Capital Improvements Element
&
Development Impact Fees

Douglasville, Georgia

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CAPITAL IMPROVEMENTS ELEMENT

The front section of this document is the Capital Improvements Element (CIE) for the City of Douglasville's Comprehensive Plan. In Georgia, a CIE is required of any jurisdiction that decides to impose development impact fees. The middle section contains the impact fee formulas and fees schedules based on the planning analysis presented in the CIE. Additional details and supporting documentation on the demographic data (Appendix A) and road improvement projects (Appendix B) are provided at the back of this report.

Categories for Assessment of Impact Fees

The City of Douglasville has prepared the mandatory CIE analysis for parks/recreation and road improvements. A previous version of the Douglasville study included public safety infrastructure needs and potential impact fees, along with preliminary impact fee schedules for countywide infrastructure. These items have been removed from the current report.

Mandatory CIE Components

Consistent with the Georgia Impact Fee Act and the administrative rules of the Department of Community Affairs, each section in the CIE includes documentation on the follow topics:

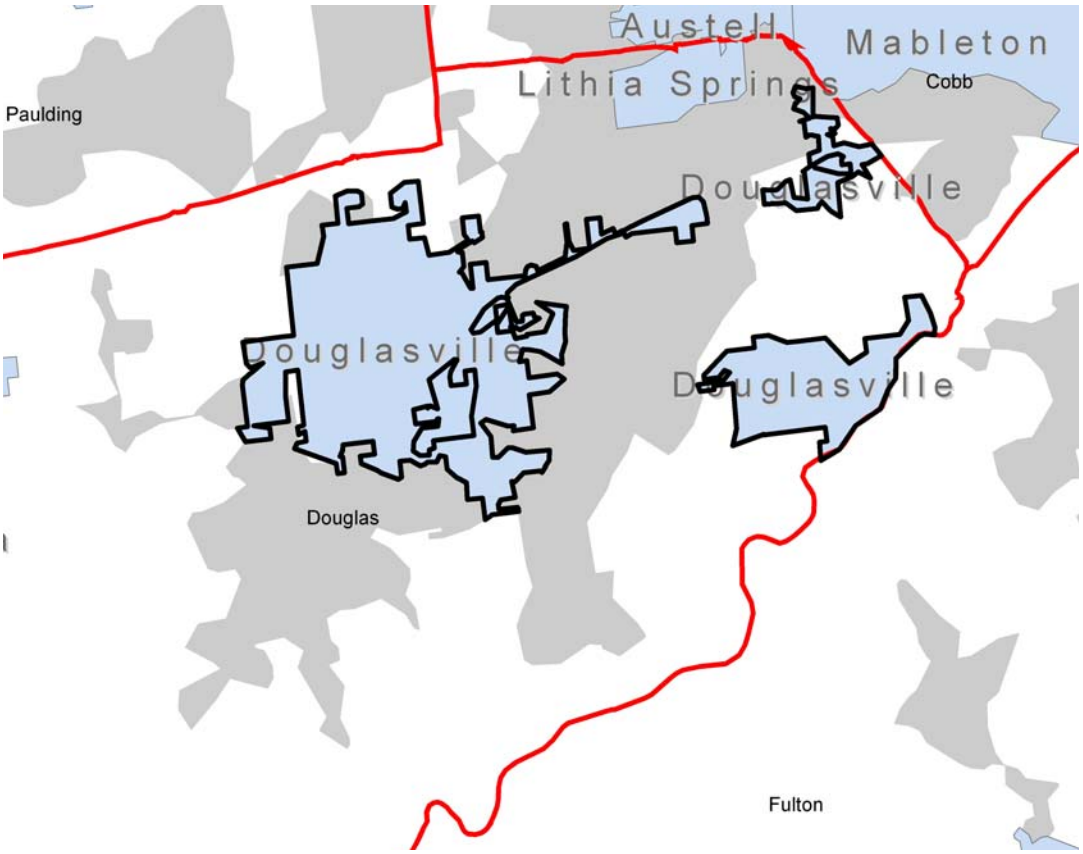
1. Service Area
2. Level of Service
3. Projection of Needs
4. Schedule of Improvements
5. Funding Sources.

Parks and Recreation Facilities

Service Area for Parks and Recreation

To ensure a substantial benefit to new development paying impact fees, Douglasville has evaluated collection and expenditure zones for infrastructure that may have distinct service or benefit areas. Douglasville has made a policy decision to use impact fee funding for major parks and recreation facilities that will benefit new development throughout the entire City. A map of the Douglasville City boundary is shown in Figure 1. Douglasville has annexed land to the east along I-20 and in the southeast portion of Douglas County near the Chattahoochee River. In the map below, light gray shading indicates urbanized areas, as designated by the US Census Bureau, and the heavy red lines are county boundaries.

Figure 1 – Map of Douglasville City Limits



Level of Service for Parks and Recreation

Park and recreation infrastructure standards have been prepared for larger, active parks that have a citywide service area and major recreation facilities.

Citywide Parks

As shown in Figure 2, the inventory of active, citywide park improvements represents an investment with a current value of approximately $3.5 million. For each new resident of Douglasville, the City needs to spend $122 on park improvements to maintain its current infrastructure standard. With 118 acres of land for active parks, the current standard is 4.1 acres per 1,000 residents. Infrastructure standards are derived using the estimated year-round population in 2006 for the entire City.

Figure 2 - Inventory of Citywide Parks

Park	Acreage	Playground Equipment	Baseball Field (with lights)	Football/Soccer (with lights)	Tennis Courts	Restrooms/ Concessions	Miscellaneous Improvements	*TOTAL*
Hunter	84	1	8	1	4	2	$840,000	$2,562,000
Jessie Davis	17	2		1		1	$170,000	$496,000
Fowler Field	17			1		1	$170,000	$436,000
TOTAL	118	3	8	3	4	4	Per Acre Cost	$3,494,000
Unit Price =>		$30,000	$120,000	$120,000	$80,000	$146,000	$10,000	
							Population in 2006	28,621
							Acres Per 1,000 Residents	4.1
							Improvements Cost per Acre	$30,000
							Improvements Cost per Capita	**$122**

Major Recreation Facilities

As shown in Figure 3, the inventory of major recreation facilities represents an investment with a current value of approximately $2.2 million dollars. Major recreation improvements cost an average of $76 per person.

Figure 3 – Inventory of Major Recreation Facilities

Site	*Improvement*	*Cost*
Hunter Park	Renovated Pool	210,435
Hunter Park	Lake Improvement	60,000
Jessie Davis Park	Renovated Pool	173,481
Jessie Davis Park	Hawthorne Center	1,750,000
	TOTAL	$2,193,916
	Population in 2006	28,621
	Improvements Cost per Capita	**$76**

Projected Need for Parks and Recreation Infrastructure

Figure 4 summarizes the infrastructure standards and cost factors for park and recreation. Based on the projected increase in year-round residents over the next five years, Douglasville will need to acquire an additional 29 acres of park land, at an estimated cost of $522,000 plus make $1.4 million in park/recreation improvements.

Figure 4 – Needs Analysis for Parks

Park LOS Standards

Land	4.1	acres per 1,000 persons
Land Cost	$18,000	per acre
Improvements	$198	per person

		Infrastructure Needed		
Fiscal Year	*Year-Round Residents*	*Land Acres*	*Land Cost*	*Improvements Cost*
2006-07	28,621	118		
2007-08	30,047	124		
2008-09	31,473	130		
2009-10	32,899	136		
2010-11	34,325	142		
2011-12	35,751	147		
Five-Yr Increase	7,130	29	$522,000	$1,412,000

Schedule of Improvements for Parks and Recreation

The City of Douglasville has an option to purchase a 130 acre park site south of I-20. The cost of land (shown in the table above) is based on the contract amount for this site. Over time, this new park will be improved with ball fields, athletic courts, trails and other recreation facilities.

During the next five years, Douglasville will build a large, multi-purpose recreation facility at Hunter Park. This facility will be built by the City but operated by the YMCA under contract to Douglasville. The total cost will be much more than the five-year need for approximately $1.4 million in park/recreation improvements.

Funding Sources for Parks and Recreation

Douglasville expects to receive $387,000 per year in park impact fee revenue, assuming implementation of the maximum supportable fee amounts. A summary of growth related improvements for parks and recreation is shown in Figure 5. The projected deficit of approximately $1.8 million is due to the acquisition of a large park site that supplies more than the five-year need for land. To make up the deficit, Douglasville will use other funds, such as General Fund and/or SPLOST revenue.

The need for park improvements and projected impact fee revenue are derived from the infrastructure standards and the projected increase in population over the next five years. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and capital costs. See Appendix A for discussion of the development projections that drive the cash flow analysis.

Figure 5 – Cash Flow Analysis for Parks

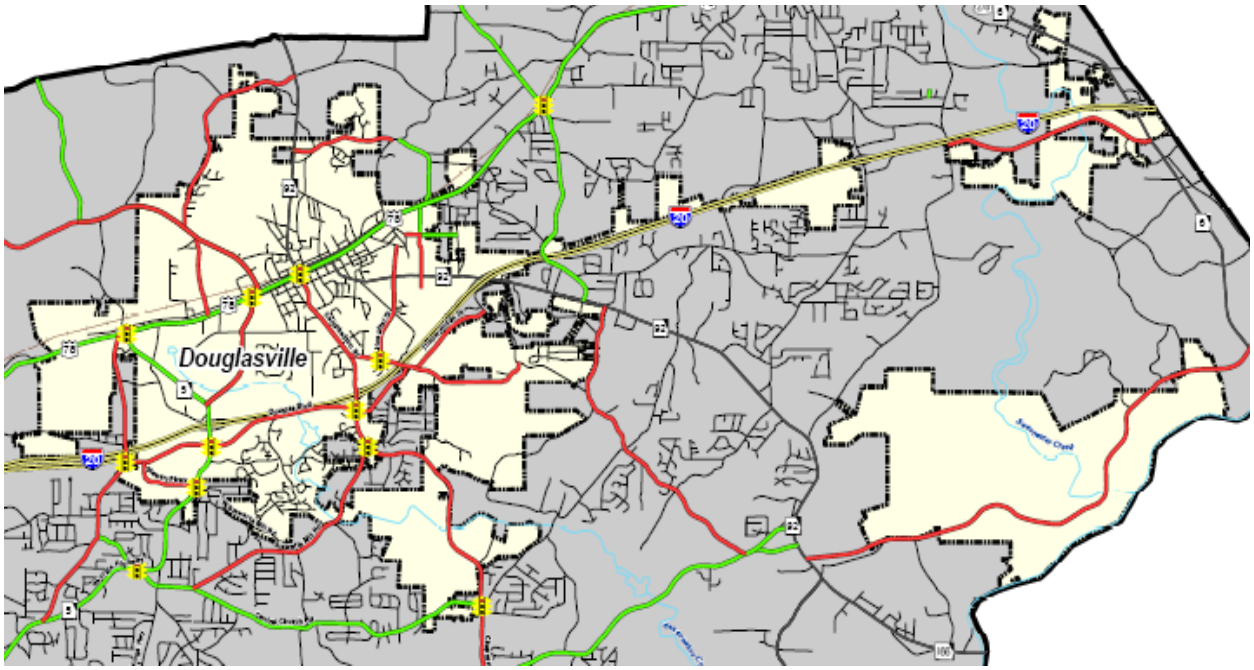
Douglasville, Georgia	1	2	3	4	5	Cumulative	Average
(Current $ in thousands)	2007	2008	2009	2010	2011	Total	Annual
REVENUES							
1 Park Fee - Detached	$267	$267	$267	$267	$267	$1,335	$267
2 Park Fee - Attached	$120	$120	$120	$120	$120	$600	$120
Subtotal Park Fees	$387	$387	$387	$387	$387	$1,935	$387
CAPITAL COSTS							
Land for Citywide Park	$2,340	$0	$0	$0	$0	$2,340	$468
Rec Ctr (growth share)	$0	$0	$0	$0	$1,400	$1,400	$280
Subtotal Parks	$2,340	$0	$0	$0	$1,400	$3,740	$748
NET INFRASTRUCTURE CASH FLOW - Parks						*Current $ in thousands*	
Annual Surplus (or Deficit)	($1,953)	$387	$387	$387	($1,013)	($1,805)	($361)
Cumulative Surplus (or Deficit)	($1,953)	($1,566)	($1,179)	($792)	($1,805)		

Roads

Service Area for Roads

To ensure a substantial benefit to new development paying impact fees, Douglasville has evaluated collection and expenditure zones for infrastructure that may have distinct service or benefit areas. Douglasville will use impact fees to make improvements to major roads providing benefit to new development located throughout the entire City. Therefore, a citywide service area is recommended for collection and expenditure of impact fees for roads. A map of the recommended citywide service area for roads is shown in Figure 6. Existing arterial roads are designated with heavy red lines and collector roads are shown with heavy green lines. A full-size version of this map is attached to the back of this report.

