
Impact Fee Methodology Report

Locust Grove Impact Fee Program
Including the following public facility categories:

Police Protection Facilities
Parks and Recreation Facilities
Road Improvements

FINAL REPORT – June 6, 2005

ROSS+associates

urban planning & plan implementation

Table of Contents

***Introduction* 1**

Categories for Assessment of Impact Fees 1

Eligible Facilities 2

Review Requirement..... 3

Investment Recovery 4

Organization of the Report..... 5

Maximum Impact Fee Schedule 7

Individual Fee Assessment..... 7

Interpretation..... 7

 Developer Uncertainty with Respect to Land Use Type: 7

***Impact Fee Methodology*..... 10**

Introduction 10

Data Requirements..... 10

Impact Cost Calculation..... 11

Impact Fee Calculation..... 12

***Forecasts* 16**

Population and Employment Forecasts..... 16

Population, Households and Dwelling Units 17

Employment Forecast..... 19

Functional Population Forecast..... 21

Tax Digest Forecast 24

***Police Protection Facilities* 28**

Introduction 28

Service Area 28

Level of Service..... 28

 LEVEL OF SERVICE CALCULATION 28

Forecasts for Service Area..... 29

 FUTURE DEMAND 29

 FUTURE COSTS..... 31

Gross Impact Cost Calculation..... 32

Credit Calculation 32

Net Impact Fee Calculation 33

Fee Schedule 34

***Parks and Recreation Facilities* 37**

Introduction 37

Service Area	37
Level of Service	37
Forecasts for Service Area.....	38
FUTURE DEMAND	38
FUTURE COSTS.....	40
Gross Impact Cost Calculation.....	42
Credit Calculation	42
Net Impact Fee Calculation	43
Fee Schedule	44
<i>Road Improvements.....</i>	<i>45</i>
Introduction	45
Service Area	45
Level of Service Standards.....	45
Level of Service.....	45
Projects to Serve the Service Area	46
Gross Impact Cost Calculation.....	52
Credit Calculation	53
Net Impact Fee Calculation.....	53
Fee Schedule	54
<i>Other Charges</i>	<i>57</i>
Program Administration	57
CIE Prep Fee	57
<i>Appendix A: Glossary</i>	<i>59</i>
<i>Appendix B: Road Project Methodology.....</i>	<i>61</i>
Introduction	61
Methodology.....	61
Study Area and Boundaries.....	62
Level-of-Service.....	62
Unit Costs for Improvements.....	65
Existing Conditions	66
Deficiencies.....	66
Improvements and Estimated Cost.....	66
Future Year 2025 Traffic.....	67
Demographic Forecast.....	67
Trip Generation Rates	68
Traffic Demand	68
Future Conditions	69

Introduction

Based upon the latest population and employment forecasts, by the year 2025 Locust Grove will be called upon to invest about \$50 million in capital improvements for public safety (police protection), parks, and road improvements including about \$43 million in order to serve new growth alone. The costs to provide these capital improvement projects—including the money already spent on projects that serve future growth—can be charged to the new development that creates the need for the additional facilities.

Under State law, the City can collect money from new development based on that development's proportionate share—the “fair share”—of the cost to provide the facilities it needs. This includes the categories of public safety, parks and roads. Revenue for service facilities can be produced from new development in two ways: through future taxes paid by the homes and businesses that growth creates, and through an impact fee assessed as new development occurs.

Impact fees are authorized in Georgia under Code Section 37-71, the *Georgia Development Impact Fee Act* (DIFA), and are administered by the Georgia Department of Community Affairs under Chapter 110-12-2, *Development Impact Fee Compliance Requirements*. Impact fees are a form of revenue authorized by the State, and strictly defined and regulated through State law. The provisions of the DIFA are extensive, in order to assure that new development pays no more than its fair share of the costs and that impact fees are not used to solve existing service deficiencies.

This Methodology Report presents the calculations used to determine new development's fair share of the investment in public safety, parks, and roads. This report establishes clear public policies regarding infrastructure development and ensures sound fiscal planning for capital improvements. The report identifies the need for new facilities and includes a compilation of the capital facilities on which impact fee revenue can be spent. One document required for the collection of impact fees is called the Capital Improvements Element (CIE); the CIE is an edited version of this report. The CIE is adopted as a chapter, or “element”, in the City's Comprehensive Plan. As defined by DIFA, the CIE must include certain calculations and information, and those are also included in this report. The calculations and information, repeated for each category of public facility for which an impact fee will be charged, are:

- a **projection of needs** for the planning period of the adopted Comprehensive Plan;
- the designation of **service areas** - the geographic area in which a defined set of public facilities provide service to development within the area;
- the designation of **levels of service** (LOS) - the service level that will be provided;
- a **schedule of improvements** listing impact fee related projects and costs for the planning period of the adopted Comprehensive Plan; and
- a description of **funding sources** for the planning period of the adopted Comprehensive Plan.

Categories for Assessment of Impact Fees

To assist in paying for the high costs of expanding public facilities and services to meet the needs of projected growth and to ensure that new development pays a reasonable share of the costs of public facilities, Locust Grove is studying the enactment of impact fees for parks, public safety, and road facilities. The sections in this Methodology Report provide population and employment forecasts and detailed information regarding the inventory of current facilities, the level of service, and detailed calculations of the impact cost for parks, police protection, and roads.

Eligible Facilities

The following table shows the facility categories that are eligible for impact fee funding under Georgia law and that are considered in this report. The service area for each public facility category—that is, the geographical area served by the facility category—is also given, along with the standard adopted as the level of service to be delivered for each facility category. Whether or not an existing deficiency exists is also shown for each category.

Table S-1
Overview of Impact Fee Program - Facilities
Locust Grove

	Police	Parks and Recreation	Roads
Eligible Facilities	Facility space	Park land and developed components (ballfields, football fields, etc.)	Road projects providing new trip capacity
Service Area	City-wide	City-wide	City-wide
Level of Service Standards	Square footage of facilities per functional population	Number of developed components per dwelling unit	LOS "D" for entire road network
Existing Deficiency	No	No	Yes (trip capacity)
Historic Funding Source(s)	General Fund	General Fund	General Fund, GDOT

Terms used in **Table S-1**:

Eligible Facilities under the State Act are limited to capital items having a life expectancy of at least ten years, such as land and buildings. Impact fees cannot be used for the maintenance, supplies, personnel salaries, or other operational costs, or for short-term capital items such as computers, furniture or automobiles. None of these costs are included in the impact fee system.

