	\$71,434	\$53,258	24,653	\$2.90	\$18,176	35,211	\$0.52
2012	\$270,000	\$75,636	\$56,391	25,529	\$2.96	\$19,245	36,441	\$0.53
2013	\$280,000	\$78,437	\$58,480	26,405	\$2.97	\$19,958	37,671	\$0.53
2014	\$295,000	\$82,639	\$61,612	27,282	\$3.03	\$21,027	38,901	\$0.54
2015	\$310,000	\$86,841	\$64,745	28,158	\$3.08	\$22,096	40,131	\$0.55
2016	\$325,000	\$91,043	\$67,878	29,034	\$3.14	\$23,165	41,362	\$0.56
2017	\$340,000	\$95,245	\$71,011	29,911	\$3.18	\$24,234	42,592	\$0.57
2018	\$360,000	\$100,848	\$75,188	30,787	\$3.28	\$25,660	43,822	\$0.59
2019	\$375,000	\$105,050	\$78,321	31,663	\$3.32	\$26,729	45,052	\$0.59
2020	\$395,000	\$110,652	\$82,498	32,539	\$3.40	\$28,155	46,282	\$0.61
2021	\$415,000	\$116,255	\$86,675	33,416	\$3.48	\$29,580	47,512	\$0.62
TOTAL	\$4,755,000	\$1,332,031	\$993,108		\$49	\$338,924		\$9
					Discount Rate		Discount Rate	
					Net Present Value	3.00%	Net Present Value	3.00%
						\$38.30		\$6.83
					TOTAL POLICE CREDIT PER PERSON	\$64.49	PER TRIP	\$13.09

POLICE IMPACT FEE INPUT VARIABLES

Figure 21 shows level of service standards and cost factors for Police impact fees for Orange Beach. Impact fees for Police are based on household size (i.e., persons per household) and weekday vehicle trip ends per 1,000 square feet of floor area for non-residential development. Level of service standards are based on current costs per person and per nonresidential trip for police facilities, vehicles and equipment and the police component of the impact fee study.

Figure 21: Police Impact Fee Input Variables

INPUT VARIABLES	Residential	Nonresidential
Persons Per Household		
Single Family	2.29	
All Other Housing	1.83	
Weekday Vehicle Trip Ends per 1,000 Square Feet		
Com / Shop Ctr 10,000 SF or less		152.03
Com / Shop Ctr 10,001 to 25,000 SF		110.32
Com / Shop Ctr 25,001-50,000 SF		86.56
Com / Shop Ctr 50,001-100,000 SF		67.91
Com / Shop Ctr 100,001-200,000 SF		53.28
Com / Shop Ctr 200,001-400,000 SF		41.80
Office / Inst 10,000 SF or less		22.66
Office / Inst 10,001-25,000 SF		18.35
Office / Inst 25,001-50,000 SF		15.65
Office / Inst 50,001-100,000 SF		13.34
Office / Inst 100,001-200,000 SF		11.37
Business Park		12.76
Light Industrial		6.97
Warehousing		4.96
Manufacturing		3.82
Lodging		5.63
Trip Adjustment Factors		
Com / Shop Ctr 10,000 SF or less		24%
Com / Shop Ctr 10,001 to 25,000 SF		28%
Com / Shop Ctr 25,001-50,000 SF		31%
Com / Shop Ctr 50,001-100,000 SF		33%
Com / Shop Ctr 100,001-200,000 SF		36%
Com / Shop Ctr 200,001-400,000 SF		39%
All Other Nonresidential Development		50%
Cost Standards	<u>Per Person</u>	<u>Per Trip</u>
Police Facilities (Incremental Expansion)	\$101.34	\$31.07
Police Vehicles and Equipment (Incremental Expansion)	\$62.18	\$19.06
Police Impact Fee Study	\$7.24	\$7.24
Gross Capital Cost Per Demand Unit	\$170.76	\$57.37
Principal Payment Credit Per Demand Unit	(\$64.49)	(\$13.09)
Net Capital Cost Per Demand Unit	\$106.27	\$44.28

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNT FOR POLICE

Figure 22 presents a schedule of maximum supportable Police impact fees for Orange Beach. The amounts are calculated by multiplying the persons per household for each type of housing by the net capital cost per person. For example, for a single family unit, the persons per housing unit figure of 2.29 is multiplied by the net capital cost per person of \$106.27 for an impact fee amount of \$243. The calculation is repeated for all other housing types. For non-residential development, the average weekday vehicle trips per 1,000 sq. ft. is multiplied by the appropriate trip adjustment factor and then by the net capital cost per trip. For example, for a commercial/shopping center less than 25,000 sq. ft., 110.32 trips per 1,000 sq. ft. is multiplied by a trip adjustment factor of 28% and then by \$44.28 per nonresidential trip. Trip adjustment factors are discussed in more detail in the Appendix. This results in a police impact fee of \$1,368 per 1,000 sq. ft. This calculation is repeated for the remaining non-residential categories.

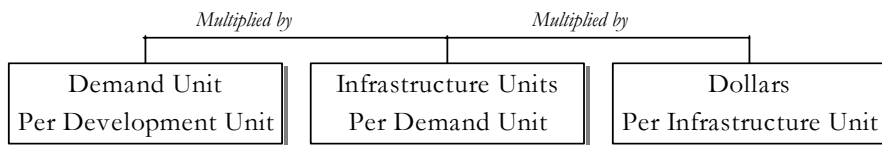
Figure 22: Police Impact Fee Schedule

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS			
<u>Residential</u>	<u>Per Housing Unit</u>		
Single Family	\$243		
All Other Housing	\$195		
<u>Nonresidential</u>		<u>Per 1,000 Sq. Ft.</u>	
Com / Shop Ctr 10,000 SF or less		\$1,616	
Com / Shop Ctr 10,001 to 25,000 SF		\$1,368	
Com / Shop Ctr 25,001-50,000 SF		\$1,188	
Com / Shop Ctr 50,001-100,000 SF		\$992	
Com / Shop Ctr 100,001-200,000 SF		\$849	
Com / Shop Ctr 200,001-400,000 SF		\$722	
Office / Inst 10,000 SF or less		\$502	
Office / Inst 10,001-25,000 SF		\$406	
Office / Inst 25,001-50,000 SF		\$346	
Office / Inst 50,001-100,000 SF		\$295	
Office / Inst 100,001-200,000 SF		\$252	
Business Park		\$282	
Light Industrial		\$154	
Warehousing		\$110	
Manufacturing		\$85	<u>Per Room</u>
Lodging			\$125

Transportation

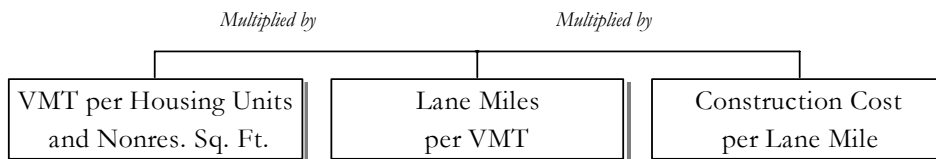
The City of Orange Beach transportation impact fee will use an incremental expansion methodology to determine transportation improvements necessary to accommodate new development. Growth is expected to impact most significantly those State roads that serve as arterials in the City. Capacity expansions to these roads are managed by the State, with the City contributing to the costs of road expansion. The impact fee presented in this chapter provides the per development unit cost for the City's contribution to the expansion of State roads.