Figure 6 – Map of Intersections and Functional Classification



Level of Service for Roads

Road impact fees are based on a lane capacity standard of 7,300 vehicles per lane, obtained from the Georgia Regional Transportation Authority. The lane capacity standard is from Table 5 of the Development of Regional Impact Technical Guidelines, which provides generalized annual average daily volumes for major city/county roads. For non-state roadways, a two-lane undivided roadway operating at LOS "D" has an estimated capacity of 14,600 vehicles per day, or 7,300 vehicles per lane.

Schedule of Improvements for Roads

In Douglasville, the recommended road impact fees are derived from a list of planned road improvements that were identified by engineering studies. Supporting documentation on the growth-related improvements summarized in Figure 7 is available in the Douglasville Transportation Study (JJ&G, 2000) with recent cost estimates and additional engineering analysis by Carter-Burgess. Detailed worksheets on each project, prepared by Carter-Burgess, are included at the back on this report (see Appendix B). Road projects are listed in priority order, but subject to change by elected officials due to factors such as the availability of GDOT funding. Because of the magnitude of the Riverside Parkway expansion, a multi-year construction schedule is anticipated. Figure 7 indicates a ten-year list of growth related road improvements. In the long-run, additional improvements might be needed for some of the road segments.

The total cost of each road project was derived by Carter-Burgess and/or City staff. The other funding column indicates revenue from the City of Douglasville, Georgia Department of Transportation (GDOT) and/or Douglas County. New development will pay 100% of the cost of widening roads that are not currently deficient. Because of the existing deficiency on Chapel Hill Road, the 42% growth share is based on the formula: 1 - (current volume divided by future capacity). Improvements to Chicago Avenue and Prestley Mill Road add capacity, but not additional travel lanes. The growth share for these roads is 34%, based on new development's share of projected citywide vehicle trips in 2016. As shown in the right column of Figure 7, the total growth cost for planned road improvements is approximately $34.75 million. Dividing the growth cost by the total lane miles to be constructed indicates an average cost of $1,277,000 per lane mile for growth-related system improvements.

Figure 7 – Ten-Year List of Growth-Related Road Projects

Project & FY	*Description*	*Lane Miles*	*Total Cost (1)*	*Other Funding (2)*	*Growth Cost (3)*
Chapel Hill Road, Phase 1	Widen from 2 to 4 lanes from Stewart Mill Road to Central Church Road	4.5	$10,600,000	$7,267,468	$3,332,532
Bright Star Road Connector	New 4-lane roadway from SR 5 to Bright Star Road	3.4	$3,500,000	$900,000	$2,600,000
Chicago Avenue	Improvements between Strickland Street to Cedar Mountain Road	2	$1,000,000	$660,000	$340,000
Stewart Mill Road, Phase 1	Widen from 2 to 4 lanes from Chapel Hill Road to Reynolds Road	1.7	$4,000,000	$800,000	$3,200,000
Douglas Blvd Extension (Timber Ridge Dr), Phase 1	Widen from 2 to 4 lanes from Chapel Hill Road to Prestley Mill Road	1.4	$4,000,000	$1,380,000	$2,620,000
Riverside Parkway, Phase 1	Widen from 2 to 4 lanes from Camp Creek Parkway to Fairburn Road	11	$25,800,000	$4,165,313	$21,634,687
Prestley Mill Road	Improvements between Hospital Drive and Slater Mill Road	3.2	$3,000,000	$1,980,000	$1,020,000
	TOTAL	27.2	$51,900,000	$17,152,781	$34,747,219
			$1,908,000	$631,000	$1,277,000

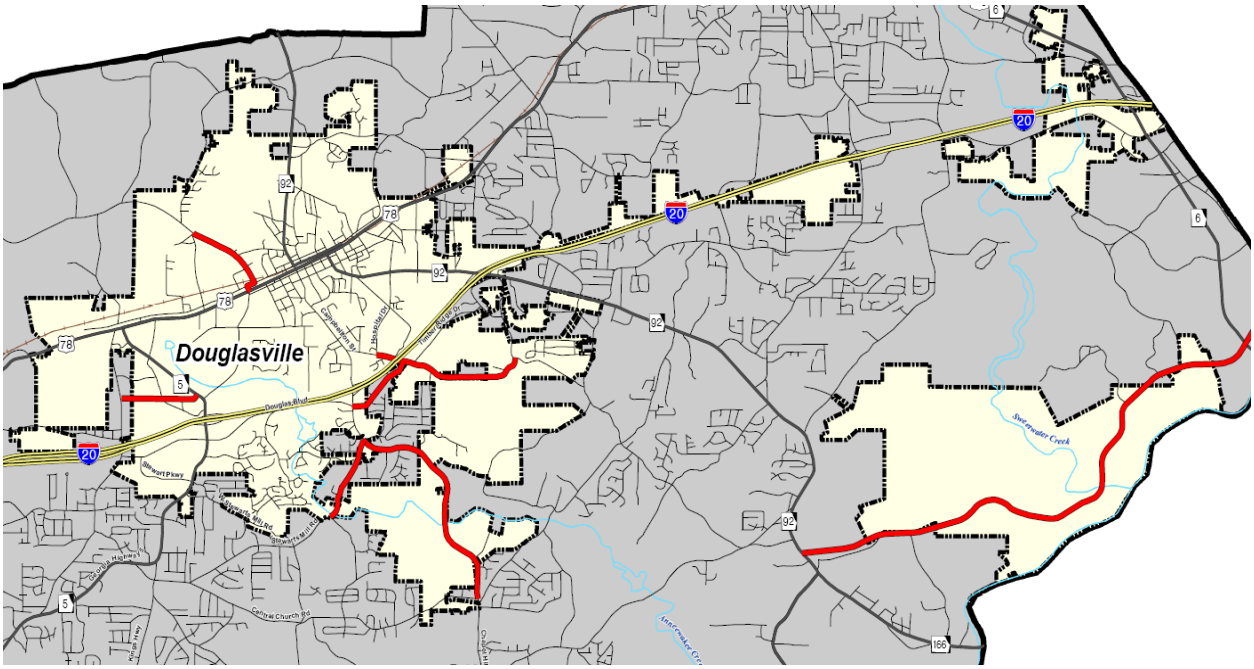
(1) Total cost estimates from Carter-Burgess or City staff.

(2) Other funding from City of Douglasville, GDOT or Douglas County, as shown in the 10/4/06 CIE submittal to DCA.

(3) New development pays 100% of the cost of widening roads that are not currently deficient. Because of the existing deficiency on Chapel Hill Road, the growth share is based on the formula:
1 - (current volume / future capacity), or 42%. Improvements to Chicago Avenue and Prestley Mill Road add capacity, but not additional travel lanes. The growth share for these roads is 34%, based on new development's share of projected citywide vehicle trips in 2016.

The road projects listed above are mapped in Figure 8. More detailed maps and further justification for each project is provided in Appendix B. A full-size version of this map is also attached to the back of the report.

Figure 8 – Map of Improvements



Road Needs Analysis

Calibration of impact fees requires projected development to be converted into average weekday vehicle trips and vehicle miles of travel as described in the following sections.

Trip Generation

Douglasville road impact fees are based on average weekday vehicle trip ends. Trip generation rates are from the reference book Trip Generation published by the Institute of Transportation Engineers (ITE, 2003). 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 road 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 the infrastructure demand for particular types of development.

Adjustment for Journey-To-Work Commuting

Residential development has a larger trip adjustment factor of 62% to account for commuters leaving Douglasville for work. According to the 2001 National Household Travel Survey (see Table 29, Federal Highway Administration, published 12/04) home-based weekday 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 76% of Douglasville

workers travel outside the city for work. In combination, these factors (0.31 x 0.50 x 0.76 = 0.12) support the higher allocation of trips to residential development.

Adjustment for Pass-By Trips

Data contained in Trip Generation Handbook (ITE, 2004) indicate an inverse relationship between commercial building size and pass-by trips. Therefore, appropriate trip adjustment factors have been calculated according to commercial building size (see Figure 19). For commercial developments, the trip adjustment factor is less than 50% because retail development and some services (like banks) attract vehicles as they pass by on arterial roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For a small commercial building of 10,000 square feet of floor area, the ITE data indicates that on average 52% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 48% of attraction trips have the commercial building as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 48% multiplied by 50%, or approximately 24% of the trip ends.

Figure 9 – Commercial Trip Rates and Adjustment Factors

Floor Area in thousands (KSF)	***Shopping Centers*** ITE 820*		Commercial Pass-by Trips**	Commercial Trip Adj Factor***
	Trip Ends	Rate/KSF		
10	137	13.70	52%	24%
25	251	10.03	45%	28%
50	396	7.92	39%	31%
100	626	6.26	34%	33%
200	989	4.95	29%	36%
400	1,563	3.91	23%	39%
800	2,470	3.09	18%	41%

* PM-Peak Hour, ITE, Trip Generation, 2003.
** 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 ((-7.6967*LN(KSF)) + 69.448).
*** 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*(1-passby pct)).

Vehicle Miles of Travel

A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of the number of vehicle trips multiplied by the average trip length. The average trip length in Douglasville is calibrated using data on lane-miles to be constructed over the next ten years.

Average Trip Length on City Arterial Roads

Determining average trip length for the purpose of impact fees requires consideration of the functional classification of roads and the community's criteria for system improvements, as discussed above. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and eventually to a state or interstate highway. This progression of travel up and down the functional classification chain limits the average trip length question to the following, "What is the average vehicle trip length on impact fee system improvements (i.e., major roads listed in Figure 7 above)?"

Trip Length Weighting Factor by Type of Land Use

The road impact fee methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6 of the 2001 National Household Travel Survey (NHTS published 12/04 by the Federal Highway Administration), vehicle trips from residential development are approximately 122% of the average trip length. The residential trip length adjustment factor includes data on home-based work trips, social and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 68% of the average trip length while other nonresidential development typically accounts for trips that are 75% of the average trip length. The specific weighting factors for each development prototype are shown in Figure 10.

Vehicle Trips to Development within Douglasville

The relationship between development units in Douglasville and the projected demand for infrastructure is documented in the following two tables. Figure 10 summarizes the input variables used for the travel demand model. In the table below, KSF means square feet of nonresidential development (in thousands), ITE stands for the Institute of Transportation Engineers and VTE stands for vehicle trip ends (i.e. average weekday trip generation rates). The variables at the top of the table (without shading) are ITE trip rates and adjustment factors. The variables in the middle of the table (with blue shading) are Census and NHTS data (see the residential commuting adjustment and the average trip length adjustments by type of land use). The variables at the bottom of the table (with yellow shading) are local data that have already been discussed above.