Service Areas are the geographic areas that the facilities serve, and the areas within which the impact fee can be collected. Monies collected in a service area for a particular type of facility may only be spent for that purpose, and only for projects that serve that service area.

Level of Service Standards are critical to determining new development's fair share of the costs. The same standards must be applied to existing development as well as new to assure that each is paying only for the facilities that serve it. New development cannot be required to pay for facilities at a higher standard than that available to existing residents and businesses, nor to subsidize existing facility deficiencies.

Table S-2, below, presents a summary of the anticipated funding sources for capital improvement projects in each facility category. The final row—the “shortfall”—is the net amount that could be collected from new growth in the form of impact fees.

Table S-2
Overview of Impact Fee Program - Funding
Locust Grove

FUNDING	Police	Parks & Rec	Roads	SUMMARY
Total Capital Investment	\$ 5,944,328	\$ 17,041,600	\$ 133,771,063	\$ 156,756,991
Outside Funding Sources	\$ -	\$ -	\$ 107,016,850	\$ 107,016,850
Local Capital Investment	\$ 5,944,328	\$ 17,041,600	\$ 26,754,213	\$ 49,740,141
Funding Responsibility:				
State Aid	\$ -	\$ -	\$ 107,016,850	\$ 107,016,850
Existing Tax Base	\$ 1,639,471	\$ 278,005	\$ 4,667,617	\$ 6,585,093
New Growth	\$ 4,304,857	\$ 16,763,595	\$ 22,086,596	\$ 43,155,048
New Growth Revenue:				
Taxes	\$ 3,019,546	\$ 141,363	\$ 4,293,061	\$ 7,453,969
Shortfall	\$ (1,285,311)	\$ (16,622,232)	\$ (17,793,535)	\$ (35,701,079)

Review Requirement

A number of the factors that form the base-line assumptions in this report’s impact cost calculations may change over time. The impact fee methodologies for the service areas should be reviewed annually, and should reflect changes in the growth and development of the city. Also, the fiscal elements of the impact fee system should be brought up to current dollars each year.

- The “planning horizon” of this methodology report is 2025; this matches the “horizon” of the City’s next *Comprehensive Plan* update. In another five years, when the *Comprehensive Plan* is again updated, the methodology report (and impact fee methodologies) should be reviewed and updated as needed to meet any new “horizon”.
- The amount of future tax revenue generated by future growth is directly related to the City’s population and employment forecasts. These forecasts should be reviewed every year against other data, such as building permits and utility hook-ups, to confirm continuing validity or to modify the methodologies.
- Employment and population forecasts in this report were created specifically for this report; any future changes to those figures should be reflected in the impact cost calculations.
- Costs should be maintained in present value terms. The land costs for public safety facilities and parks, as well as the square footage construction costs, should be updated annually. Changes in road project cost estimates should be reflected as well.

- Projections in tax base growth should be updated each year to reflect actual growth, and to update the average new house values and value/employee then current in future years.
- Any changes in funding strategy for the facilities included in the impact fee program should be reflected in the impact fee calculation. For example, the City anticipates entering into a lease agreement with GMA in order to fund the construction of a new police and district court facility. Once this agreement is in place the credit calculations should be re-examined. Debt service, for the impact fee eligible portion of the project, can be recouped through impact fee collection.
- New revenue sources, such as funds from a SPLOST program, should be reviewed for potential tax credits against impact fees.

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

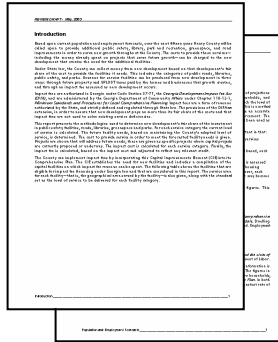
Investment Recovery

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

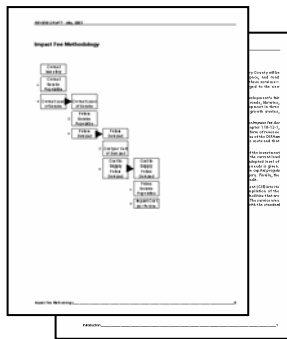
Because the amount of dollars eligible to be recovered through an impact fee is based on the capacity available to support future growth and development within the whole system, a value for the existing system must be determined if excess capacity exists. If there is excess capacity available in the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

Organization of the Report

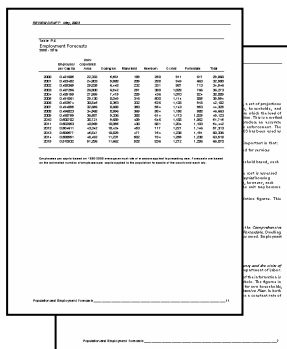
The *Impact Fee Methodology Report* is organized in such a way that the calculation of impact fees (discussed in detail in the next section) proceeds through the document in the same order that the calculations are undertaken. The illustration below describes the sections that make up the report.



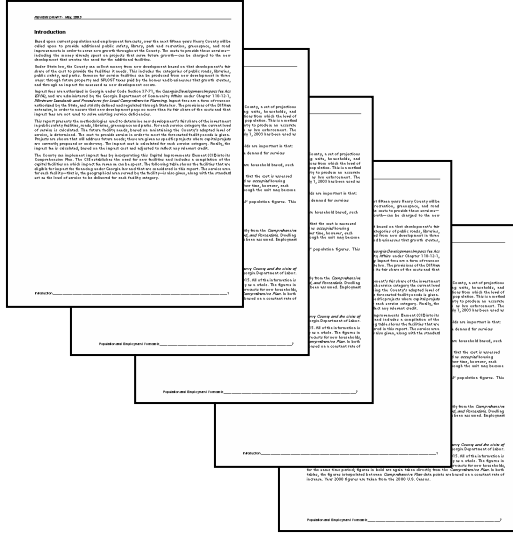
Introduction – this section introduces and summarizes the calculation of impact fees, as well as the requirements for adoption and maintenance of the impact fee program. It includes an **Overview of the Impact Fee Program**, and concludes with the schedule of **Maximum Impact Fees**.



Methodology – this section outlines the calculations and data required for impact fee calculation, including information on level of service and service area considerations.



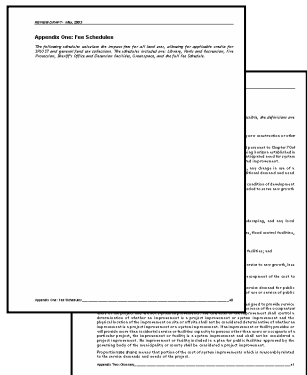
Forecasts – this section presents the population, dwelling unit, and employment forecasts for the city and the specific service areas. A forecast of the tax digest value is also presented.