Figure 23: General Formula for Incremental Expansion Methodology



The formula above is converted to a specific methodology for transportation impact fees, as diagrammed below. The three main components used in the calculation of the impact fee amount are: Vehicle Miles of Travel (VMT), lane miles, and cost factors.

Figure 24: Transportation Impact Fee Formula



This approach calculates how much infrastructure is needed to support new development. It calculates an average vehicle mile of travel (VMT) for each type of land use and determines how much it will cost per VMT to provide that amount of infrastructure, namely lane miles.

VEHICLE MILES OF TRAVEL

VTM is the product of the number of vehicle trips multiplied by the average trip length. Vehicle trips are discussed below. To derive average trip length in Orange Beach requires an inventory of current lane miles and a lane capacity standard. Each of these components is discussed in turn.

Vehicle Trips Associated with Development in Orange Beach

Vehicle trip generation rates are from the reference book Trip Generation (Institute of Transportation Engineers, 2003). Orange Beach's Transportation Impact Fees are based on average weekday vehicle trip ends. A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate the impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50%. As discussed further below, the impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Adjustment for Journey-To-Work Commuting

Residential development has a higher trip adjustment factor of 58% to account for commuters leaving Orange Beach for work (see calculation in Figure 25). According to the National Household Travel Survey (see Table 29, Federal Highway Administration, 2001) home-based work trips are typically 31% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). Also, Census 2000 data from Table P27 in Summary File 3 indicates that 53% of Orange Beach's workers travel outside the City for work. In combination, these factors ($0.31 \times 0.50 \times 0.53 = 0.08$) account for 8% of production trips. The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the journey-to-work commuting adjustment (8% of production trips) for a total of 58.17%.

Figure 25: Trip Adjustment for Journey to Work Commuting

Share of Home Based Trips for Work ¹	31%
Outbound Trips	50%
Workers Traveling Outside Orange Beach for Work ²	53%
Journey to Work Commuting Adj.	8%
Attraction Trips	50%
Journey to Work Commuting Adj.	8%
Residential Adjustment Factor	58.17%

¹ National Household Transportation Survey 2001 (Table 29).

² 2000 U.S. Census, Table P27.

Adjustment for Pass-by Trips

A simple factor of 50% has been applied to the office, public sector and goods production categories. The commercial/retail category has a trip factor of less than 50% because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. As documented in Trip Generation, there is an inverse relationship between shopping center size and pass-by trips. Therefore, appropriate trip adjustment factors have been calculated according to shopping center size. For this type of development, the trip adjustment factor is less than 50 percent because retail uses attract vehicles as they pass by. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For example, the ITE Manual indicates that on average 45% of the vehicles entering shopping centers under 25,000 square feet are passing by on the way to some other primary destination and 55% of the attraction trips have the shopping center as their primary destination. Therefore, the adjusted trip factor is 28% (0.55×0.50).

Figure 26: Commercial/Shopping Center Trip Rates and Pass-By Adjustments

Floor Area in thousands (KSF)	Commercial Pass-by Trips*	Commercial Trip Adj Factor**	Weekday - 2003 Data			
			Shopping Centers		General Office	
			(ITE 820)		(ITE 710)	
			Trip Ends	Rate/KSF	Trip Ends	Rate/KSF
10	52%	24%	1,520	152.03	227	22.66
25	45%	28%	2,758	110.32	459	18.35
50	39%	31%	4,328	86.56	782	15.65
100	34%	33%	6,791	67.91	1,334	13.34
200	29%	36%	10,656	53.28	2,275	11.37
400	23%	39%	16,722	41.80	3,879	9.70
800	18%	41%	26,239	32.80	6,615	8.27

Source: Trip Generation, Institute of Transportation Eng

* Based on data published by ITE in Trip Generation Handbook (2004), the best trendline correlation between pass-by trips and floor area is a logarithmic curve with the equation $((-7.6812 \cdot \ln(KSF)) + 69.293)$.

** To convert trip ends to vehicle trips, the standard adjustment factor is 50%. Due to pass-by trips, commercial trip adjustment factors are lower, as derived from the following formula $(0.50 \cdot (1 - \text{passby pct}))$.

The relationship between development units in Orange Beach over the next five years and travel demand is documented in the following two tables. Figure 27 summarizes the input variables to be used in the analysis.¹ The variables with light blue shading are ITE trip rates and adjusted factors. The variables with tan shading are factors for the National Household

¹ Trip rates used in this analysis are intended to be averages for prototypical development in the City. Actual traffic demand may vary according to specific land uses.

Travel Survey (NHTS) data (see the section below on Average Trip Length Adjustment by Type of Land Use for further discussion), and the yellow shaded average trip length is calculated by TischlerBise. Both are discussed below. The pink shaded variables were provided to TischlerBise by the City's engineering firm, Carter Burgess, Inc., and are discussed below as well.

Figure 27: Input Variables: Transportation Impact Fee

INPUT VARIABLES

SF Detached VTE per Unit	9.57
SF Attached VTE per Unit	5.86
All Other Housing VTE per Unit	6.72
Retail/Comm VTE/KSF*	110.32
Office Weekday VTE/KSF**	18.35
Public Sector VTE/KSF**	18.35
Goods Production VTE/KSF***	6.97
Lodging VTE/Room***	5.63
Retail/Comm Trip Adj Factor	28%
All Other Nonres Trip Adj	50%
Residential Trip Adj Factor	58%
Residential Trip Length	122%
Commercial Trip Length	68%
Other Nonres Trip Length	75%
Capacity Per Lane	8,925
Avg Miles/Trip	6.83
Cost per Lane-Mile	\$352,173

VTE = Vehicle Trip End

*Trip rate per 1,000 sf for 25,000 sf retail/commercial shopping center

**Trip rate per 1,000 sf for 25,000 sf office

***Trip rate per 1,000 sf for light industrial

Figure 28 shows projected travel demand based on the input variables shown. Development projections at the top of the figure are multiplied by the input variables from the previous table to yield average weekday travel demand on State roads located within the City of Orange Beach. The demographic data shown at the top of Figure 28 is discussed further in the Appendix. Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips, shown in the center, boxed, portion of the figure. For example, in the year 2009, the projected 3,499 single family detached housing units will produce 19,481 weekday trips ($3,499 \times 9.58 \times 58.17\% = 19,481$).