With approximately 27.2 lane miles of planned improvements to major roads and a lane capacity standard of 7,300 vehicles per lane, the planned road improvements can accommodate approximately 198,600 vehicle miles of travel (i.e. 7,300 vehicles per lane traveling the entire 27.2 miles). To derive the average utilization (i.e. average trip length expressed in miles) of the planned improvements, divide the vehicle miles of travel by the increase in vehicle trips associated with new development in Douglasville from FY2006-07 to FY2016-17. As shown in Figure 11, development in Douglasville is currently attracting an estimated 172,775 vehicle trips on an average weekday, with a projected increase to 260,586 vehicle trips by FY2016-17. Over the next ten years, the projected increase due to new development is 87,811 vehicle trips on an average weekday. Dividing the capacity increase from planned road improvements by the increase in vehicle trips yields an average trip length of approximately 2.26 miles (198,600 VMT divided by 87,811 vehicle trips). To be consistent with the methodology used in the impact fee

calculations, TischlerBise further refined the average trip length determination through a series of iterations using spreadsheet software. This refinement is necessary because the calibration of average trip length includes the same adjustment factors used in the impact fee calculations (i.e. residential commuting adjustment, commercial pass-by adjustment and average trip length adjustment by type of land use). With these refinements, the average trip length on the planned improvements to major roads is estimated to be 2.66 miles, as shown in Figure 10.

Figure 10 – Input Variables for Impact Fee Calibration

Detached Wkdy VTE per Unit	9.57
Attached Wkdy VTE per Unit	6.59
Goods Production VTE/KSF	4.96
Services Weekday VTE/KSF	67.91
Education Weekday VTE/KSF	14.49
Government Wkdy VTE/KSF	13.34
Services Trip Adj Factor	33%
All Other Nonres Trip Adj	50%
Residential Vacancy Rate	0.0%
Residential Trip Adj Factor	62%
Residential Trip Length	122%
Commercial Trip Length	68%
Other Nonres Trip Length	75%
First Projection Year	2007
Arterial Capacity Per Lane	7,300
Arterial Avg Miles/Trip	2.66
Cost per Lane-Mile	$1,277,000

Projected development in Douglasville over the next ten years, and the corresponding need for additional lane miles, is shown in Figure 11. The demographic data at the top of the table is discussed further in Appendix A. Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips (shown with gray shading in the middle of the table). As shown in the bottom right corner of the table below, the ten-year need is for 27.2 lane miles of major roads at a cumulative cost of approximately $35.8 million.

Figure 11 – Projected Development and Growth-Related Need for Roads

Year->	Base	1	2	4	6	8	10	Cumulative
Douglasville, Georgia	2006	2007	2008	2010	2012	2014	2016	Increase
DEMAND DATA								
DETACHED UNITS	6,930	7,282	7,634	8,339	9,043	9,747	10,452	
ATTACHED UNITS	4,431	4,656	4,881	5,331	5,782	6,232	6,682	
GOODS KSF	2,815	2,958	3,101	3,387	3,673	3,960	4,246	
SERVICES KSF	4,485	4,713	4,941	5,397	5,853	6,309	6,765	
EDUCATION KSF	611	642	673	735	797	859	921	
GOVERNMENT KSF	245	257	270	295	319	344	369	
DETACHED TRIPS	41,120	43,208	45,298	49,477	53,656	57,835	62,014	
ATTACHED TRIPS	18,103	19,023	19,943	21,783	23,623	25,462	27,302	
GOODS TRIPS	6,981	7,336	7,690	8,400	9,109	9,821	10,530	
SERVICES TRIPS	100,510	105,620	110,729	120,948	131,167	141,387	151,606	
EDUCATION TRIPS	4,427	4,651	4,876	5,325	5,774	6,223	6,673	
GOVERNMENT TRIPS	1,634	1,714	1,801	1,968	2,128	2,294	2,461	
TOTAL TRIPS	172,775	181,552	190,337	207,901	225,457	243,023	260,586	
ARTERIAL VMT	391,181	411,052	430,941	470,706	510,458	550,228	589,993	
ARTERIAL LN MI	53.6	56.3	59.0	64.5	69.9	75.4	80.8	
ANL ARTERIAL LN MI		2.7	2.7	2.7	2.7	2.7	2.7	27.2
ANL ARTERIAL COST		$3,450,000	$3,450,000	$3,450,000	$3,450,000	$3,450,000	$3,450,000	$34,760,000
LN MI PER 10,000 VMT	1.37	1.37	1.37	1.37	1.37	1.37	1.37	

Funding Sources for Road Improvements

The cash flow summary provides an indication of impact fee revenues and growth-related expenditures to provide additional road capacity. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and capital costs. See Appendix A for discussion of the development projections that drive the cash flow analysis.

Over the next ten years, road impact fees are expected to generate approximately $34.5 million for funding growth-related system improvements (see Figure 12). This revenue projection assumes the City implements the maximum supportable impact fees. In comparison, the total cost of system improvements for roads is estimated to be $51.9 million. The funding gap of approximately $17.4 million over the next ten years will be covered by additional revenue from GDOT, Douglas County and the City of Douglasville.

Figure 12 – Cash Flow Analysis for Roads

Douglasville, Georgia	1	2	4	6	8	10	Cumulative	Average
(Current $ in thousands)	2007	2008	2010	2012	2014	2016	Total	Annual
REVENUES								
15 Road Fee - Detached	$1,186	$1,186	$1,186	$1,186	$1,186	$1,186	$11,861	$1,186
16 Road Fee - Attached	$522	$522	$522	$522	$522	$522	$5,221	$522
17 Road Fee - Industrial	$124	$124	$124	$124	$124	$124	$1,238	$124
18 Road Fee - Commercial	$1,617	$1,617	$1,617	$1,617	$1,617	$1,617	$16,165	$1,617
Subtotal Road Fees	$3,448	$3,448	$3,448	$3,448	$3,448	$3,448	$34,485	$3,448
CAPITAL COSTS								
Roads CIP (total cost)	$10,600	$4,500	$4,300	$4,300	$4,300	$4,300	$51,900	$5,190
NET CAPITAL FACILITIES CASH FLOW - Roads							*Current $ in thousands*	
Annual Surplus (or Deficit)	($7,152)	($1,052)	($852)	($852)	($852)	($852)	($17,415)	($1,742)
Cumulative Surplus (or Deficit)	($7,152)	($8,204)	($13,607)	($14,010)	($15,712)	($17,415)		

IMPACT FEES

In contrast to development exactions, which are typically referred to as project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or even the entire jurisdiction. Impact fees are one-time payments that must be used solely to fund system improvements needed to accommodate new development. As documented in this report, Douglasville has complied with all requirements of the Georgia Development Impact Fee Act.

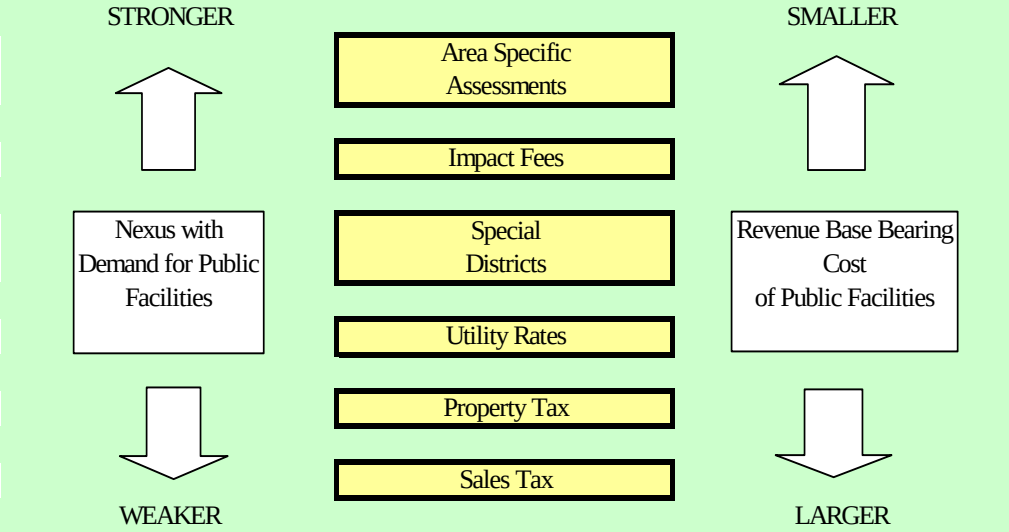
Impact fees are proportionate and reasonably related to the capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from City staff, TischlerBise determined demand indicators for each type of infrastructure and calculated proportionate share factors to allocate costs by type of development. The formulas used to calculate the impact fees are diagramed in a flow chart for each type of public facility. This section of the report indicates the specific factors used to derive the impact fees. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

Why Impact Fees?

Infrastructure funding alternatives force decision-makers to wrestle with a dynamic tension between two competing desires. As shown on the left side of Figure 7, various funding options have a strong-to-weak connection between the source of funds and the demand for public facilities. It is unfortunate that the funding options with the closest nexus to the demand for public facilities also have the smallest revenue base to bear the cost of the public facilities (see the right side of the diagram). For example, only new development pays impact fees. In contrast, existing development plus the new construction added each year will pay property taxes. Therefore, the property tax base continues to increase over time, but the annual increase in new development is relatively constant from year to year.

In the Douglasville, elected officials are considering a policy decision to change the funding source for certain types of infrastructure. If the City implements impact fees, it represents a policy decision to shift infrastructure funding from broad-based revenues, like property and sales taxes, to revenues that have a stronger nexus between the fee payers and the demand for public facilities. As a dedicated revenue source, impact fees could provide significant funding for growth-related system improvements in Douglasville.

Figure 13 – Infrastructure Funding Alternatives

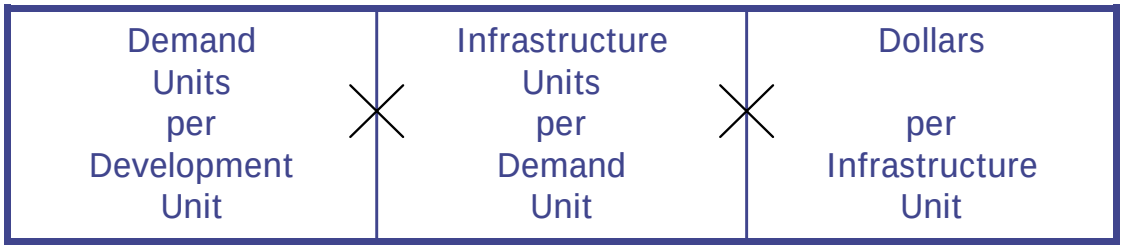


Source: Paul Tischler, Dwayne Guthrie and Nadejda Mishkovsky. 1999. Introduction to Infrastructure Financing. IQ Service Report, Vol. 31, No. 3. Washington, DC: International City/City Management Association.

Basic Understanding of Impact Fee Methods

The basic steps in a generic impact fee formula are illustrated below (see Figure 14). The first step (see the left box) is to determine an appropriate demand indicator, for the particular type of infrastructure. The demand indicator measures the number of demand units for each unit of development. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the generic impact fee formula is shown in the middle box below. Infrastructure units per demand unit are typically called Level-Of-Service (LOS) standards. In keeping with the park example, a common LOS standard is park acreage per thousand people. The third step in the generic impact fee formula, as illustrated in the right box, is the cost of various infrastructure units. To complete the park example, this part of the formula establishes the cost per acre for land acquisition and park improvements.