Public Facility Category Chapters – these sections walk through the calculation of level of service, existing deficiency, future demand, and assignment of project costs. The public facility categories covered are **police protection, parks and recreation, and road improvements**. Each section ends with the calculation of an impact cost, the relevant credit against future taxes, and the resulting impact fee.



Other Fees and Charges – this section presents information about other possible fees, fees for program administration, and a surcharge for the recoupment of the cost to prepare the CIE.



Appendix – the appendix presents a **glossary** of terms used in the report.

Maximum Impact Fee Schedule

The fee schedule that follows presents the maximum impact fee that could be charged in Locust Grove for each of the land use categories shown, based on the calculations carried out in this report. The net impact fee shown for each public facility category reflects the reductions for the credit based upon anticipated general fund contributions from new development, where applicable. The total impact fee shown in the last column includes a 3% fee for administration of the Impact Fee Program, as well as a charge of 0.743% for recoupment of the cost to prepare the CIE.

The categories included are: Parks and Recreation, Police Protection, and Roads. To read the table, first find the land use you want to investigate. Land uses are listed on the left side of the table, and are grouped into categories. For example, industrial and warehouse uses are grouped together, as are all retail uses. Next, find the figure on the far right of the row. This is the total impact fee per unit of measure. Finally, find the unit of measure—it is the last column of the land use category. The information can be read as follows: *this land use has an impact fee of \$X per unit of measure.*

Individual Fee Assessment

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

Interpretation

Listed in the following fee schedules are the most common land uses as identified in the *Trip Generation Manual*, Sixth Edition, 1997, Institute of Transportation Engineers (ITE). Persons per land use for residential uses are determined based on average numbers of persons per household; for non-residential land uses the average number of employees per unit of measure is based on data provided in the ITE *Trip Generation Manual*. As it is impossible, and impractical, to list every possible land use type, following is the methodology that will be used to determine employment for land uses that are not on the actual fee table.

Developer Uncertainty with Respect to Land Use Type:

The nomenclature used in the fee schedules may be different from that used by developers. For example, a developer may be building a 35,000 square foot grocery store, but does not see a grocery store on the fee schedule. In this situation, the applicable fee would be found under "supermarket." Simply inquiring to the City should clarify any such uncertainty. However, reference to a source document, such as the *Standard Industrial Classification Manual* or the *North American Industrial Classification System* (both from the U.S. Government Printing Office), may be helpful as an objective means of distinguishing among the types of land uses set out in the schedules.

For land uses not specified, an office use is set at the same rate as a general office building, retail is set at the same as specialty retail uses, and industrial uses are assumed to be the same as general light industry. For example, a retail land use that does not appear on the impact fee schedule, such as a stained-glass shop, would be assessed the same fee as 'specialty retail'.

LOCUST GROVE MAXIMUM ALLOWABLE IMPACT FEE SCHEDULE

Land Use Category	Parks & Recreation	Police Protection	Roads	Subtotal	Adminis- tration (3%)	CIE Prep (0.74%)*	TOTAL	Unit of Measure
<i>Residential</i>								
Single-Family Detached Housing	\$1,215.97	\$60.83	\$167.60	\$1,444.40	\$43.33	\$10.73	\$1,498.47	per dwelling
Apartment	\$1,215.97	\$60.83	\$117.34	\$1,394.14	\$41.82	\$10.36	\$1,446.33	per dwelling
Residential Condominium/Townhouse	\$1,215.97	\$60.83	\$103.71	\$1,380.51	\$41.42	\$10.26	\$1,432.19	per dwelling
<i>Port and Terminal</i>								
Truck Terminal		\$281.03	\$1,333.51	\$1,614.53	\$48.44	\$12.00	\$1,674.97	per acre
<i>Industrial</i>								
General Light Industrial		\$55.36	\$113.49	\$168.84	\$5.07	\$1.25	\$175.16	per 1000 sq. ft.
General Heavy Industrial		\$43.87	\$24.42	\$68.30	\$2.05	\$0.51	\$70.85	per 1000 sq. ft.
Manufacturing		\$43.63	\$62.20	\$105.83	\$3.17	\$0.79	\$109.79	per 1000 sq. ft.
Warehousing		\$30.58	\$80.76	\$111.34	\$3.34	\$0.83	\$115.51	per 1000 sq. ft.
Mini-Warehouse		\$1.07	\$40.71	\$41.77	\$1.25	\$0.31	\$43.33	per 1000 sq. ft.
High-Cube Warehouse		\$4.36	\$1.95	\$6.31	\$0.19	\$0.05	\$6.55	per 1000 sq. ft.
<i>Lodging</i>								
Hotel		\$14.92	\$93.14	\$108.06	\$3.24	\$0.80	\$112.11	per room
All Suites Hotel		\$17.03	\$65.16	\$82.19	\$2.47	\$0.61	\$85.26	per room
Business Hotel		\$2.40	\$75.91	\$78.31	\$2.35	\$0.58	\$81.24	per room
Motel		\$17.06	\$95.12	\$112.18	\$3.37	\$0.83	\$116.38	per room
<i>Recreational</i>								
Campground/Recreational Vehicle Park		\$1.61	\$1,118.92	\$1,120.53	\$33.62	\$8.33	\$1,162.47	per camp site
Golf Course		\$5.89	\$75.82	\$81.71	\$2.45	\$0.61	\$84.77	per acre
Multipurpose Recreational Facility		\$11.99	\$1,359.61	\$1,371.60	\$41.15	\$10.19	\$1,422.94	per acre
Movie Theater		\$35.92	\$1,174.28	\$1,210.20	\$36.31	\$8.99	\$1,255.50	per 1000 sq. ft.
Arena		\$79.94	\$501.39	\$581.33	\$17.44	\$4.32	\$603.09	per acre
Amusement Park		\$218.14	\$1,139.68	\$1,357.82	\$40.73	\$10.09	\$1,408.64	per acre
Tennis Courts		\$5.85	\$244.60	\$250.45	\$7.51	\$1.86	\$259.83	per acre
Racquet Club		\$8.74	\$257.84	\$266.58	\$8.00	\$1.98	\$276.56	per 1000 sq. ft.
Bowling Alley		\$23.98	\$501.39	\$525.38	\$15.76	\$3.90	\$545.04	per 1000 sq. ft.
Recreational Community Center		\$20.14	\$344.19	\$364.33	\$10.93	\$2.71	\$377.97	per 1000 sq. ft.
<i>Institutional</i>								
Private School (K-12)		\$194.00	\$77.87	\$271.87	\$8.16	\$2.02	\$282.04	per 1000 sq. ft.
Church/Synagogue		\$12.35	\$145.11	\$157.46	\$4.72	\$1.17	\$163.35	per 1000 sq. ft.
Day Care Center		\$60.95	\$1,038.03	\$1,098.98	\$32.97	\$8.17	\$1,140.12	per 1000 sq. ft.
Cemetery		\$1.95	\$75.34	\$77.29	\$2.32	\$0.57	\$80.19	per acre
Lodge/Fraternal Organization		\$23.98	\$747.03	\$771.02	\$23.13	\$5.73	\$799.88	per employee