Figure 28: Projected Travel Demand and State Road Needs

	Year =>	Base	1	2	3	4	5
Orange Beach, AL		2005	2006	2007	2008	2009	2010
DEMAND DATA							
SF DETACHED UNITS		2,948	3,085	3,223	3,361	3,499	3,637
SF ATTACHED UNITS		532	557	582	607	632	657
ALL OTHER HOUSING UNITS		7,119	7,434	7,748	8,063	8,378	8,692
RETAIL/COMM KSF		580	606	633	659	685	711
OFFICE KSF		275	287	300	312	324	337
PUBLIC SECTOR KSF		47	49	51	53	55	57
GOODS PRODUCTION KSF		207	216	226	235	245	254
LODGING ROOMS		881	881	1,011	1,011	1,011	1,091
SFD TRIPS		16,409	17,177	17,945	18,713	19,481	20,249
SFA TRIPS		1,815	1,900	1,985	2,070	2,155	2,240
ALL OTHER HOUSING TRIPS		27,830	29,060	30,290	31,521	32,751	33,981
RETAIL/COMM TRIPS		17,922	18,732	19,542	20,351	21,161	21,971
OFFICE/INST TRIPS		2,520	2,634	2,748	2,862	2,976	3,090
PUBLIC SECTOR KSF		427	446	465	485	504	523
GOODS PRODUCTION TRIPS		722	754	787	820	852	885
LODGING TRIPS		2,480	2,480	2,846	2,846	2,846	3,070
TOTAL TRIPS		70,126	73,184	76,609	79,667	82,726	86,008
STATE ROAD VMT		470,662	491,921	513,179	534,437	555,695	576,953
STATE ROAD LN MI		52.70	55.1	57.5	59.9	62.3	64.6
ANL STATE ROAD LN MI			2.4	2.4	2.4	2.4	2.3
ANL STATE ROAD COST (CITY CONTRIBUTION)			\$845,000	\$845,000	\$845,000	\$845,000	\$810,000
LN MI PER 10,000 VMT		1.12	1.12	1.12	1.12	1.12	1.12

LANE MILES

Vehicular travel within Orange Beach requires a system of major and minor arterials, major and minor collectors, and local streets. The impact fee analysis is based solely on State arterial roads within the City of Orange Beach, and costs reflect the City's contribution to State road expansion projects. Based on data provided by the City's engineering firm, Carter Burgess, Inc., 52.76 lane miles of State arterials are located within the City of Orange Beach.

Figure 29: Alabama State Roads in the City of Orange Beach – Road Length and Lane Mile Summary

State Road	Miles	Lanes*	Lane Miles
AL 182	7.4	4	29.6
AL 161	1.72	4	6.88
AL 180	8.14	2	16.28
TOTAL	17.26	10	52.76

*Excludes turn lanes.

LANE MILES

The transportation impact fee is based on a lane capacity standard of 8,925 vehicles per lane, which is an average day volume for a four-lane divided arterial road operating at a level of service “D.”

AVERAGE TRIP LENGTH

The average trip length is determined through a series of iterations using spreadsheet software because the VMT calculations include the same adjustment factors used in the impact fee calculations (i.e., residential journey-to-work and commercial pass-by adjustments and average trip length adjustment by type of land use (see below)). Knowing current vehicle trips, lane-miles currently accommodating the existing travel and lane capacity, it is possible to derive the average trip length. TischlerBise determined the average trip length on State roads in Orange Beach to be 6.83 miles. The basis formula for calculating the average trip length is to multiply the lane miles by the capacity and divide by the number of trips.

AVERAGE TRIP LENGTH ADJUSTMENT BY TYPE OF LAND USE

The average trip length is weighted to account for trip length variation by type of land use. As document by the National Household Travel Survey (see Table 6 in the 2001 publication by the Federal Highway Administration), vehicle trips from residential development, for home-based work trips, social and recreation purposes, are approximately 122% of the average trip length. Conversely, shopping trips associated with commercial development are roughly 68% of the average trip length while other nonresidential development typically account for trips that are 75% of the average trip length.

COST ESTIMATE

The City’s contribution to State transportation projects is estimated at \$352,173 per lane mile. This cost is based on the Alabama Department of Transportation’s planned construction and right-of-way acquisition costs for the expansion of 2.3 miles of AL 161 from 3 lanes to 4 lanes divided, for a total of 4.6 lane miles ((5 lanes – 2 existing lanes = 3 new lanes) x 2.3 miles = 4.6 lane miles). Project costs total \$8.1 million (\$5.4 million construction and \$2.7 million right-of-way acquisition). This generates a total cost per new lane of capacity of \$1,760,869 (\$8.1 million / 4.6 miles = \$1,760,869). This City estimates that in the future it will be required to contribute 20% of the funding for State road projects in the City. This generates an estimated per lane mile cost for the City of \$352,173 (\$1,760,869 x 20% = \$352,173).

TRANSPORTATION IMPACT FEE STUDY

The City plans to update its impact fees every year to ensure the methodologies, assumptions, and cost factors used in the calculations are still valid and accurate. TischlerBise has included the cost of preparing this portion of the study in the impact fee calculations in order to create a source of funding to conduct this regular update. The cost of this component (\$17,800) is allocated to the projected increase in residential and non-residential vehicle trips over the next year. This results in an impact fee study cost per demand unit of \$5.20 per vehicle trip (\$17,800/3,424 vehicle trips).

CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON TRANSPORTATION IMPROVEMENTS

The City does not anticipate debt financing its contribution to State road improvements, so a credit component is not included for this fee category.

TRANSPORTATION INPUT VARIABLES

Figure 30 shows level of service standards and factors for transportation impact fees for the City of Orange Beach. Impact fees for transportation are based on average weekday vehicle trip ends by type of development, and appropriate adjustment factors as described above, and are calculated for both residential and nonresidential development. Level of Service standards are based on average trip length adjustment by type of trip, current construction and right-of way cost per lane mile, and the lane capacity standard as described in the previous sections and summarized below. The total capital cost per trip by type of development is calculated by multiplying average trip length by the trip length adjustment factor by the capital costs per lane mile, divided by the lane capacity, plus the per unit cost of the transportation portion of the impact fee study. An example of the calculation for residential development is as follows: $((6.83 \text{ state road average trip length} \times 122\% \text{ residential trip length adjustment}) \times \$352,173 \text{ cost per lane mile} / 8,925 \text{ trips at LOS D})) + \$5.20 \text{ impact fee study cost per trip} = \334.00 .

Figure 30: Transportation Input Variables

INPUT VARIABLES	Residential	Commercial/ Shopping Centers	Other Nonres
<u>Residential</u>			
<i>Weekday Vehicle Trips per Housing Unit</i>			
Single Family Detached	9.57		
All Other Housing Types	6.72		
<u>Nonresidential</u>			
<i>Weekday Vehicle Trips per 1,000 Square Feet</i>			
Com / Shop Ctr 10,000 SF or less		152.03	
Com / Shop Ctr 10,001 to 25,000 SF		110.32	
Com / Shop Ctr 25,001-50,000 SF		86.56	
Com / Shop Ctr 50,001-100,000 SF		67.91	
Com / Shop Ctr 100,001-200,000 SF		53.28	
Com / Shop Ctr 200,001-400,000 SF		41.80	
Office / Inst 10,000 SF or less			22.66
Office / Inst 10,001-25,000 SF			18.35
Office / Inst 25,001-50,000 SF			15.65
Office / Inst 50,001-100,000 SF			13.34
Office / Inst 100,001-200,000 SF			11.37
Business Park			12.76
Light Industrial			6.97
Warehousing			4.96
Manufacturing			3.82
Lodging			5.63
<i>Trip Adjustment Factors</i>	58%		50%
Com / Shop Ctr 10,000 SF or less		24%	
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr 200,001-400,000 SF		39%	
<i>Level of Service</i>			
Average Trip Length (miles)	6.83	6.83	6.83
Average Trip Length Adjustment	122%	68%	75%
Construction Cost Per Lane Mile (City's Contribution)	\$352,173	\$352,173	\$352,173
Lane Capacity (Vehicles)	8,925	8,925	8,925
Impact Fee Study	\$5.20	\$5.20	\$5.20
Total Capital Cost for an Average Trip Length	\$334.00	\$188.46	\$207.33

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS FOR TRANSPORTATION

Figure 31 shows the schedule of maximum supportable impact fee amounts for transportation in the City of Orange Beach. The amounts are calculated by multiplying the vehicle trip ends for each type of development by the trip adjustment factor by the total capital cost per trip. For example, for a single family detached unit, the vehicle trip rate of 9.57 is multiplied by the adjustment factor of 58.17% and then multiplied by the total capital cost of \$334.00 for an impact fee amount of \$1,859 per single family detached unit. Impact fees for nonresidential development are shown on a per square foot of floor area basis or per room for motels.