Figure 14 – Conceptual Impact Fee Formula



When applied to specific types of infrastructure, the generic impact-fee formula is customized using three common impact fee methods that focus on different timeframes. The first method is the cost recovery method. To the extent that new growth and development is served by previously constructed improvements, Douglasville may seek reimbursement for the previously incurred public facility costs. This method is used for facilities that have adequate capacity to accommodate new development, at least for the next five years. The rationale for the cost recovery approach is that new development is paying for its share of the useful life or remaining capacity of an existing facility that was constructed in anticipation of additional development. The second basic approach used to calculate impact fees is the incremental expansion cost method. This method documents the current LOS for each type of public facility in both quantitative and qualitative measures. Douglasville will use impact fee revenue to incrementally expand or provide additional facilities as needed to accommodate new development. A third impact fee approach is the plan-based method. This method is best suited for public facilities that have commonly accepted engineering/planning standards or specific capital improvement plans. Figure 15 summarizes the method(s) and cost components used to derive the impact fee for each type of infrastructure.

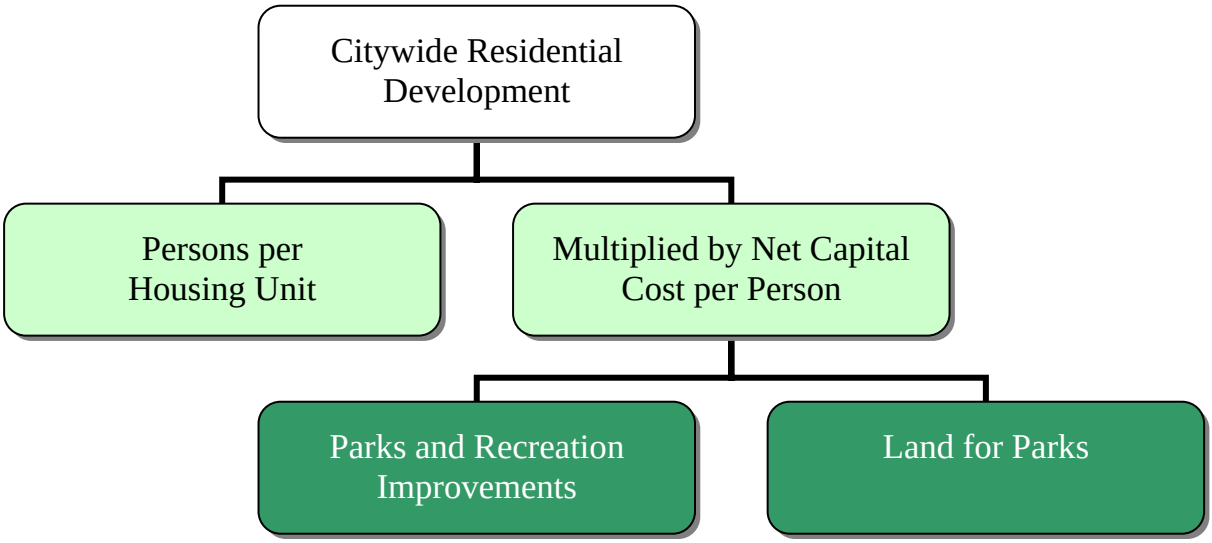
Figure 15 – Proposed Fee Methods and Cost Components

Type of Fee	Cost Recovery (past)	Incremental Expansion (present)	Plan-Based (future)	Cost Allocation
Parks	Not Applicable	Parks and Recreation Improvements and Land for Parks	Not Applicable	100% Residential
Roads	Not Applicable	Not Applicable	Improvements to Major Road	Vehicle Miles of Travel

Park Impact Fee

The park impact fee is based on per capita standards derived from current inventories of infrastructure and current year-round population in Douglasville. As indicated in the park impact fee methodology chart (see Figure 16), cost components were allocated 100% to residential development. The diagram is intended to read like an outline, with lower levels providing a more detailed breakdown of the impact fee components. The park impact fee is derived from the product of persons per housing unit multiplied by the net capital cost per person.

Figure 16 – Park Impact Fee Formula



Park Fee Calculations

Infrastructure standards used to calculate park impact fees are shown in the boxed area of Figure 17. The park impact fee is the product of persons per housing unit multiplied by the net capital cost per person. For example, the park impact fee for a detached house is 2.80 x $271, which equates to $758 per housing unit.

Figure 17 - Park Impact Fee Schedule

	Standards:
Persons Per Housing Unit	
Detached	2.80
Attached	1.97
Infrastructure Standards	
Acres per 1,000 Persons	4.1
Land Cost per Acre	$18,000
Land Cost per Person	$73
Improvements Cost per Person	$198
Revenue Credit (not applicable)	
Net Capital Cost per Person	$271

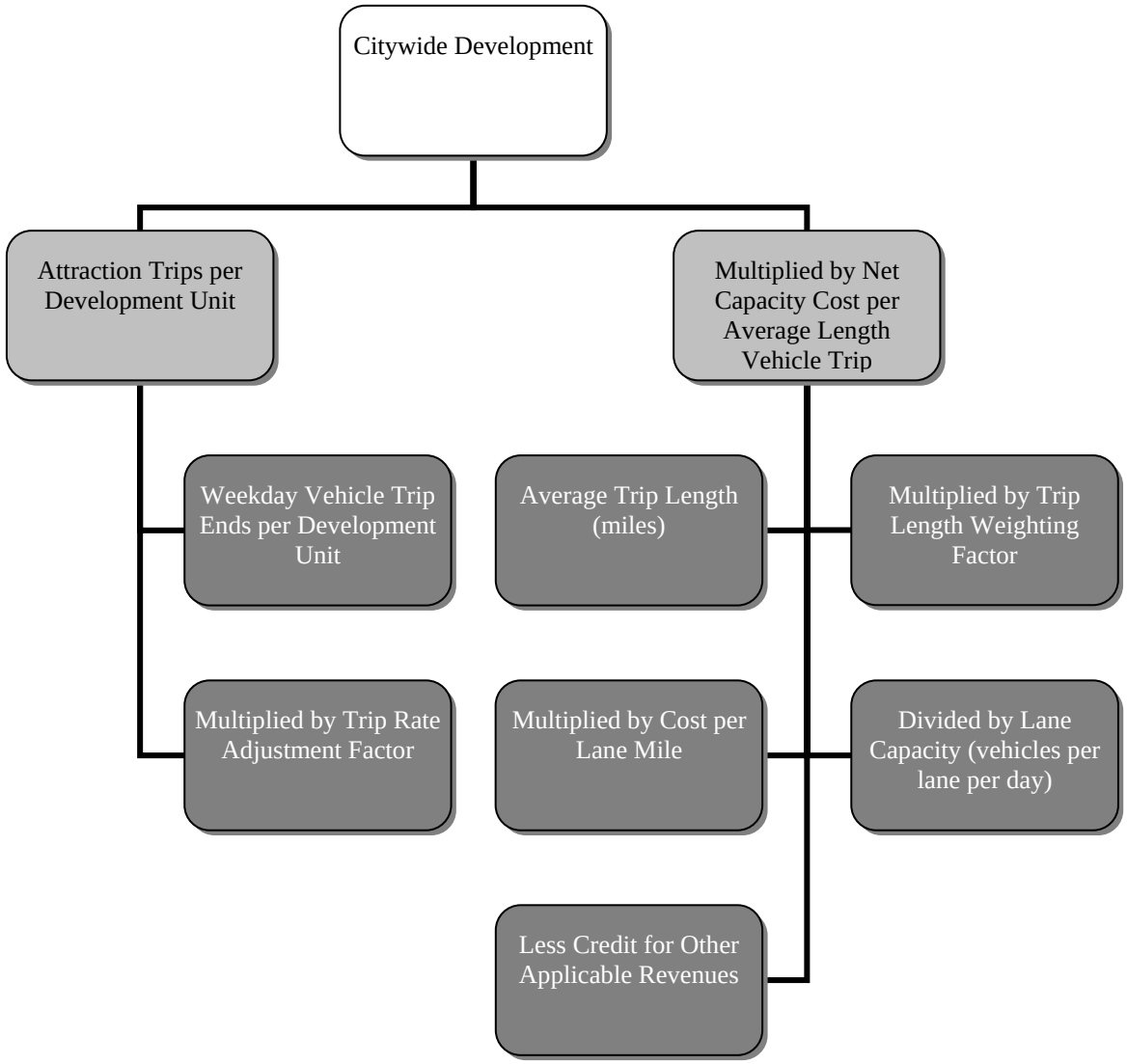
Maxiimum Impact Fee	Per Housing Unit
Detached	$758
Attached	$533

Transportation Impact Fee

For all project-level improvements, the City of Douglasville will require developer dedication of Rights-Of-Way (ROW) and full improvements. Local streets, along with intersection improvements involving a local street (i.e., traffic signals and/or turn lanes) are considered to be project-level improvements that are not eligible for impact fee reimbursements or credits. Impact fees will only fund system improvements that expand capacity of major roads within the city limits (i.e. under Douglasville's jurisdiction). The specific system improvements anticipated over the next ten years are shown in Figure 7.

As shown in Figure 18, the road impact fee is derived from trip generation rates, trip adjustment factors and the net capacity cost for an average length vehicle trip. The cost per average length vehicle trip is a function of the average trip length, trip length adjustment by type of development, cost per lane mile and lane capacity.

Figure 18 – Road Impact Fee Formula



Road Impact Fee Inputs

Factors used to derive road impact fees are shown in Figure 19. Impact fees for nonresidential development are typically based on floor area. However, the impact fees for few types of nonresidential development have unique demand indicators. For example, impact fees for lodging are based on the number of rooms in a hotel or motel.

Capital cost for the average length vehicle trip on planned system improvements is derived from level-of-service components shown below. The capital cost for the average length trip is the product of the average trip length multiplied by the trip length adjustment factor, multiplied by the cost per lane mile, divided by the lane capacity (i.e., vehicle trips per lane).

Figure 19 – Road Impact Fee Input Variables

Douglasville, Georgia ITE Code	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Trip Length Weighting Factors
Weekday Vehicle Trip Ends			
Residential (per Household)			
210 Detached	9.57	62%	122%
221 Attached	6.59	62%	122%
Nonresidential (per 1,000 Sq Ft of floor area)			
820 Commercial/Shop Ctr 100,000 SF or less	67.91	33%	68%
820 Com / Shop Ctr 100,001-200,000 SF	53.28	36%	68%
820 Com / Shop Ctr 200,001 SF or more	41.80	39%	68%
770 Business Park	12.76	33%	75%
720 Medical-Dental Office Bldg	36.13	50%	75%
710 Office 25,000 SF or less	18.35	50%	75%
710 Office 25,001-50,000 SF	15.65	50%	75%
710 Office 50,001 SF or more	13.34	50%	75%
610 Hospital	17.57	50%	75%
151 Mini-Warehouse	2.50	50%	75%
150 Warehousing	4.96	50%	75%
140 Manufacturing	3.82	50%	75%
110 Light Industrial	6.97	50%	75%
520 Elementary School	14.49	33%	75%
Nonresidential (per unique demand indicator)			
620 Nursing Home (per bed)	2.37	50%	75%
565 Day Care (per student)	4.48	24%	75%
530 Secondary School (per student)	1.71	36%	75%
520 Elementary School (per student)	1.29	33%	75%
320 Lodging (per room)	5.63	50%	75%
Infrastructure Standards			
Average Miles per Vehicle Trip	2.66		
Cost per Lane Mile	$1,277,000		
Lane Capacity (vehicles per day)	7,300		
Revenue Credit Per Trip (not applicable)	$0		

Road Impact Fees by Type of Development

The input variables discussed above were used to derive the road impact fees shown in Figure 27. For example, the development impact fee for a detached house is the product of the trip generation rate (9.57), multiplied by the residential commuting pattern adjustment factor (0.62), multiplied by the trip length weighting factor (1.22), multiplied by the average trip length (2.66), multiplied by the cost per lane mile ($1,277,000) divided by the lane capacity (7,300), which equates to $3,368 per detached housing unit.