Land Use Category	Parks & Recreation	Police Protection	Roads	Subtotal	Adminis-	CIE Prep	TOTAL	Unit of Measure
					tration	(0.74%)*		
					(3%)			
<i>Medical</i>								
Hospital		\$77.85	\$228.67	\$306.52	\$9.20	\$2.28	\$317.99	per 1000 sq. ft.
Nursing Home		\$15.53	\$34.64	\$50.18	\$1.51	\$0.37	\$52.06	per bed
Clinic		\$23.98	\$105.61	\$129.60	\$3.89	\$0.96	\$134.45	per employee
<i>Office</i>								
General Office Building		\$79.54	\$179.27	\$258.81	\$7.76	\$1.92	\$268.49	per 1000 sq. ft.
Corporate Headquarters Building		\$81.57	\$125.70	\$207.27	\$6.22	\$1.54	\$215.03	per 1000 sq. ft.
Single-Tenant Office Building		\$76.66	\$188.38	\$265.04	\$7.95	\$1.97	\$274.96	per 1000 sq. ft.
Medical-Dental Office Building		\$97.26	\$492.36	\$589.62	\$17.69	\$4.38	\$611.69	per 1000 sq. ft.
Research and Development Center		\$70.22	\$132.05	\$202.27	\$6.07	\$1.50	\$209.84	per 1000 sq. ft.
<i>Retail</i>								
Building Materials and Lumber Store		\$35.26	\$569.26	\$604.52	\$18.14	\$4.49	\$627.15	per 1000 sq. ft.
Free-Standing Discount Superstore		\$23.03	\$623.32	\$646.35	\$19.39	\$4.80	\$670.54	per 1000 sq. ft.
Specialty Retail Center		\$43.63	\$352.69	\$396.32	\$11.89	\$2.95	\$411.15	per 1000 sq. ft.
Free-Standing Discount Store		\$47.10	\$611.36	\$658.46	\$19.75	\$4.89	\$683.11	per 1000 sq. ft.
Hardware/Paint Store		\$23.12	\$363.09	\$386.21	\$11.59	\$2.87	\$400.67	per 1000 sq. ft.
Nursery (Garden Center)		\$39.10	\$517.22	\$556.32	\$16.69	\$4.13	\$577.15	per 1000 sq. ft.
Nursery (Wholesale)		\$39.97	\$559.08	\$599.05	\$17.97	\$4.45	\$621.48	per 1000 sq. ft.
Shopping Center		\$40.05	\$240.26	\$280.32	\$8.41	\$2.08	\$290.81	per 1000 sq. ft.
Factory Outlet Center		\$40.05	\$381.18	\$421.23	\$12.64	\$3.13	\$437.00	per 1000 sq. ft.
Quality Restaurant		\$178.93	\$1,305.38	\$1,484.31	\$44.53	\$11.03	\$1,539.87	per 1000 sq. ft.
High-Turnover (Sit-Down) Restaurant		\$178.93	\$1,822.33	\$2,001.26	\$60.04	\$14.87	\$2,076.17	per 1000 sq. ft.
Fast-Food Restaurant		\$261.44	\$4,741.37	\$5,002.81	\$150.08	\$37.18	\$5,190.07	per 1000 sq. ft.
Quick Lubrication Vehicle Shop		\$50.37	\$587.57	\$637.94	\$19.14	\$4.74	\$661.82	per service bay
Auto-Care Center		\$34.30	\$36.19	\$70.49	\$2.11	\$0.52	\$73.13	per 1000 sq. ft.
New Car Sales		\$42.55	\$524.30	\$566.85	\$17.01	\$4.21	\$588.07	per 1000 sq. ft.
Auto Parts Store		\$23.03	\$909.42	\$932.44	\$27.97	\$6.93	\$967.34	per 1000 sq. ft.
Self-Service Car Wash		\$4.80	\$764.55	\$769.35	\$23.08	\$5.72	\$798.15	per stall
Tire Store		\$30.70	\$365.32	\$396.02	\$11.88	\$2.94	\$410.85	per 1000 sq. ft.
Wholesale Tire Store		\$30.70	\$299.07	\$329.78	\$9.89	\$2.45	\$342.12	per 1000 sq. ft.
Supermarket		\$30.46	\$1,243.31	\$1,273.76	\$38.21	\$9.47	\$1,321.44	per 1000 sq. ft.
Convenience Market (Open 24 Hours)		\$43.17	\$5,224.37	\$5,267.54	\$158.03	\$39.15	\$5,464.72	per 1000 sq. ft.
Convenience Market (Open 15-16 Hours)		\$41.97	\$4,489.62	\$4,531.59	\$135.95	\$33.68	\$4,701.22	per 1000 sq. ft.
Convenience Market with Gasoline Pumps		\$43.17	\$5,986.16	\$6,029.33	\$180.88	\$44.81	\$6,255.02	per 1000 sq. ft.
Wholesale Market		\$19.66	\$72.66	\$92.32	\$2.77	\$0.69	\$95.77	per 1000 sq. ft.
Discount Club		\$31.13	\$451.26	\$482.39	\$14.47	\$3.59	\$500.45	per 1000 sq. ft.
Home Improvement Superstore		\$23.03	\$465.24	\$488.26	\$14.65	\$3.63	\$506.54	per 1000 sq. ft.
Electronics Superstore		\$23.03	\$645.66	\$668.69	\$20.06	\$4.97	\$693.72	per 1000 sq. ft.
Apparel Store		\$40.05	\$575.82	\$615.88	\$18.48	\$4.58	\$638.93	per 1000 sq. ft.
Pharmacy/Drugstore		\$40.05	\$764.52	\$804.58	\$24.14	\$5.98	\$834.70	per 1000 sq. ft.
Furniture Store		\$9.96	\$72.54	\$82.49	\$2.47	\$0.61	\$85.58	per 1000 sq. ft.
<i>Services</i>								
Drive-in Bank		\$87.39	\$2,863.14	\$2,950.53	\$88.52	\$21.93	\$3,060.98	per 1000 sq. ft.