Figure 31: City of Orange Beach Maximum Supportable Transportation Impact Fees

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS				
<u>Residential</u>		<u>Per Housing Unit</u>		
Single Family Detached		\$1,859		
All Other Housing Types		\$1,306		
<u>Nonresidential - Commercial/Shopping Centers</u>			<u>Per 1,000 Sq. Ft.</u>	
Com / Shop Ctr 10,000 SF or less			\$6,877	
Com / Shop Ctr 10,001 to 25,000 SF			\$5,822	
Com / Shop Ctr 25,001-50,000 SF			\$5,057	
Com / Shop Ctr 50,001-100,000 SF			\$4,224	
Com / Shop Ctr 100,001-200,000 SF			\$3,615	
Com / Shop Ctr 200,001-400,000 SF			\$3,072	
<u>Other Nonresidential</u>			<u>Per 1,000 Sq. Ft.</u>	
Office / Inst 10,000 SF or less			\$2,349	
Office / Inst 10,001-25,000 SF			\$1,902	
Office / Inst 25,001-50,000 SF			\$1,622	
Office / Inst 50,001-100,000 SF			\$1,383	
Office / Inst 100,001-200,000 SF			\$1,179	
Business Park			\$1,323	
Light Industrial			\$723	
Warehousing			\$514	
Manufacturing			\$396	<u>Per Room</u>
Lodging				\$584

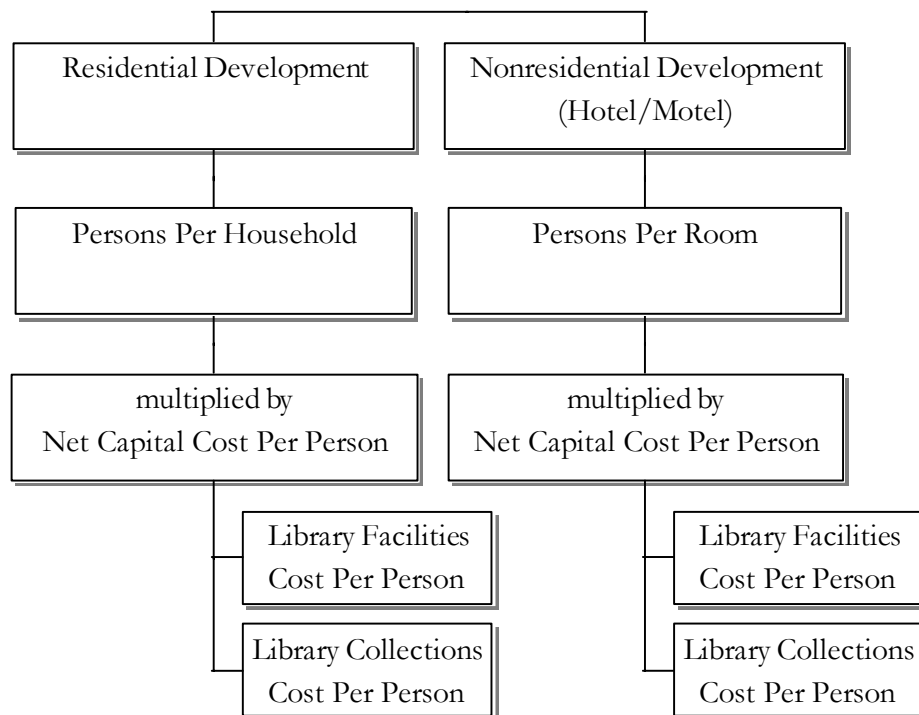
Library

METHODOLOGY

The components of this impact fee include library facilities and collections. The incremental expansion methodology is used for both components of this impact fee.

All capital costs have been allocated to residential development and hotels/motels. Standards have been shown on a per capita basis. Persons per household and persons per hotel/motel room are used to differentiate the impact fees by type of unit (see the Appendix for demographic information).

Figure 32: Library Impact Fee Methodology Chart



LIBRARY FACILITIES

The incremental expansion methodology is also used to derive the Library Facilities cost component of the impact fee. Figure 33 details the square footage and replacement cost for the City's library. Replacement cost is provided by the nearby City of Foley, Alabama, which is currently expanding its library. Total facility/amenity value is estimated at \$1,470,000 million for a per capita cost of \$67.14.

Figure 33: Library Facility Level of Service and Cost Standards

Facility	Sq. Ft.	Replacement Cost/Sq. Ft.*	Replacement Cost
Library	10,500	\$140	\$1,470,000
TOTAL	10,500		\$1,470,000

	2006 Demand Units	Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	21,896 Peak Population (Library Service Area)	0.48	\$67.14

*City of Foley's cost per sq. ft. to expand library, 2006.

LIBRARY COLLECTIONS

The incremental expansion methodology is also used to derive the Library Collections cost component of the impact fee. Figure 34 provides an inventory of current collection items, including books, CDs and DVDs. The average replacement cost per unit of new material is provided by the City. Total collection value is estimated at \$1.06 million for a per capita cost of \$48.79.

Figure 34: Library Collection Level of Service and Cost Standards

	# of units	Unit Price*	Total Replacement Cost
Collection (Printed Materials, DVDs, Books on CD)	36,839	\$29	\$1,068,331

TOTAL	36,839	\$29	\$1,068,331
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	2006 Demand Units	Materials Per Person	Cost per Person
Residential	21,896 Peak Population (Library Service Area)	1.68	\$48.79

Source: Orange Beach Library

CREDIT FOR FUTURE PRINCIPAL PAYMENTS ON LIBRARY IMPROVEMENTS

Because the City debt financed the construction of the City Library, TischlerBise recommends a credit for future principal payments on outstanding debt. Orange Beach Finance staff provided the amount of projected outstanding library-related debt for capacity improvements and principal payment schedules.

Figure 35 provides the credit calculation based on the principal payments to be made by the City on the outstanding library-related debt. A credit is necessary since new development that pays impact fees will also contribute to future principal payments on debt through property taxes. To account for the time value of money, annual principal payments per person are discounted using a net present value formula based on the applicable discount rate.

The amount of the debt has been allocated to reflect the portion of outstanding principal to be borne by residential property owners. The credit amount of \$16.16 per person will be subtracted from the gross capital cost per person to derive a net capital cost per person. Population projections are discussed in detail in the Appendix.