Figure 20 – Road Impact Fee Schedule

Maximum Supportable Road Impact Fee	
Residential (per housing unit)	
210 Detached	$3,368
221 Attached	$2,319
Nonresidential (per Sq Ft of floor area)	
820 Commercial/Shop Ctr 100,000 SF or less	$7.09
820 Com / Shop Ctr 100,001-200,000 SF	$6.06
820 Com / Shop Ctr 200,001 SF or more	$5.15
770 Business Park	$1.46
720 Medical-Dental Office Bldg	$6.30
710 Office 25,000 SF or less	$3.20
710 Office 25,001-50,000 SF	$2.73
710 Office 50,001 SF or more	$2.32
610 Hospital	$3.06
151 Mini-Warehouse	$0.43
150 Warehousing	$0.86
140 Manufacturing	$0.66
110 Light Industrial	$1.21
Nonresidential (per unique demand indicator)	
620 Nursing Home (per bed)	$413
565 Day Care (per student)	$375
530 Secondary School (per student)	$214
520 Elementary School (per student)	$148
320 Lodging (per room)	$982

Summary of Douglasville Impact Fees

Figure 21 provides a schedule of the maximum supportable impact fees for new development within the City of Douglasville. For residential development, impacted fees will be imposed per housing unit. For nonresidential development, impact fees are based on the square feet of floor area or unique demand indicators, such as the number of rooms in a hotel. The fee schedule for nonresidential development is designed to provide a reasonable impact fee determination for common types of development. For unique development types, the City may allow or require an independent impact fee assessment, consistent with requirements to be specified in the City's impact fee ordinance.

Figure 21 – Maximum Supportable Impact Fees in Douglasville

	Parks & Recreation	*Roads*	*3% Admin*	*TOTAL*
Residential	*Per Housing Unit*			
Detached	$758	$3,368	$123	$4,249
Attached	$533	$2,319	$85	$2,937
Nonresidential	*Per Square Foot of Floor Area*			
820 Commercial/Shop Ctr 100,000 SF or less		$7.09	$0.21	$7.30
820 Com / Shop Ctr 100,001-200,000 SF		$6.06	$0.18	$6.24
820 Com / Shop Ctr 200,001 SF or more		$5.15	$0.15	$5.30
770 Business Park		$1.46	$0.04	$1.50
720 Medical-Dental Office Bldg		$6.30	$0.18	$6.48
710 Office 25,000 SF or less		$3.20	$0.09	$3.29
710 Office 25,001-50,000 SF		$2.73	$0.08	$2.81
710 Office 50,001 SF or more		$2.32	$0.06	$2.38
610 Hospital		$3.06	$0.09	$3.15
151 Mini-Warehouse		$0.43	$0.01	$0.44
150 Warehousing		$0.86	$0.02	$0.88
140 Manufacturing		$0.66	$0.01	$0.67
110 Light Industrial		$1.21	$0.03	$1.24
	Per Unique Demand Indicator			
620 Nursing Home (per bed)		$413	$12	$425
565 Day Care (per student)		$375	$11	$386
530 Secondary School (per student)		$214	$6	$220
520 Elementary School (per student)		$148	$4	$152
320 Lodging (per room)		$982	$29	$1,011

Impact Fee Implementation and Administration

The impact fee ordinance will require fee revenue to be deposited in a separate interest bearing account. Fees should be spent within five years of when they are collected, with the expenditures limited to growth-related system improvements.

Development impact fees should be periodically evaluated and updated to reflect recent data. One approach is to adjust for inflation using the Engineering News Record (ENR) Construction Cost Index published by the McGraw-Hill Companies. This index could be automatically applied to the adopted impact fee schedule each year. If cost estimates or demand indicators change significantly, the City should redo the fee calculations.

Credits and Reimbursements

A general requirement that is common to impact fee methodologies is the evaluation of credits. A revenue credit may be necessary to avoid potential double payment situations arising from one-time impact fees plus on-going payment of other revenues that may also fund growth-related capital improvements. The determination of credits is dependent upon the impact fee methodology used in the cost analysis. There are three basic approaches used to calculate impact fees and each is linked to different credit methodology.

The first major type of impact fee method is a cost recovery approach. This method is used for facilities that have adequate capacity to accommodate new development for at least a five-year time frame. The rationale for the cost recovery is that new development is paying for its share of the useful life or remaining capacity of the existing facility. When using a cost recovery method, it is important to determine whether new development has already contributed toward the cost of existing public facilities (i.e., a past revenue credit). Outstanding principal and interest payments are typically subtracted from the value of the asset that was oversized for new development.

A second basic approach used to calculate impact fees is the incremental expansion cost method. This method documents current factors and is best suited for public facilities that will be expanded incrementally in the future. Because 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 were not included in the impact fees.

A third basic approach used to calculate impact fees is the plan-based method. This method is based on future capital improvements needed to accommodate new development. The plan-based method may be used for public facilities that have commonly accepted service delivery factors to determine the need for future projects, or the jurisdiction plans to significantly increase the current factors and it has a financially feasible strategy to cover the cost of existing deficiencies. If a plan-based approach is used to derive impact fees, the credit evaluations should focus on future bonds and revenues that will fund planned capital improvements.

Specific policies and procedures related to site-specific credits or developer reimbursements will be addressed in the ordinance that establishes the impact fees. Project-level improvements

(required as part of the development approval process) are not eligible for credits against impact fees. If a developer constructs a system improvement included in the fee calculations, it will be necessary to either reimburse the developer or provide a credit against the fees in the area benefiting from the system improvement. The latter option is more difficult to administer because it creates unique fees for specific geographic areas. Based on TischlerBise's experience, it is better for the City to establish a reimbursement agreement with the developer that constructs a system improvement. The reimbursement agreement should be limited to a payback period of no more than ten years and the City should not pay interest on the outstanding balance. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. The City should only agree to pay the lesser of the actual construction cost or the estimated cost used in the impact fee analysis. If the City pays more than the cost used in the fee analysis, there will be insufficient fee revenue. Reimbursement agreements should only obligate the City to reimburse developers annually according to actual fee collections from the benefiting area.

Site specific credits or developer reimbursements for one type of system improvement does not negate payment of impact fee for other system improvements. The supporting documentation for each type of impact fee illustrates the types of infrastructure considered to be system improvements. For example, the park impact fee provides standards for active parks, but does not address the need for smaller neighborhood-scale park improvements. Therefore, neighborhood-scale park improvements are not eligible for credits against impact fees.

Nonresidential Development Categories

The nonresidential development categories in the impact fee schedule will apply to a majority of new construction anticipated within Douglasville. Nonresidential development categories (summarized below) are based on land use classifications from the book Trip Generation (ITE, 2003).

Shopping Center (820) – A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center provides on-site parking facilities sufficient to serve its own parking demands. Shopping centers may contain non-merchandizing facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs and recreational facilities. In addition to the integrated unit of shops in one building or enclosed around a mall, many shopping centers include out-parcels. For smaller centers without an enclosed mall or peripheral buildings, the Gross Leaseable Area (GLA) may be the same as the Gross Floor Area (GFA) of the building.

General Office (710) – A general office building houses multiple tenants including, but not limited to, professional services, insurance companies, investment brokers and tenant services such as banking, restaurants and service retail facilities. In the impact fees study, this category is used as a proxy for institutional uses that may have more specific land use codes.

Business Park (770) – 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.

Light Industrial (110) – Light industrial facilities usually employ fewer than 500 persons and have an emphasis on activities other than manufacturing. Typical light industrial activities include, but are not limited to printing plants, material-testing laboratories and assembling of data processing equipment.

Warehousing (150) – Warehouses are primarily devoted to the storage of materials.

Even though churches are a common type of development, they do not have a specific impact fee category due to a lack of sufficient data. The Institute of Transportation Engineers does not publish trip rates per church employee and the weekday trip generation rate per 1,000 square feet of floor area is not based on enough studies to be statistically valid. For churches and any other atypical development, staff must establish a consistent administrative process to reasonably treat similar developments in a similar way. When presented with a development type that does not match one of the development categories in the published fee schedule, staff should first look in the ITE manual to see if there is land use category with valid trip rates that match the proposed development. The second option is to determine the published category that is most like the proposed development. Churches without daycare or schools are basically an office area (used throughout the week) with a large auditorium and class space (used periodically during the week). Some jurisdictions make a policy decision to impose impact fees on churches based on the fee schedule for warehouses or mini-warehouses. The rationale for this policy is the finding that churches are large buildings that generate little weekday traffic and only have a few full time employees. A third option is to impose impact fees on churches by breaking down the building floor area into its primary use. For example, a church with 25,000 square feet of floor area may have 2,000 square feet of office space used by employees throughout the week. At a minimum, impact fees could be imposed on the office floor area, based on the published rate per square foot for a small office. An additional impact fee amount could be imposed for the remainder of the building based on the rate for a warehouse or mini-warehouse. The key consideration for these administrative decisions is to be reasonable and consistent. If an applicant thinks the administrative decision is not reasonable, it is appealed to the elected officials for their consideration.

APPENDIX A – DEMOGRAPHIC DATA

MEMORANDUM

TO: Bill Osborne, City Manager
Douglasville, Georgia

FROM: TischlerBise

DATE: March 8, 2007

SUBJECT: Demographic Data and Development Projections

In this memo, TischlerBise documents the demographic data and development projections used in the impact fee study for Douglasville, Georgia. Although long-range projections are necessary for planning capital improvements, a shorter time frame of five to six years is critical for the impact fees analysis. Infrastructure standards will be calibrated using FY2006-07 data and the first projection year for the cash flow model will be FY2007-08. In Douglasville, the fiscal year ends June 30th.

Persons per Housing Unit

As shown in Figure A1, Douglasville had 7,903 housing units in 2000. The weighted-average household size in 2000 for all housing types was 2.68 persons per household. According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Because impact fees will be collected from all housing units when building permits are issued, TischlerBise recommends using persons per housing unit in the impact fee calculations. In 2000, Douglasville had a weighted average of 2.47 persons per housing unit. The 2000 census indicated 7.8% of residential units were vacant or used as seasonal housing.

To provide an indication of the demand units and impact fees for average size housing units, the impact fee report indicates typical fees for both detached and attached housing. Detached housing units are normally larger than attached housing units averaging 2.80 persons per housing unit. Attached housing units are normally smaller, averaging 1.97 persons per housing unit.