*CIE prep category is a recoupment of the expenditure of preparing the Capital Improvements Element.
Impact Fees reflect credit given for forecasted SPLOST and general fund contributions.

Impact Fee Methodology

Introduction

In this section, the methodology of impact fee calculation, as carried out in this report, is outlined. The maximum impact fee allowable is calculated. Without an understanding of the philosophy behind the work, the calculations can be somewhat confusing. The bottom line is that a **rational nexus**—a clear and fair relationship between the fee charged and the services provided—must exist for each public facility category. It is perhaps wise to keep in mind the basic tenet of impact fees:

New development pays its fair share of the costs to provide services to new development.

The calculations carried out in this report are intended to meet two inter-related goals: calculating the “fair share” of project costs applicable to new development, and meeting the requirements of the *Development Impact Fee Act*. The DIFA provides a series of protections for development. In addition to providing the methodological basis for impact fee calculations, it protects new development against the possibility of double-taxation, and against being required to provide for a different level of service than that adopted for existing development.

Data Requirements

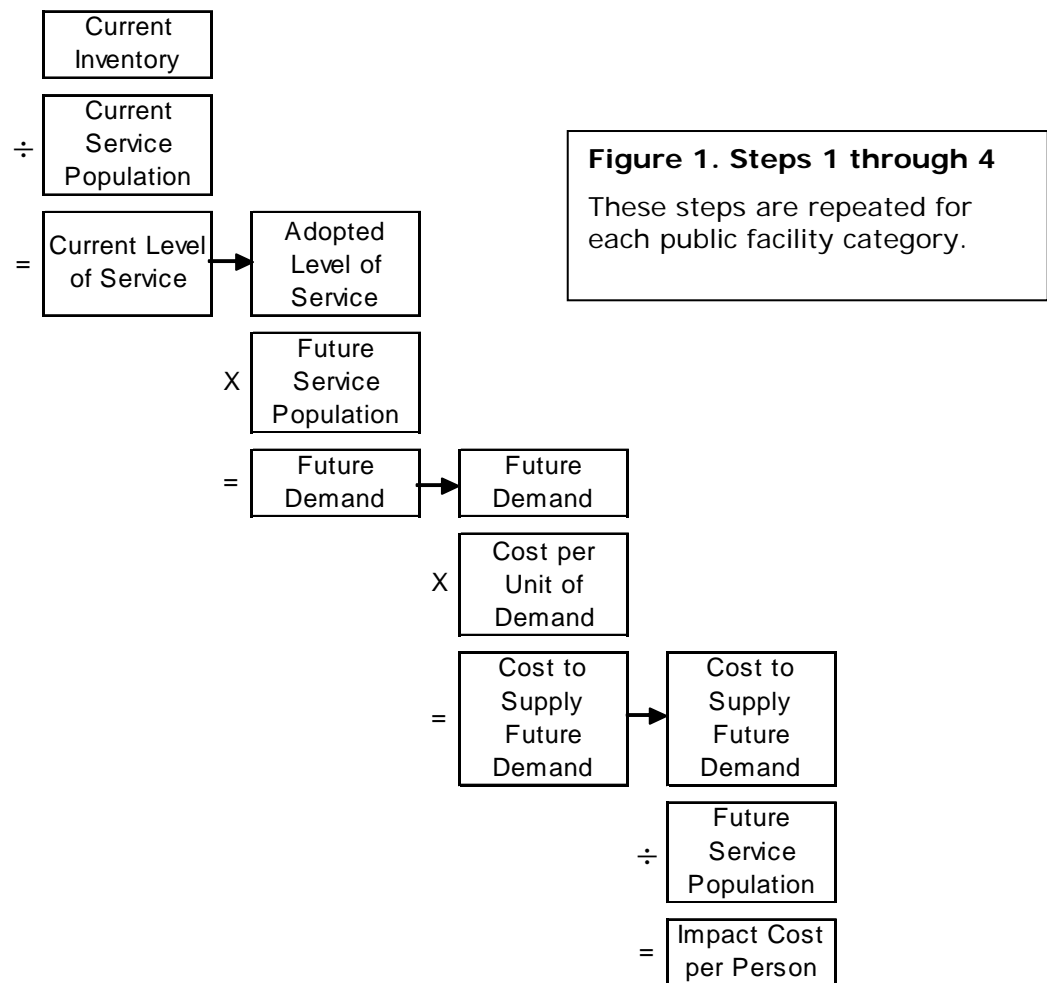
In order to calculate impact fees certain data is required. All of this data can be seen in the applicable sections of this report. Required for calculations are the following:

- Current population, dwelling unit, and employment figures (appears in the “Forecasts” section).
- Forecasts of population, dwelling units, and employment (appears in the “Forecasts” section).
- Current tax digest value (appears in the “Forecasts” section).
- Forecasts of tax base growth (appears in the “Forecasts” section).
- Forecasts of SPLOST collections (where applicable).
- Current inventories of capital facilities in the categories of police protection, parks and recreation, and roads (appears in each public facility category section).
- Proposed capital improvement projects to meet future demand (appears in each public facility category section).

Given this data, calculations can be made to produce the impact cost in each public facility category, and the maximum allowable impact fee.

Impact Cost Calculation

The following illustration outlines the general steps undertaken for impact cost calculation. This is the series of calculations that appears in each public facility category chapter. Note that the “service population” depends upon the public facility category being examined. For example, police protection services are provided to the residents and employees in the city, while park services are provided to just the residential population of the city. Decisions must be made regarding certain parts of the calculation. In terms of level of service, the city must determine whether or not the current level of service is adequate to serve the current population.



The following steps, outlined in the illustration above, are undertaken in order to calculate the impact cost for each public facility category:

1. The current inventory of eligible facilities providing service is divided by the current population served by those facilities to produce the current level of service. For example, the total square footage of the police station, divided by the population and employment served by that station, produces a square foot per person level of service.

The current level of service can be adopted by the city as the level of service standard. Alternately, the city may determine that the adopted level of service should be higher or lower than the current level of service. Adopting a higher level of service creates an existing deficiency that must be made up by the existing service population; decreasing the level of service creates excess capacity in the system that can be recouped through impact fee collection.