Figure 35: Credit for Future Payments - Library

GO Warrant Series 1999

***750K million for library, the remainder for parks and police*

<i>Fiscal Year</i>	<i>Total Principal</i>	<i>Principal for Library</i>	<i>Projected Peak Population</i>	<i>Payment/ Person</i>
2006	\$290,000	\$31,071	21,896	\$1.42
2007	\$305,000	\$32,679	23,012	\$1.42
2008	\$315,000	\$33,750	23,888	\$1.41
2009	\$330,000	\$35,357	24,764	\$1.43
2010	\$345,000	\$36,964	25,787	\$1.43
2011	\$360,000	\$38,571	26,811	\$1.44
2012	\$375,000	\$40,179	27,834	\$1.44
2013	\$390,000	\$41,786	28,857	\$1.45
2014	\$410,000	\$43,929	29,880	\$1.47
2015	\$430,000	\$46,071	30,756	\$1.50
2016	\$450,000	\$48,214	31,632	\$1.52
2017	\$470,000	\$50,357	32,509	\$1.55
2018	\$495,000	\$53,036	33,385	\$1.59
2019	\$515,000	\$55,179	34,261	\$1.61
TOTAL	\$5,480,000	\$587,143		\$20.68

Discount Rate	3.40%
Net Present Value	\$16.16

LIBRARY IMPACT FEE INPUT VARIABLES

Figure 36 shows level of service standards and cost factors for Orange Beach library impact fees. Impact fees are charged to residential development and motels and are based on household size (i.e., persons per household) for residential and persons per room for motels. Level of service standards are based on current costs per person for library facilities and collections.

Figure 36: Library Impact Fee Input Variables

INPUT VARIABLES	Residential	Nonresidential
<i>Persons Per Household</i>		
Single Family	2.29	
All Other Housing	1.83	
<i>Persons Per Motel Room</i>		
Motel		2.00
<i>Level Of Service</i>		
<i>Library Facility (Incremental-Expansion)</i>		
Library Facility Cost per Person		\$67.14
<i>Library Collections (Incremental-Expansion)</i>		
Library Collections Cost per Person		\$48.79
Gross Capital Cost Per Person		\$115.93
Less Principal Payment Credit Per Person		(\$16.16)
Net Capital Cost per Person		\$99.77

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNT FOR LIBRARY

Figure 37 contains a schedule of maximum supportable Library impact fees for Orange Beach. The amounts are calculated by multiplying the persons per household for each type of housing by the net capital cost per person. For example, for a single family unit, the persons per household figure of 2.29 is multiplied by the net capital cost per person of \$99.77 for a library impact fee amount of \$229. For motels, the amount is calculated by multiplying the persons per room by the net capital cost per person. The persons per room figure of 2.00 is multiplied by the net capital cost per person of \$99.77 for a library impact fee amount of \$200.

Figure 37: Library Impact Fee Schedule

MAXIMUM SUPPORTABLE IMPACT FEE AMOUNTS	Residential	Nonresidential
<u>Residential</u>	<u>Per Unit</u>	
Single Family	\$229	
All Other Housing	\$183	
<u>Nonresidential</u>		<u>Per Room</u>
Motel		\$200

Appendix – Demographics

As specified in Task 1 of our Work Scope, TischlerBise has prepared documentation on current demographic *estimates* and development *projections* that will be used in the Orange Beach Impact Fee Study. The following sections will review in detail the residential and non-residential demand factors that will be used to calculate impact fees for the City of Orange Beach.

PERSONS PER HOUSEHOLD

A differentiation by type of housing is necessary to make residential impact fees proportionate and reasonably related to the demand for public facilities. Persons per household is an important demographic factor that helps account for variations in service demand by type of housing. The best source of this data is the 2000 U.S. Census, Summary File 3.² The data for Orange Beach is shown in Figure A1 below. Two housing unit categories are recommended based on the demographic characteristics of Orange Beach: single-family and all other housing types. Single-family units have on average 2.29 persons per household (PPH) and all other housing types have an average PPH of 1.83.

² A Special Census by the U.S. Census Bureau was conducted for the City of Orange Beach in October, 2005. The 2005 Census provides total housing units and population in 2005. It does not include a breakdown of population by housing type. Therefore, persons per household from the 2000 U.S. Census is used to measure demand by housing type for this impact fee study.

Figure A1: Persons Per Household in Orange Beach

<i>Units in Structure</i>	<i>Renter & Owner Combined</i>			
	<i>Persons</i>	<i>Hsehlts</i>	<i>Hsg Units</i>	<i>PPH</i>
1-Detached	2,596	1,105	2,120	2.35
1-Attached	293	156	383	1.88
Two	39	21	49	1.86
3-4	83	41	78	2.02
5-9	14	11	135	1.27
10-19	109	57	407	1.91
20-49	18	10	737	1.80
50 or more	191	132	3,234	1.45
Mobile Homes	502	245	571	2.05
Other	11	10	20	1.10
Total SF3 Sample Data	3,856	1,788	7,734	2.16
100-Percent Data*	3,784	1,779	7,594	2.13
			Vacant HU	5,946
			Occupancy Rate	23.12%

Persons Per Household by Type - 2000

	<i>Persons</i>	<i>Hsehlts</i>	<i>Hsg Units</i>	<i>PPH</i>	<i>Hhld Mix</i>	<i>Hsg Mix</i>
Single Family	2,889	1,261	2,503	2.29	71%	32%
All Other	967	527	5,231	1.83	29%	68%
Total Less Group Quarters	3,856	1,788	7,734	2.16	100%	100%
Group Quarters	0					
TOTAL	3,856	1,779	7,594			

Notes to Tables

Source: 2000 U.S. Census, Summary File 3: Tables P1, P3, P9, H1, H3, H8, H30, H32, H33

2005 HOUSING UNIT ESTIMATE

To estimate housing units in 2005, TischlerBise reviewed the City's building permit data for residential construction over the past 5 years. During the 2000-2005 period, the City added 2,865 housing units, for an average of 478 housing units per year. This is shown in Figure A2.

Figure A2: Orange Beach Residential Building Permits, 2000-2005

	2000	2001	2002	2003	2004	2005	<i>Total New Units</i>	<i>Annual Average 2000-2005</i>
Single Family Detached and Attached	117	113	123	186	290	148	977	163
All Other Housing Types	469	250	101	536	520	12	1,888	315
Total	586	363	224	722	810	160	2,865	478

Added to the 7,734 housing units in the City in 2000 (shown in Figure A1), the total number of housing units in the City is estimated at 10,559 in 2005 (3,480 single family and 7,119 all other housing types).³ The City expects that future housing construction will keep pace with this trend, with 478 new housing units projected per year through 2020. Figure A3 presents these housing unit growth through 2020 by housing type.

Figure A3: Orange Beach Housing Unit Projections Through 2020

HOUSING UNITS	<i>Annual Increase</i>	<i>Five-Year Increments</i>							
		2005	2006	2007	2008	2009	2010	2015	2020
Single Family	163	3,480	3,643	3,806	3,969	4,131	4,294	5,108	5,923
All Other Housing	315	7,119	7,434	7,748	8,063	8,378	8,692	10,266	11,839
TOTAL	478	10,599	11,077	11,554	12,032	12,509	12,987	15,374	17,762

POPULATION ESTIMATES AND PROJECTIONS

Year-Round Population

To estimate year-round population, TischlerBise multiplied the number of housing units shown in Figure A3 by the 2000 Census year-round occupancy rate of 23% (shown in Figure A1). As shown in Figure A4, this generates the number of year-round households in the City. Next, persons per household by housing type (from Figure A1) is multiplied by year-round households by housing type to determine year-round population. For example, in 2005, 10,599 housing units is multiplied by 23% occupancy rate, generating a year-round household estimate of 2,470 (805 households in single-family housing and 1,646 households in all other housing). These figures are then multiplied by the 2000 persons per household for each housing type (shown in Figure A1), resulting in a total estimated year-round population in 2005 of 4,863 persons.