Figure A1 – Population by Units in Structure - 2000

Douglasville, Georgia

Units in Structure	***Renter & Owner*** Persons	Hsehlds	PPH	*Housing Units*	*Persons Per Hsg Unit*	*Vacancy Rate*
Single Family	12,508	4,242	2.95	4,446	2.81	4.6%
Mobile Homes	989	320	3.09	373	2.65	14.2%
Townhomes	861	322	2.67	358	2.41	10.1%
Multifamily	5,231	2,391	2.19	2,733	1.91	12.5%
Total SF3 Sample Data	19,589	7,275	2.69	7,910		
SF1 100-Percent Data	19,505	7,286	2.68	7,903	**2.47**	7.8%
Source: U.S. Census Bureau, 2000.			Vacant HU	617		

Recommended Residential Categories

	Persons	*Hsehlds*	*Persons Per Household*	*Housing Units*	*Persons Per Hsg Unit*	*Housing Mix*
Detached Units (SFD & MH)	13,497	4,562	2.96	4,819	**2.80**	61%
Attached Units (all other)	6,092	2,713	2.25	3,091	**1.97**	39%
Group Quarters	560					
Sample Difference	(84)	11				
TOTAL	20,065	7,286				

Population Projections

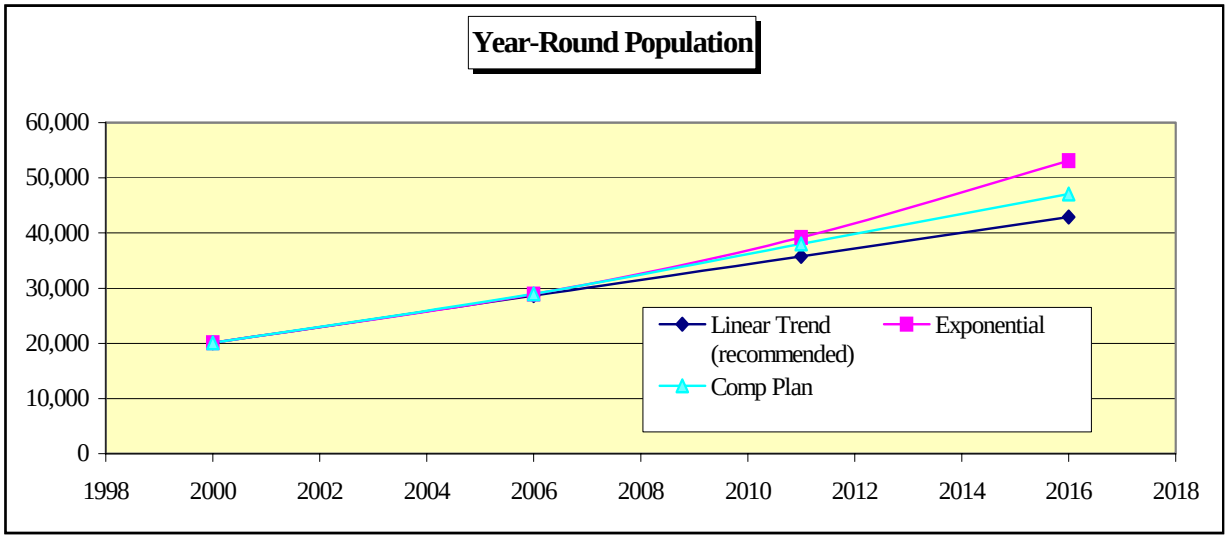
Figure A2 provides alternative projections of population growth in Douglasville. The most conservative projection is based on a linear trend extrapolation of the 2000 to 2005 population change. In comparison, the Comprehensive Plan projection is slightly higher than the recommended linear trend projection.

In comparison to the more conservative population estimate from the Atlanta Regional Commission, the US Census Bureau's 2005 estimate for Douglasville is 27,568 year-round residents.

Figure A2 – Alternative Population Projections

Douglasville, Georgia

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Census	ARC Est	projection years (x) =>										
Method			1	2	3	4	5	6	7	8	9	10	11
Linear Trend (recommended)	20,065	27,195	28,621	30,047	31,473	32,899	34,325	35,751	37,177	38,603	40,029	41,455	42,881
Exponential	20,065	27,195	28,900	30,712	32,638	34,684	36,859	39,170	41,625	44,235	47,009	49,956	53,088
Comp Plan	20,065	27,195	29,002	30,808	32,615	34,421	36,228	38,035	39,841	41,648	43,454	45,261	47,068



Employees per Square Foot of Nonresidential Development

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development in Douglasville. The impact fee study converts projected jobs to nonresidential floor area using square feet per employee multipliers. TischlerBise uses the term "jobs" to refer to employment by place of work (i.e., located within Douglasville). The square feet per employee multipliers shown below were derived from national data published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). Impact fee methodologies may also use the number of employees per thousand square feet (KSF) to differentiate fees by type of nonresidential development. In Figure A3, gray shading indicates four nonresidential development prototypes that will be used by TischlerBise to calculate vehicle trips and estimate potential impact fee revenue as part of the impact fee cash flow analysis. The prototype development for goods-producing jobs is a warehouse. The prototype for commercial service jobs is a shopping center with 100,000 square feet of floor area. The prototype for government jobs is an office building (100,000 square feet). The prototype for education is an elementary school.

Figure A3 – Employee and Building Area Ratios

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	Lodging	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.

Jobs by Type of Nonresidential Development

Figure A4 indicates 2005 estimates of jobs and nonresidential floor area located in Douglasville. Converting jobs to floor area yields an estimate of approximately 7.74 million square feet of nonresidential development within Douglasville. Estimated jobs and floor area are used to calibrate current infrastructure standards. Nonresidential floor area is also used to estimate vehicle trips to nonresidential development within Douglasville.

Figure A4 – Jobs and Floor Area Estimates

	Jobs			Square Feet	2005 Est
	2000		2005	Per Employee	Floor Area
Goods Producing	(1)		(2)		
Manufacturing	830				
Construction	1,510				
Wholesale/Transp	795				
Ag/Mining	65				
Subtotal	3,200	22%	3,408	784	2,672,000
Services					
Retail Trade	3,475				
All Other Services	6,518				
Subtotal	9,993	69%	10,643	400	4,257,000
Public Sector					
Education	502	3%	535	1,084	580,000
Government	805	6%	857	271	232,000
Subtotal	1,307		1,392	583	812,000
GRAND TOTAL	14,500	100%	15,444	501	7,741,000

(1) Workers with jobs in Douglasville, Georgia
CTPP Part 2 data from U.S. Census Bureau, 2000.
(2) U.S. Department of Labor, Bureau of Statistics, projected 2005 from 2001-2004 data.

Employment Projection

Although job growth over the past five years has been relatively flat, TischlerBise has used a constant jobs-to-housing ratio as a means of projecting future jobs within Douglasville. As shown in the table below, Douglasville currently has 1.43 jobs for every housing unit.

Detailed Development Projections

The demographic data shown in Figure A5 will be used as key inputs to the impact fee study. Population and job projections are the key factors that determine the other demographic data. For both population and jobs, TischlerBise indicates countywide population and jobs, the population and jobs expected within the City of Douglasville and the balance of population and jobs in the remainder of the County. The "remainder" is primarily the unincorporated area, but also includes the areas of Villa Rica and Austell within Douglas County. The relative proportions of key growth indicators are shown graphically in Figure A6.

Cumulative demographic data are shown at the top and projected annual increases by type of development are shown at the bottom of the table. Housing units are expected to increase at an average rate of 577 per year, which approximates building permit data over the past six years.

Over the next five years, nonresidential floor area in the good-producing sector is projected to experience an average increase of 143,000 square feet per year. Commercial service buildings

(e.g. shopping centers or office buildings) are expected to increase an average of 228,000 square feet per year. Even though education and government buildings will not generate impact fee revenue, these buildings are expected to increase by 31,000 and 13,000 square feet per year, respectively. For all types of nonresidential development in the City of Douglasville, the projected increase averages approximately 415,000 square feet of floor area each year.

Figure A5 – Annual Demographic Data

Douglasville, Georgia	*2000*	*FY06-07*	*2007*	*2008*	*2009*	*2010*	*2011*	*2016*
Cumulative		*Base Yr*	*1*	*2*	*3*	*4*	*5*	*10*
Yr-Rd Pop in Households	19,505	28,061	29,487	30,913	32,339	33,765	35,191	42,321
Yr-Rd Pop in Group Quarters*	560	560	560	560	560	560	560	560
Total Douglasville Pop	20,065	28,621	30,047	31,473	32,899	34,325	35,751	42,881
Remainder of County Pop	72,109	88,953	92,394	96,037	99,890	103,961	108,260	122,619
Countywide Population	92,174	117,574	122,441	127,510	132,789	138,286	144,011	162,648
Persons Per Hsg Unit	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
Housing Units	7,903	11,361	11,938	12,515	13,093	13,670	14,247	17,134
Jobs to Housing Ratio	1.83	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Jobs	14,500	16,271	17,097	17,924	18,751	19,578	20,405	24,539
Remainder of County Jobs	17,905	20,368	21,666	22,965	24,263	25,561	26,859	30,754
Countywide Jobs	32,405	36,639	38,764	40,889	43,014	45,139	47,264	53,639
Job Distribution								
Goods Producing		22%	22%	22%	22%	22%	22%	22%
Services Producing		69%	69%	69%	69%	69%	69%	69%
Education		3%	3%	3%	3%	3%	3%	3%
Government		6%	6%	6%	6%	6%	6%	6%
Nonres Sq Ft (x 1,000)								
Goods Producing		2,815	2,958	3,101	3,244	3,387	3,530	4,246
Services Producing		4,485	4,713	4,941	5,169	5,397	5,625	6,765
Education		611	642	673	704	735	766	921
Government		245	257	270	282	295	307	369
Total		8,156	8,570	8,985	9,399	9,814	10,228	12,301
Avg Sq Ft Per Job		501	501	501	501	501	501	501

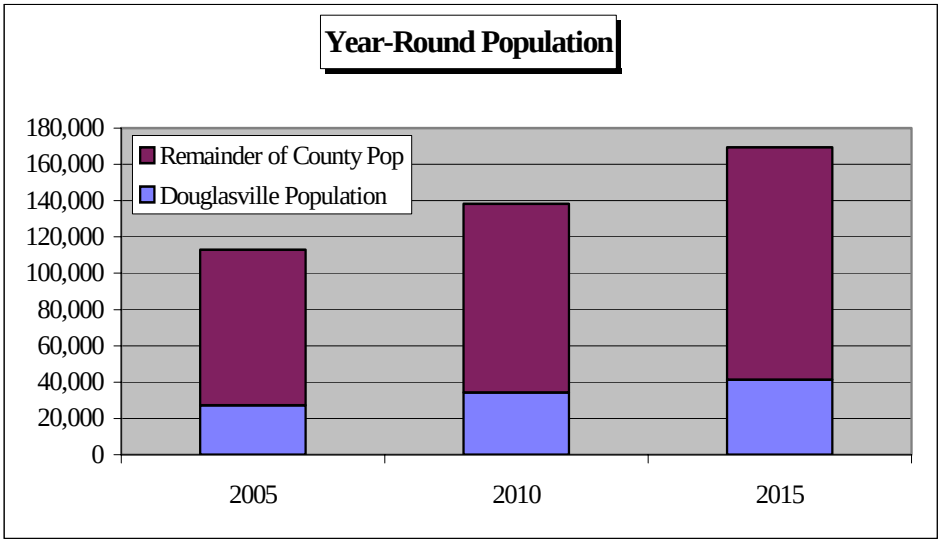
Annual Increase						
Year-Round Population	1,426	1,426	1,426	1,426	1,426	1,426
Jobs	827	827	827	827	827	827
Housing Units	577	577	577	577	577	577
Goods Producing KSF**	143	143	143	143	143	143
Services Producing KSF**	228	228	228	228	228	228
Education KSF**	31	31	31	31	31	31
Government KSF**	12	13	12	13	12	12

* The 2000 group quarters population is assumed to remain constant through 2015.