2. The adopted level of service is then multiplied by the future population to be served in order to produce the future demand figure. Continuing the police protection facilities example, the square foot per person level of service is multiplied by the increase in population and employment in the area of the city served by the police department between 2005 and 2025 to produce a future demand figure in square feet.
3. The future demand figure is multiplied by the cost per unit for future facilities to calculate the cost to supply services that meet future demand. This is an incremental increase method; the average cost to supply one unit of capacity is multiplied by the number of units demanded. Staying with our example, the average cost to acquire land and construct police facility space—converted into a cost per square foot figure—is multiplied by the increase in population and employment in the area served by the fire department between 2005 and 2025, producing the cost to supply services to that increase in population and employment.

Alternately, a methodology based on known or estimated costs can be used instead of the incremental increase method. In this method, the step "*future demand X cost per unit of demand = cost to supply future demand*" is omitted. Instead, projects are selected that will meet the future demand. Where estimated costs for planned projects are available those figures are used in place of average cost per unit. Where debt service is known, or can be reasonably estimated, those costs can also be included. Finally, the value of excess capacity in the system can be recouped by also including it in the 'cost to supply future demand'.

Quite often, the impact cost calculation uses a combination of the incremental increase and known costs methodologies. For example, the *Comprehensive Plan* lists facilities to be built in the near term (known costs). But over the planning horizon (10-20 years) more facilities may be demanded than will be provided by the proposed facilities. Future projects, based on incremental increase project cost forecasting, would be proposed in order to serve future growth.

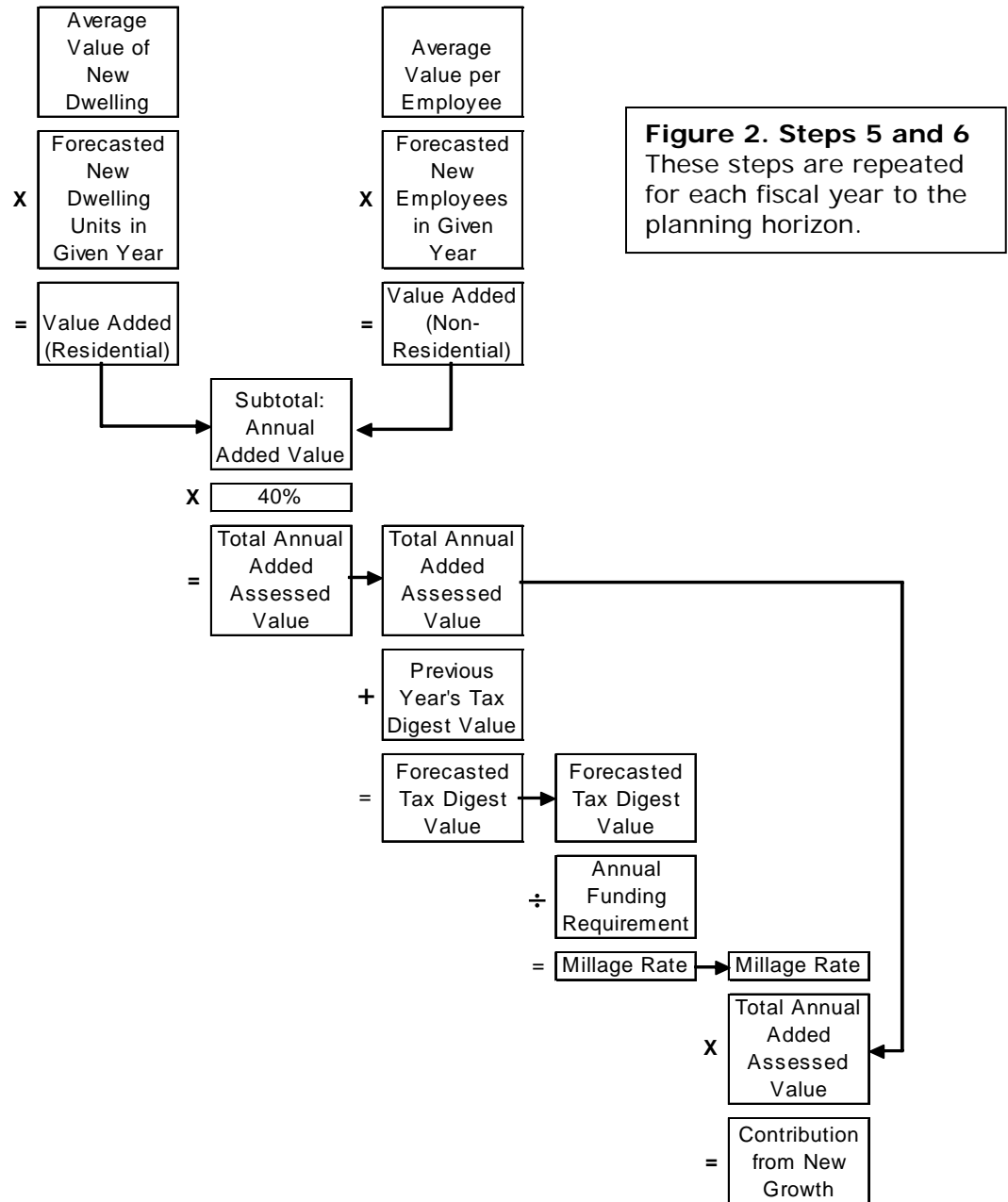
4. The cost to supply future demand is divided by the population to be served to produce an impact cost per person. To finish the example, the cost to construct demanded police station space is divided by the increase in population and employment in the area served by the police department between 2005 and 2025 to produce an impact cost per person.

Impact Fee Calculation

Each of the public facility category sections in this report presents detailed calculations of the impact cost for the specific services. The impact costs in this report are not "impact fees." The impact cost and impact fee is calculated for each public facility category in the appropriate sections of this report. In calculating an impact fee, the impact cost may be increased to include financing costs of the facility, the cost of preparing the Capital Improvements Element and an administrative fee (not to exceed 3%). Conversely, the cost must be reduced to the extent that the new growth and development will pay future sales or property taxes toward financing the facility, in order to avoid double taxation. The impact fee calculation appears in the final section of this report, where credits against impact fees are calculated. The steps for moving from an impact cost to an impact fee, continuing from the impact cost calculation steps in the previous section, are as follows:

5. The estimated increase in added value to the tax base, based on forecasted population, dwelling unit and employment growth, is calculated. Added value is derived from the average new dwelling unit value and average value of new non-residential floor space per employee.

6. Any impact fee eligible projects anticipated to be financed in whole or in part through debt financing are identified. The costs to service the debt are calculated on an annual basis against the forecast tax base value, per year. The amount of taxes collected for debt service, per public facility category, is identified. In addition, any project costs expected to be met through a "pay as you go" strategy using general funds, are also included in the 'annual funding requirement'.