Figure A4: Year Round Population and Housing Unit Estimates and Projections

YEAR ROUND HOUSEHOLDS		<i>Five-Year Increments</i>									
	<i>Year-Round Occupancy</i>	2005	2006	2007	2008	2009	2010	2015	2020	2025	2030
Single Family		805	842	880	917	955	993	1,181	1,369	1,557	1,746
All Other Housing		1,646	1,719	1,791	1,864	1,937	2,010	2,373	2,737	3,101	3,464
TOTAL	23%	2,450	2,561	2,671	2,782	2,892	3,002	3,554	4,106	4,658	5,210

YEAR-ROUND POPULATION		<i>Five-Year Increments</i>									
	<i>Persons per Household</i>	2005	2006	2007	2008	2009	2010	2015	2020	2025	2030
Single Family	2.29	1,843	1,929	2,016	2,102	2,188	2,274	2,706	3,137	3,568	3,999
All Other Housing	1.83	3,020	3,153	3,287	3,420	3,554	3,687	4,355	5,022	5,690	6,357
TOTAL		4,863	5,083	5,303	5,522	5,742	5,962	7,060	8,159	9,258	10,356

³ The 2005 Special Census for the City of Orange Beach estimated 10,296 housing units as of October 2005. TischlerBise's estimate of 10,559 housing units in 2005 is 2.5% higher than that of the Special Census. The estimate represents housing units in the City as of December 2005 (based on residential building permits through December 2005).

Peak Population

The population of Orange Beach grows significantly in certain times of the year as residential units are used for seasonal, recreational or occasional use. This causes increased service demands on the City, requiring that it plan its services to meet this peak period of demand. Thus, calculations are also made of peak housing occupancy and peak household population. The Alabama Gulf Coast Convention and Visitors Bureau (ACGCVB) tracks condominium and hotel/motel occupancy on a monthly basis. According to the ACGCVB, July is the peak month for Orange Beach in terms of occupancy. In July 2004, the cities of Orange Beach and Gulf Shores had an average hotel/motel occupancy of 92.2%.⁴ Condominium occupancy is reported at a slightly lower 90.1% for July 2004. For the purposes of this study, TischlerBise will project peak population based on the 92.2% occupancy rate.

TischlerBise uses the July 2004 peak housing occupancy rate (discussed above) to estimate 2005 peak population and prepare projections for future years. To do this, TischlerBise multiplied the number of housing units shown in Figure A3 by the peak occupancy rate of 92.2%. As shown in Figure A6, this generates the number of peak households in the City. Next, persons per household by housing type (from Figure A1) is multiplied by peak households by housing type to determine peak population. For example, in 2005, 10,599 housing units is multiplied by 92.2% peak occupancy rate, generating a peak household estimate of 9,772 (3,209 single-family households and 6,564 all other housing). These figures are then multiplied by the 2000 persons per household for each housing type (shown in Figure A1), resulting in a total estimated peak population in 2005 of 19,395 persons. As the City must build capital facilities to meet this peak demand, the projected peak population for 2006 of 20,271 is used to calculate the City's levels of service for the various capital facilities included in the impact fee study.

Figure A5: Peak Population and Housing Unit Estimates and Projections

<u>PEAK HOUSEHOLDS</u>							<i>Five-Year Increments</i>				
	<i>Peak Occupancy</i>	2005	2006	2007	2008	2009	2010	2015	2020	2025	2030
Single Family		3,209	3,359	3,509	3,659	3,809	3,959	4,710	5,461	6,211	6,962
All Other Housing		6,564	6,854	7,144	7,434	7,724	8,014	9,465	10,916	12,366	13,817
TOTAL	92%	9,772	10,213	10,653	11,093	11,533	11,974	14,175	16,376	18,577	20,779

<u>PEAK POPULATION</u>											
	<i>Persons per Household</i>	2005	2006	2007	2008	2009	2010	2015	2020	2025	2030
Single Family	2.29	7,351	7,695	8,039	8,383	8,727	9,071	10,791	12,510	14,230	15,950
All Other Housing	1.83	12,044	12,576	13,109	13,641	14,173	14,706	17,367	20,029	22,691	25,353
TOTAL		19,395	20,271	21,147	22,024	22,900	23,776	28,158	32,539	36,921	41,303

Lodging Visitor Population

For parks and recreation and library facilities, demand is also driven by guests staying in the City's hotel/motel rooms. To determine population in these rooms, TischlerBise utilized information provided by the Alabama Gulf Coast Convention and Visitors Bureau (AGCCVB). This data indicates that there were 881 hotel/motel rooms in the City in 2005. According to the American Hotel and Lodging Association's *2005 Lodging Industry Profile*, the typical leisure room night is generated by two adults. To calculate peak population from

⁴ The occupancy rate from July, 2004 is used to calculate peak occupancy as the occupancy rate in July, 2005 was impacted by Hurricane Dennis.

these hotel rooms, 881 hotel/motel rooms is multiplied by the peak occupancy rate of 92.2% (discussed above). This generates a peak population from hotel/motel rooms for 2005 of 1,625 persons ((881 rooms) x (2 persons x 92.2%) = 1,625 persons).

The peak population used to calculate the cost per person for the parks and recreation and library fee categories includes both the City's household population and its lodging visitor population. This is shown in Figure A6. The Figure also reflects projected new hotel/motels and associated new lodging visitor population. The AGCCVB tracks planned hotel/motel developments approved by City Council. According to the Bureau, 130 new units are planned for 2007. Another 398 units are approved by Council, though developers have not committed to construction dates for these units. TischlerBise conservatively estimates that these units will be built in equal increments (80 rooms/year) over the 2010-2014 period.

Figure A6: Lodging Visitors Peak Population

						Five Year Increments			
Peak Lodging Visitor Population		2005	2006	2007	2008	2009	2010	2015	2020
Cumulative Rooms		881	881	1011	1011	1011	1091	1409	1409
Persons Per Room (Estimate)***	2								
Peak Occupancy Rate	92.2%								
Lodging Visitor Peak Population		1,625	1,625	1,864	1,864	1,864	2,011	2,598	2,598

						Five Year Increments			
Peak Population - Library and Parks		2005	2006	2007	2008	2009	2010	2015	2020
Lodging Visitor Peak Population		1,625	1,625	1,864	1,864	1,864	2,011	2,598	2,598
Household Peak Population		19,395	20,271	21,147	22,024	22,900	23,776	28,158	32,539
Total Peak Population - Library and Parks		21,019	21,896	23,012	23,888	24,764	25,787	30,756	35,138

NONRESIDENTIAL ESTIMATES AND PROJECTIONS

In addition to data on residential development, the calculation of impact fees requires data on nonresidential construction in Orange Beach. In lieu of current data on non-residential development in the City, TischlerBise estimated non-residential square footage using a 2005 employment estimate by ESRI Business Information Solutions. To convert the employment estimate to gross floor area of nonresidential development, average square feet per employee multipliers are used. These multipliers are also used to calculate the number of average weekday vehicle trips from nonresidential development in Orange Beach. Trips from hotel and lodging establishments are estimated based on rooms, of which there are 881 in Orange Beach in 2005, according to the Alabama Gulf Coast Convention and Visitors Bureau.