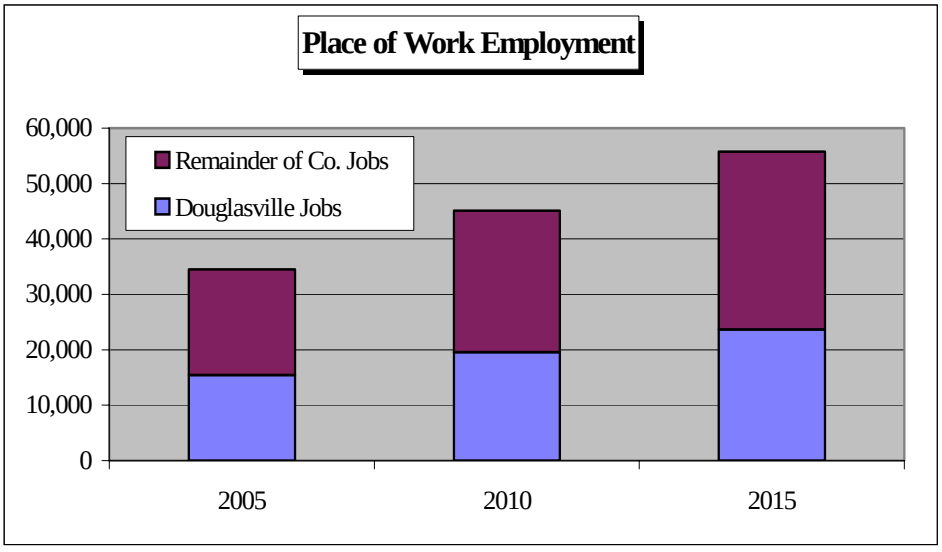
** KSF = square feet of floor area in thousands.

Figure A6 – Development Projections by Geographic Area

	2005	2010	2015	2005 to 2015 Average Annual Increase	2005 to 2015 Average Annual Growth Rate
Douglasville Population	27,195	34,325	41,455	1,426	5.2%
Remainder of County Pop	85,705	103,961	127,926	4,222	4.9%



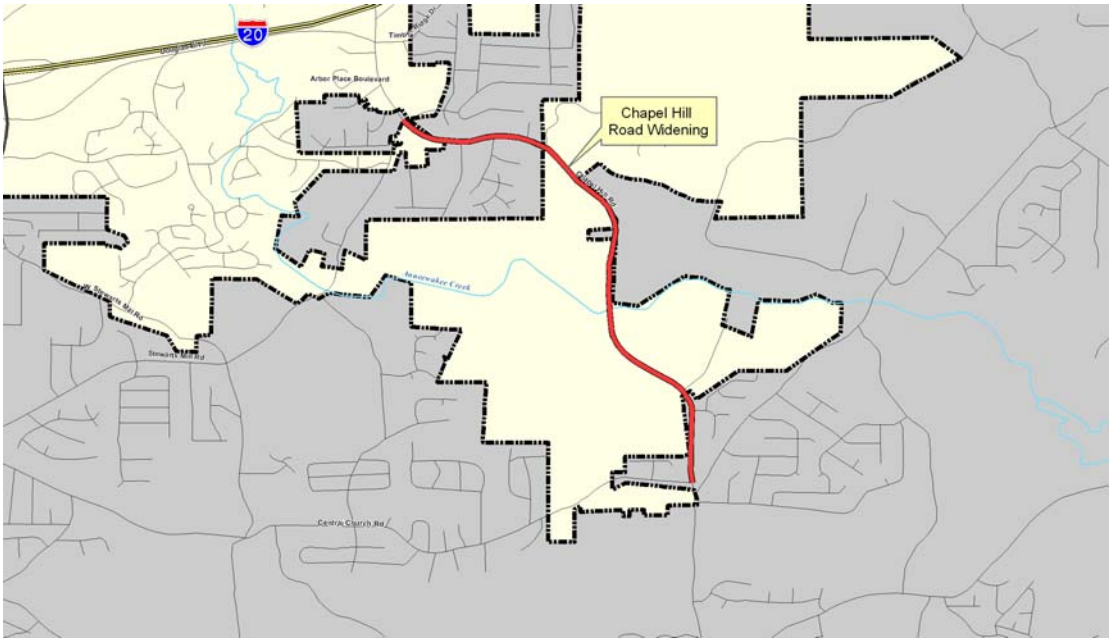
	2005	2010	2015	2005 to 2015 Average Annual Increase	2005 to 2015 Average Annual Growth Rate
Douglasville Jobs	15,444	19,578	23,712	827	5.4%
Remainder of Co. Jobs	19,070	25,561	32,052	1,298	6.8%



APPENDIX B – ROAD PROJECT DETAILS

The following CIP project descriptions were prepared by Carter-Burgess.

Chapel Hill Road Widening



According to the Atlanta Regional Commission (ARC) travel demand model, congestion on Chapel Hill Road is expected to exceed acceptable levels in response to continued growth in the City of Douglasville. The existing (2005) volume to capacity ratio (V/C) on Chapel Hill Road south of Interstate 20 is 1.23, compared to 1.55 (26% increase) in 2030. As a result, widening of Chapel Hill Road is required to meet growth challenges into the future.

Description

Chapel Hill Road south of Interstate 20 between Stewart Mill Road and Central Church Road is proposed to be widened from two to four lanes to accommodate expected growth. The length of the widening is approximately 2.25 miles.

Cost

The project is anticipated to significantly increase the capacity of the transportation network at a cost of approximately $10.6 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $1.3 million.

Priority

The congestion is expected to be so severe in the short term that Chapel Hill Road is rated as the highest transportation priority.

Bright Star Road Connector (new location)

The ARC travel demand model forecasts significant increases in traffic volumes and congestion on the roadway network in southwestern Douglasville. In response to continued growth in the City of Douglasville, volumes on roadways in the vicinity are anticipated to triple by 2030. The existing (2005) V/C ratios on SR 5 at Interstate 20 is 1.13, compared to 1.60 (42% increase) in 2030. The V/C ratio on Rose Avenue in the vicinity of the proposed project is forecast to increase by thirty percent (0.77 to 1.0). As a result, a new location connection between Bright Star Road and SR 5 is required to maintain the current level of accessibility and connectivity in southwest Douglasville into the future.

Description

A new location four lane roadway is proposed to connect Bright Star Road and SR 5 at its intersection with Rose Avenue. The roadway is proposed to be four lanes in width to accommodate expected growth. The length of the new roadway is approximately 0.85 miles.

Cost

The improvement is anticipated to maintain levels of connectivity and accessibility within the City at a cost of approximately $3.5 million. The first phase of the project, preliminary engineering, has been completed.

Priority

Congestion is expected to be so severe in the short term that the Bright Star Road Connector is rated as the second highest transportation priority.

Chicago Avenue Improvements

Chicago Avenue just north of Bankhead Highway is currently operating at sixty to seventy percent capacity. In response to continued growth in the City of Douglasville, volumes on Chicago Avenue are expected to double by 2030. The existing (2005) V/C ratio on Chicago Avenue north of Bankhead Highway is 0.70, compared to 1.34 (91% increase) in 2030. As a result, operational and intersection improvements are required on the entire length of Chicago Avenue. To maintain acceptable traffic flow on the north-south arterial, Chicago Avenue and its intersections must be improved with the installation of traffic operational improvements.

Description

Traffic operational improvements will be implemented on the length of Chicago Avenue from Strickland Street to Cedar Mountain Road including intersection improvements.

Cost

The improvement is anticipated to maintain levels of connectivity and accessibility within the City at a cost of approximately $1 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $120,000.

Priority

Congestion is expected to be so severe in the short term that the Chicago Avenue project is rated as the third highest transportation priority.

Stewart Mill Road Widening

Congestion on Stewart Mill Road is expected to exceed acceptable levels in response to continued growth in the City of Douglasville. The existing (2005) V/C ratio on Stewart Mill Road west of its intersection with Chapel Hill Road is 0.38, compared to 0.67 (76% increase) in 2030. As a result, widening of Stewart Mill Road is required to meet growth challenges into the future.

Description

Stewart Mill Road south of Interstate 20 between Chapel Hill Road and Reynolds Road is proposed to be widened from two to four lanes to accommodate expected growth. The length of the widening is approximately 0.85 miles.

Cost

The project is anticipated to significantly increase the capacity of the transportation network at a cost of approximately $4 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $500,000.

Priority

The congestion is expected to be so severe in the short term that Stewart Mill Road is rated as the fourth highest transportation priority.

Douglas Boulevard Extension (Timber Ridge Drive)

The ARC travel demand model forecasts increasing congestion on Douglas Boulevard to exceed acceptable levels in response to continued growth in the City of Douglasville. The existing (2005) V/C ratio on Douglas Boulevard just south of Interstate 20 is 0.44, compared to 0.62 (41% increase) in 2030. The current alignment of Douglas Boulevard at its intersection with Prestley Mill Road is askew and requires realignment to accommodate future traffic. As a result, widening and realignment of Douglas Boulevard is required to meet growth challenges into the future.

Description

Douglas Boulevard south of Interstate 20 between Chapel Hill Road and Prestley Mill Road is proposed to be widened from two to four lanes and realigned at its intersection with Prestley Mill Road to accommodate expected growth. The length of the widening is approximately 2.25 miles.

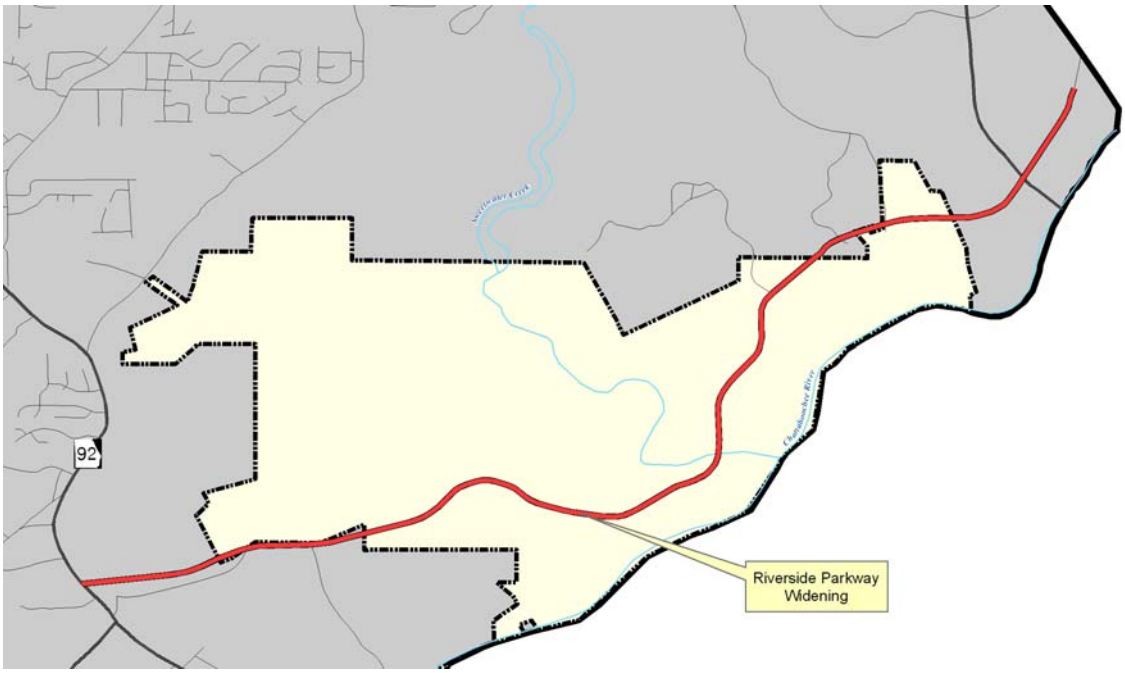
Cost

The project is anticipated to significantly increase the capacity of the transportation network at a cost of approximately $4 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $480,000.

Priority

The congestion is expected to be so severe in the short term that Douglas Boulevard Extension is rated as the fifth highest transportation priority.