7. The total of funds expected to be raised through property taxes (general fund financing and debt service repayment) and SPLOST collection (if applicable), totaled by public facility category, is subtracted from the cost to supply future demand (calculated in step 4) to produce a net projects cost for each public facility category.
8. The net projects cost for each public facility category is divided by the population to be served to produce a net impact cost. This is a reiteration of step 4, but with net rather than gross projects cost. (Compare Figure 3 with Figure 1.) The net impact cost is applied to the average number of persons by specific land use to produce a schedule of impact costs for the public facility category.

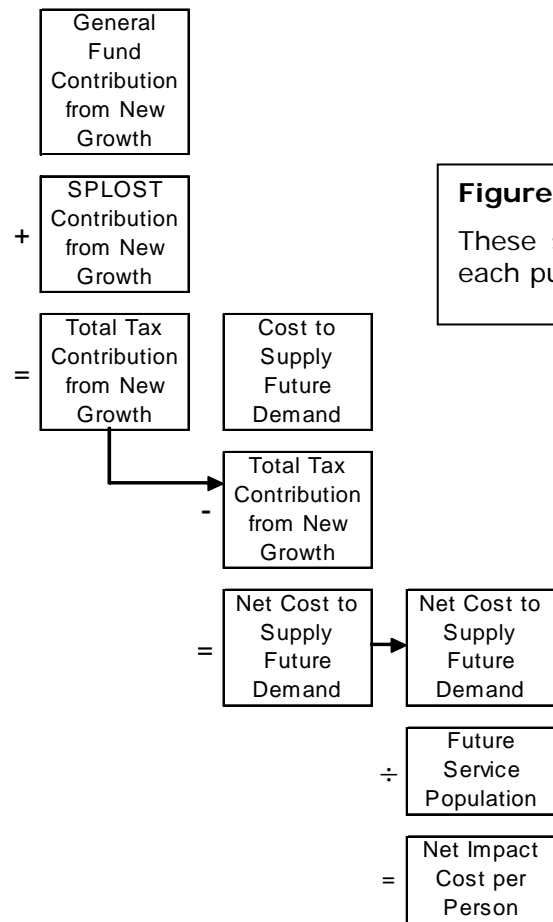
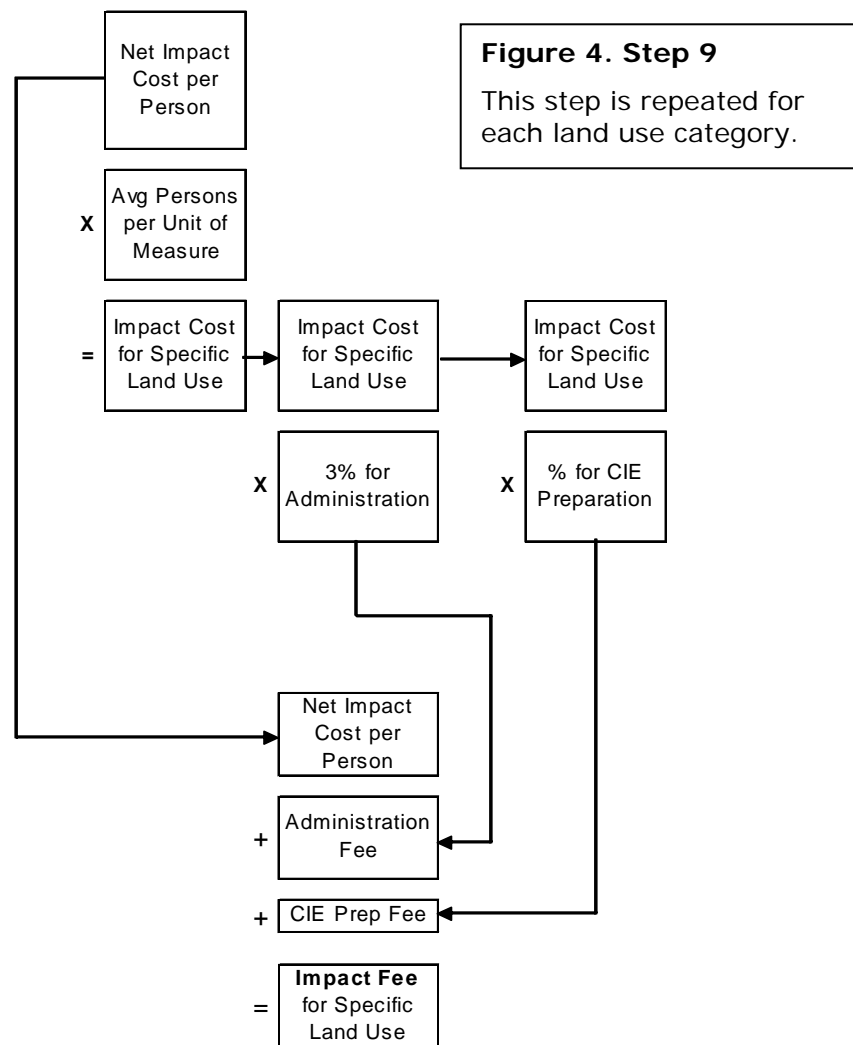


Figure 3. Steps 7 and 8
 These steps are repeated for each public facility category.

9. In order to calculate the impact fee for a specific land use category the net impact cost per person, by public facility category, is multiplied by the average number of persons per unit of measure for that land use to produce the impact cost for that land use. Next, the net impact costs for all public facility categories are subtotaled by land use. This subtotal is multiplied by 3% (an administrative fee) and by a percentage for the recoupment of CIE preparation, and totaled, to produce the maximum allowable impact fee for each land use category.

In this report, the unit of measure for residential land uses is dwelling units. Population and dwelling unit forecasts provide the average number of residents per dwelling unit type (e.g. single family, multi-family). The non-residential 'average number of persons per unit of measure' is calculated, in this methodology, from data presented in the Institute of Transportation Engineer's *Trip Generation, 6th ed.* For the majority of non-residential land uses in the impact fee schedule the average number of employees per 1,000 square feet for specific land uses can be derived. Therefore, 1,000 square feet is commonly the unit of measure. Note that there are a few cases where an alternate unit of measure is used; hotels, for example, use guest rooms as a unit of measure.

The maximum allowable impact fees by land use category are shown in the **Introduction**.