Figure A7 show square footage per employee by land use type and size. These multipliers are derived from national data published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). The multipliers used in the Orange Beach study reflect existing development in the City, anticipating that future development will be of similar scale, and are highlighted in grey.

Figure A7: Floor Area Per Employee and Nonresidential Trip Rates

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit**	Sq Ft Per Emp
Commercial / Shopping Center						
820	10K gross leasable area	1,000 Sq Ft	152.03	na	3.33	300
821	25K gross leasable area	1,000 Sq Ft	110.32	na	3.33	300
820	50K gross leasable area	1,000 Sq Ft	86.56	na	2.86	350
820	100K gross leasable area	1,000 Sq Ft	67.91	na	2.50	400
820	200K gross leasable area	1,000 Sq Ft	53.28	na	2.22	450
820	400K gross leasable area	1,000 Sq Ft	41.80	na	2.00	500
General Office						
710	10K gross floor area	1,000 Sq Ft	22.66	5.06	4.48	223
710	25K gross floor area	1,000 Sq Ft	18.35	4.43	4.15	241
710	50K gross floor area	1,000 Sq Ft	15.65	4.00	3.91	256
710	100K gross floor area	1,000 Sq Ft	13.34	3.61	3.69	271
710	200K gross floor area	1,000 Sq Ft	11.37	3.26	3.49	287
Industrial						
770	Business Park***	1,000 Sq Ft	12.76	4.04	3.16	317
151	Mini-Warehouse	1,000 Sq Ft	2.50	56.28	0.04	22,512
150	Warehousing	1,000 Sq Ft	4.96	3.89	1.28	784
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
Other Nonresidential						
720	Medical-Dental Office	1,000 Sq Ft	36.13	8.91	4.05	247
620	Nursing Home	bed	2.37	6.55	0.36	na
610	Hospital	1,000 Sq Ft	17.57	5.20	3.38	296
565	Day Care	student	4.48	28.13	0.16	na
530	High School	student	1.71	19.74	0.09	na
520	Elementary School	student	1.29	15.71	0.08	na
520	Elementary School	1,000 Sq Ft	14.49	15.71	0.92	1,084
320	Motel	room	5.63	12.81	0.44	na

* Trip Generation, Institute of Transportation Engineers, 2003.

** Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

*** According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

JOB & NONRESIDENTIAL SQUARE FOOTAGE ESTIMATES

TischlerBise obtained employment data for jobs located in the City in 2005 from ESRI Business Information Solutions. These estimates indicate that 3,745 persons were employed in the areas of commercial/retail, office, public sector and goods production in the City in 2005. Using the highlighted employment density multipliers in the far right column of Figure A7, the number of jobs for each category was converted into nonresidential square footage. As shown in Figure A8, TischlerBise estimates 902,000 square feet of nonresidential development in Orange Beach in 2005, excluding square footage for hotels and lodging establishments.

Hotel and lodging jobs are calculated on the basis of rooms. There were 881 hotel/motel rooms in the City in 2005 according to the Alabama Gulf Coast Convention and Visitors Bureau. Figure A7 shows that according to ITE standards, there are .44 employees per

lodging room. This equates to 387 hotel and lodging jobs in the City. Total estimated employment is estimated in Figure A8 (left column).

Figure A8: Job and Nonresidential Square Footage Estimates

	2005 Jobs*	Pct at Nonres Locations	Square Feet Per Employee**	2005 Nonres Floor Area (rounded)	Employees Per Room**	2005 Hotel/ Motel Rooms*
Commercial/Retail						
Retail Trade	1,514					
Services (50%)***	420					
Subtotal	1,934	47%	300	580,000		
Office						
Finance, Insurance and Real Estate	720					
Services (50%)***	420					
Subtotal	1,140	28%	241	275,000		
Public Sector						
Government	193					
Subtotal	193	5%	241	47,000		
Goods Production						
Agriculture & Mining	19					
Construction	226					
Manufacturing	20					
Transportation	100					
Electric, Gas, Water, Sanitary Services	93					
Wholesale Trade	20					
Subtotal	478	12%	433	207,000		
Lodging						
Hotels and Lodging	387	9%			0.44	881
TOTAL at Nonresidential Locations						
	4,132	100%		902,000		881

*Commercial, Office, Public Sector and Goods Production jobs from ESRI Business Information Solutions, 2005. Hotel and lodging job estimate based on data provided by the Alabama Gulf Coast Convention and Visitors Bureau on hotel/motel rooms in Orange Beach in 2005 (881 rooms). ITE's Trip Generation Manual estimates .44 jobs per room, resulting in a hotel and lodging employment estimate of 387 jobs in Orange Beach in 2005.

** ITE, *Trip Generation Manual*.

***Services includes the following industries: automotive services, motion pictures and amusements, health services, legal services, education institutions and libraries, and other services.

JOB & NONRESIDENTIAL SQUARE FOOTAGE PROJECTIONS

Figure A9 lists the projected number and type of jobs in Orange Beach as well as projected nonresidential square footage over the next fifteen years.

To project the future number of jobs in the City, TischlerBise assumed the 2005 ratio of nonresidential development to residential development would remain constant and the number of jobs would increase proportionally. The City's 2005 job to peak population ratio is .21 (4,132 jobs/19,395 persons). This ratio is used to project the future number of jobs in the City based on the peak population projections from Figure A5. Lodging employment projections are based on data provided by the Alabama Gulf Coast Convention and Visitors Bureau (see note).

Using the employment density multipliers from Figure A7, the projected number and type of future jobs are converted into nonresidential square footage projections in Figure A9.

Figure A9: Job and Nonresidential Square Footage Projections

		Base Year	Five-Year Increments						
Year =>		2005	2006	2007	2008	2009	2010	2015	2020
Jobs									
Peak Population		19,395	20,271	21,147	22,024	22,900	23,776	28,158	32,539
Jobs		4,132	4,319	4,506	4,692	4,879	5,066	5,999	6,933
% annual change			4.5%	4.3%	4.1%	4.0%	3.8%	3.2%	2.8%
Jobs: Peak Population Ratio		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Employment									
TOTAL Jobs in City	<i>Job mix</i>	4,132	4,319	4,506	4,692	4,879	5,066	5,999	6,933
Commercial/Retail	47%	1,934	2,021	2,109	2,196	2,284	2,371	2,808	3,245
Office	28%	1,140	1,192	1,243	1,295	1,346	1,398	1,655	1,913
Public Sector	5%	193	202	210	219	228	237	280	324
Goods Production	12%	478	500	521	543	564	586	694	802
Lodging*	9%	387	387	444	444	444	479	619	619
Hotel/Motel Units (Rooms)		881	881	1,011	1,011	1,011	1,091	1,409	1,409
Nonresidential Floor Area (1,000 SF)									
	<i>SF/Employee</i>								
Commercial/Retail	300	580	606	633	659	685	711	842	973
Office	241	275	287	300	312	324	337	399	461
Public Sector	241	47	49	51	53	55	57	68	78
Goods Production	433	207	216	226	235	245	254	301	347
TOTAL Floor Area		1,109	1,159	1,209	1,259	1,309	1,359	1,609	1,860

*Lodging employment projections are based on Alabama Gulf Coast Convention and Visitors Bureau estimates of future hotel/motel development. According to the Bureau, 130 new units are planned for 2007. Another 398 units are approved by Council, though developers have not committed to construction dates for these units. TischlerBise conservatively estimates that these units will be built in equal increments (58 rooms/year) over the 2010-2015 period.