Riverside Parkway Widening



The ARC travel demand model forecasts increasing congestion on Riverside Parkway which will exceed acceptable levels in response to continued growth in the City of Douglasville. The existing (2005) V/C ratio on Riverside Parkway in southeast Douglasville is 0.33, compared to 0.88 (167% increase) in 2030. As a result, widening of Riverside Parkway is required to meet growth challenges into the future.

Description

Riverside Parkway in southeast Douglasville between Fairburn Road and Camp Creek Parkway is proposed to be widened from two to four lanes to accommodate expected growth. The length of the widening is approximately 5.5 miles.

Cost

The project is anticipated to significantly increase the capacity of the transportation network at a cost of approximately $25.8 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $3.1million.

Priority

The congestion is expected to be so severe in the short term that Riverside Parkway is rated as the sixth highest transportation priority.

Prestley Mill Road Improvements

Prestley Mill Road just north and south of Interstate 20 is currently operating at forty percent capacity. In response to continued growth in the City of Douglasville, volumes on Prestley Mill Road are expected to double by 2030. The existing (2005) V/C ratio on Prestley Mill Road as it crosses Interstate 20 is 0.39, compared to 0.89 (128% increase) in 2030. As a result, operational and intersection improvements are required on Prestley Mill Road between Hospital Drive and Slater Mill Road. To maintain acceptable traffic flow on the east-west arterial, the intersections along Prestley Mill Road must be improved and traffic operational improvements installed.

Description

Traffic operational improvements, including improvements at intersections, will be implemented on Prestley Mill between Hospital Drive and Slater Mill Road.

Cost

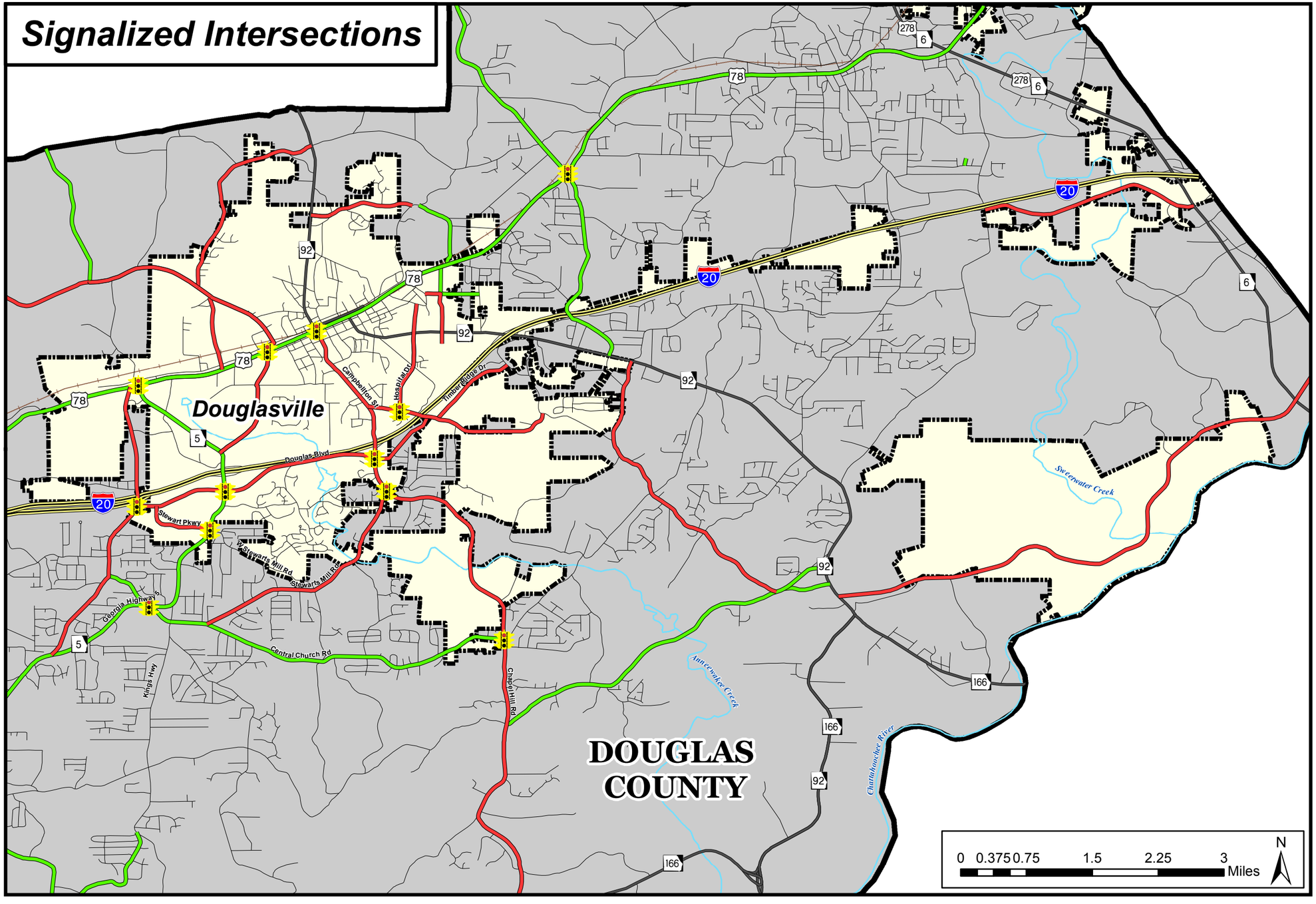
The improvement is anticipated to maintain levels of connectivity and accessibility within the City at a cost of approximately $3 million. The first phase of the project, preliminary engineering, is estimated to cost approximately $360,000.

Priority

To relieve anticipated congestion and maintain levels of service, the Prestley Mill Road project is rated as the seventh highest transportation priority.

City of Douglasville Impact Fee Study

Signalized Intersections



Regional Inset

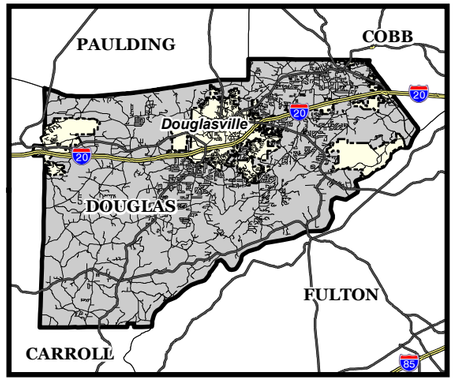


Figure 3

Legend

Intersection Signalization

- Signalized Intersections

Roadway Functional Classification

- Arterials
- Collectors

Roadway Network

- Interstate 20
- State Route / U.S. Highway
- Other Roads

Other Layers

- Douglasville City Limits
- Douglas County Boundary
- Railroad
- River

Source: City of Douglasville, GDOT RC File (2006), and Carter and Burgess, Inc.

This map is intended for planning purposes only.

March 2007

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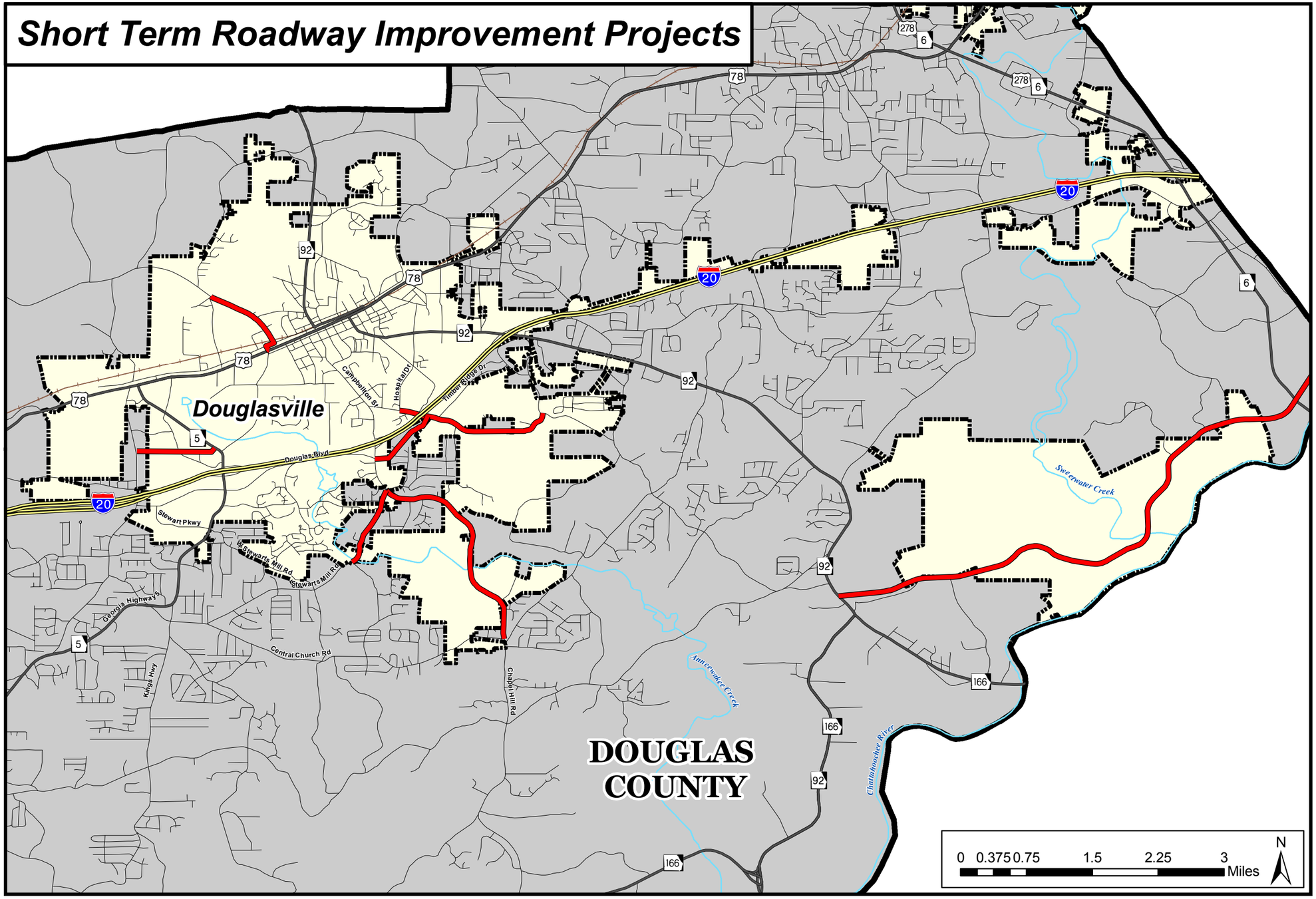
City of Douglasville Impact Fee Study

Short Term Roadway Improvement Projects



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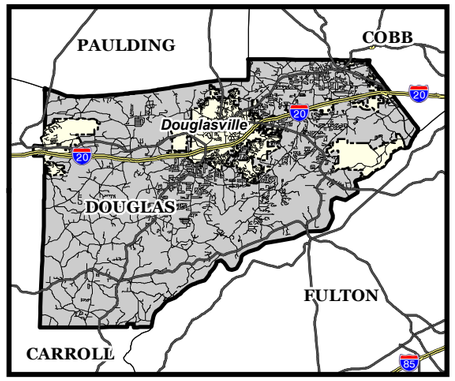

Legend

Roadway Improvement Projects

Short Term Project Types

- Roadway Capacity

Roadway Network

- Interstate 20
- State Route / U.S. Highway
- Other Roads

Other Layers

- Douglasville City Limits
- Douglas County Boundary
- Railroad
- River

Source: City of Douglasville, GDOT RC File (2006), and Carter and Burgess, Inc.

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