AVERAGE DAILY VEHICLE TRIP ESTIMATES

Figure A10 below provide a summary of the residential and nonresidential vehicle trip calculations used in this analysis.

Average Weekday Vehicle Trip Ends are from the reference book, Trip Generation, published by the Institute of Transportation Engineers (ITE), in 2003. A “trip end” represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip rates have been adjusted to avoid overestimating the number of actual trips because one vehicle trip is counted in the trip rates of both the origination and destination points. A simple factor of 50% has been applied to the office, public sector and goods production categories. The residential category has a factor greater than 50% due to journey-to-work trips outside the City of Orange Beach. The commercial/retail category has a trip factor of less than 50% because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. The ITE Manual indicates that on average 45% of the vehicles entering shopping centers under

25,000 square feet are passing by on the way to some other primary destination and 55% of the attraction trips have the shopping center as their primary destination. Therefore, the adjusted trip factor is 28% (0.55×0.50).

There is an average of 70,126 vehicle trips generated by existing development in Orange Beach on an average weekday. As the table below indicates, residential development generates 46,055 vehicle trips and nonresidential development generates 24,071 vehicle trips on an average weekday.

Figure A10: Average Daily Trips**Residential Vehicle Trips on an Average Weekday (2005)****Residential Units**

Single Family Detached

Single Family Attached

All Other Housing

Assumptions

2,948

532

7,119

Average Weekday Vehicle Trip Ends per Unit*

Single Family Detached

Single Family Attached

All Other Housing

Trip Rate	Trip Factor
9.57	58%
5.86	58%
6.72	58%

Residential Vehicle Trip Ends of an Average Weekday

Single Family Detached

Single Family Attached

All Other Housing

16,409

1,815

27,830

Total Residential Trips**46,055****Nonresidential Vehicle Trips on an Average Weekday****Nonresidential Gross Floor Area (1,000 sq. ft.) and by Room for Lodging****

Retail/Commercial

Office

Public Sector

Goods Production

Lodging

Assumptions

580

275

47

207

881

Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.*

Retail/Commercial

Office

Public Sector

Goods Production

Lodging

Trip Rate	Trip Factor
110.32	28%
18.35	50%
18.35	50%
6.97	50%
5.63	50%

Nonresidential Vehicle Trips on an Average Weekday

Retail/Commercial

Office

Public Sector

Goods Production

Lodging

17,922

2,520

427

722

2,480

Total Nonresidential Trips**24,071****TOTAL TRIPS****70,126**

*Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2003)

**Floor area estimates were derived using sq. ft. per employee factors from ULI and ITE

SUMMARY OF DEVELOPMENT PROJECTIONS 2006-2020

Annual demographic and development projections for the impact fee study are summarized in Figure A11 below. The City of Orange Beach is projected to add approximately 477 housing units and 876 persons (in peak periods) per year over the next fifteen years. From 2006 to 2020, TischlerBise projects an average annual increase in employment of 187 jobs

and approximately 50,000 square feet of nonresidential floor area. However, actual nonresidential construction is often built in irregular intervals compared to residential development, with minor construction followed by large-scale projects.

Figure A11: Development Projections 2006-2020

	Base Year		Five-Year Increments						2006-2020	
	2005	2006	2007	2008	2009	2010	2015	2020	Total Increase	Annual Increase
Housing Units	10,599	11,077	11,554	12,032	12,509	12,987	15,374	17,762	6,685	477
Peak Population	19,395	20,271	21,147	22,024	22,900	23,776	28,158	32,539	12,268	876
Year-Round Population	4,863	5,083	5,303	5,522	5,742	5,962	7,060	8,159	3,076	220
Peak Population (with hotel visits)	21,019	21,896	23,012	23,888	24,764	25,787	30,756	35,138	13,242	946
Jobs	4,132	4,319	4,506	4,692	4,879	5,066	5,999	6,933	2,614	187
Nonresidential Sq. Ft. (1,000's)	1,109	1,159	1,209	1,259	1,309	1,359	1,609	1,860	701	50
Hotel/Motel Rooms	881	881	1,011	1,011	1,011	1,091	1,409	1,409	528	38
Ave Wkdy Res. Vehicle Trips	46,055	48,138	50,221	52,304	54,386	56,469	66,884	77,298	29,160	2,083
Ave Wkdy Nonres Vehicle Trips	21,591	22,567	23,542	24,518	25,493	26,469	31,346	36,224	13,658	976
Housing Units										
Single Family	3,480	3,643	3,806	3,969	4,131	4,294	5,108	5,923	2,280	163
All Other Housing	7,119	7,434	7,748	8,063	8,378	8,692	10,266	11,839	4,405	315
Jobs										
Retail/Commercial	1,934	2,021	2,109	2,196	2,284	2,371	2,808	3,245	1,223	87
Office	1,140	1,192	1,243	1,295	1,346	1,398	1,655	1,913	721	52
Public Sector	193	202	210	219	228	237	280	324	122	9
Goods Production	478	500	521	543	564	586	694	802	302	22
Lodging	387	387	444	444	444	479	619	619	232	17
Nonresidential SF (1,000's)										
Retail/Commercial	580	606	633	659	685	711	842	973	367	26
Office	275	287	300	312	324	337	399	461	174	12
Public Sector	47	49	51	53	55	57	68	78	29	2
Goods Production	207	216	226	235	245	254	301	347	131	9
Hotel/Motel (Rooms)										
Lodging (Rooms)	881	881	1,011	1,011	1,011	1,091	1,409	1,409	528	38
Ave Wkdy Vehicle Trips										
Single Family Detached	16,409	17,177	17,945	18,713	19,481	20,249	24,088	27,927	10,749	768
Single Family Attached	1,815	1,900	1,985	2,070	2,155	2,240	2,665	3,089	1,189	85
All Other Housing	27,830	29,060	30,290	31,521	32,751	33,981	40,131	46,282	17,222	1,230
Residential Subtotal	46,055	48,138	50,221	52,304	54,386	56,469	66,884	77,298	29,160	2,083
Retail/Commercial	17,922	18,732	19,542	20,351	21,161	21,971	26,020	30,069	11,337	810
Office	2,520	2,634	2,748	2,862	2,976	3,090	3,659	4,229	1,594	114
Public Sector	427	446	465	485	504	523	619	716	270	19
Goods Production	722	754	787	820	852	885	1,048	1,211	457	33
Lodging	2,480	2,480	2,846	2,846	2,846	3,070	3,966	3,966	1,486	106
Nonresidential Subtotal	24,071	25,047	26,388	27,364	28,339	29,539	35,313	40,190	15,144	1,082
TOTAL	70,126	73,184	76,609	79,667	82,726	86,008	102,196	117,488	44,304	3,165