Forecasts

Population and Employment Forecasts

In order to accurately calculate the demand for expanded services for the City of Locust Grove, new growth and development must be quantified in future projections. These projections include forecasts for population, households, dwelling units, and employment to the year 2025. These projections provide the base-line conditions from which the level of service calculations can be produced. Also, projections are combined to produce what is known as “functional population.” This is a method that combines resident population and employees in the city to produce an accurate picture of the total number of persons that rely on certain services, such as law enforcement. The projections as they apply to each public facility category are specified in later sections of this Report.

Accurate projections of population, households, housing units, and employment are important in that:

- Population data and forecasts are used to establish current and future demand for services standards where the Level of Service (LOS) is per capita based.
- Household data and forecasts are used to forecast future growth in the number of dwelling units.
- Dwelling unit data and forecasts relate to certain service demands that are household based, such as parks, and are used to calculate impact costs in that the cost is assessed when a building permit is issued. The number of households—defined as occupied housing units—is always smaller than the supply of available housing units. Over time, however, each housing unit is expected to become occupied by a household, even though the unit may become vacant during future re-sales or turnovers.
- Employment data is combined with population data to produce “functional population” figures. These figures represent the total number of persons receiving services, both in their homes and in their businesses, particularly from 24-hour operations such as law enforcement.

Population, Households and Dwelling Units

Population projections form the basis for all other forecasts: The number of households is derived from the population figures using the average number of people per household, while the number of dwelling units takes the number of households (i.e., the number of occupied dwelling units) and applies a vacancy factor to determine the total number of units—occupied and vacant. **Table F-1** presents the most recent forecasts for the City, made by Henry County in 2003.

Table F-1
Henry County Forecasts
2004 - 2025

Year	Population	Dwelling Units	Employment
2004	3,052	1,150	3,621
2005	3,276	1,239	3,903
2006	3,517	1,335	4,201
2007	3,776	1,439	4,516
2008	4,051	1,550	4,849
2009	4,344	1,662	5,199
2010	4,654	1,786	5,567
2011	4,980	1,912	5,953
2012	5,324	2,051	6,358
2013	5,685	2,190	6,781
2014	6,062	2,335	7,176
2015	6,457	2,488	7,571
2016	6,869	2,646	7,965
2017	7,298	2,811	8,357
2018	7,744	2,983	8,746
2019	8,207	3,162	9,131
2020	8,687	3,334	9,513
2021	9,184	3,525	9,889
2022	9,698	3,709	10,260
2023	10,230	3,913	10,626
2024	10,778	4,122	10,986
2025	11,343	4,322	11,339

Source: *Population and Employment Forecasts, Henry County Impact Fee Program*, June 2, 2003.

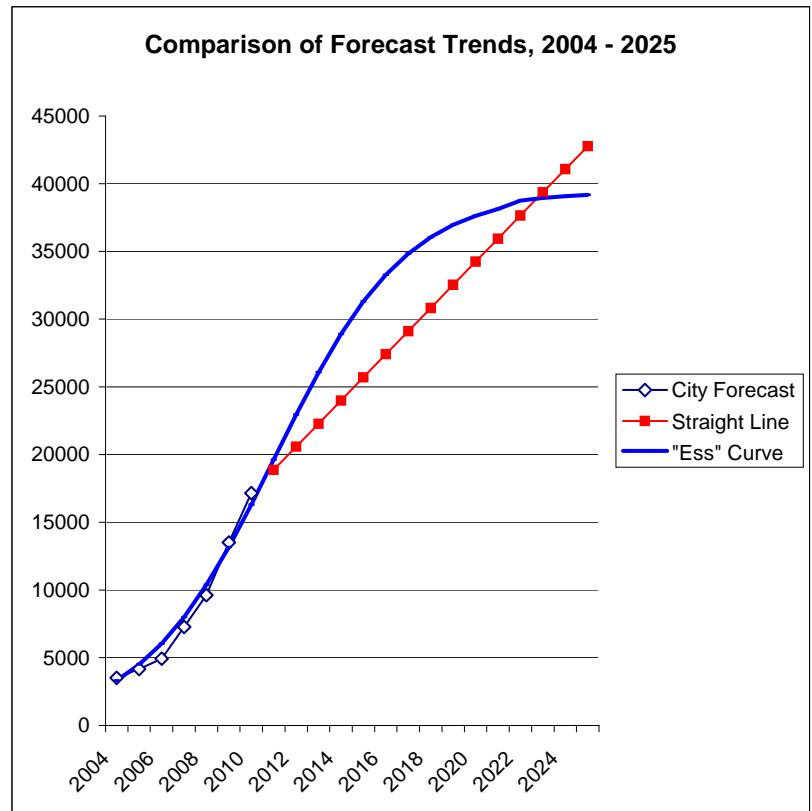
These previous forecast figures, made by the County, do not reflect the amount of growth now anticipated in the city. **Table F-2** reflects three forecasts: the 2004–2010 forecast figures provided by the City (based on projects approved and/or currently under way in the city), a straight-line forecast based on the 2004-2010 figures, and an “ess” curve forecast based on the 2004-2010 figures. By using the 2004-2010 forecast figures we have a starting point for a forecast to the planning horizon (2025). The straight-line forecast picks up at the end of the first set of figures (2011) and produces forecast figures based simply on the observed rate of change from 2004-2010, reaching a total population of 42,775 in 2025. This line reflects the recent and anticipated rapid growth in the city. Over a long period

of time, however, the straight-line forecast will not be the best way to forecast future growth, if for no other reasons than land availability and density of development will provide some future limits to growth. (Bear in mind that these forecasts are made for the current city limits; future possible annexations are not reflected in the figures and would not be reflected in impact fee calculations.)

The "ess" curve may provide us with the best representation of future residential growth. This forecast is based on a logarithmic function, using the 2004-2010 data as reference, which produces a curved rather than a straight-line forecast (see accompanying graph). This forecast predicts rapid growth in the upcoming years, followed by a slowing of residential growth toward the end of the horizon, presumably as the current city limits reach residential build-out. With a forecasted population of 39,177 in 2025, this forecast also closely reflects the City's estimated figure of 40,000 for that year.

**Table F-2
Population Forecast Trends
2004 - 2025**

Year	City Forecast	Straight Line (trend)	"Ess" Curve
2004	3,518		3,316
2005	4,160		4,505
2006	4,940		6,048
2007	7,280		7,999
2008	9,620		10,383
2009	13,520		13,180
2010	17,160		16,307
2011		18,868	19,621
2012		20,575	22,940
2013		22,283	26,081
2014		23,991	28,898
2015		25,698	31,305
2016		27,406	33,278
2017		29,114	34,842
2018		30,821	36,047
2019		32,529	36,958
2020		34,236	37,635
2021		35,944	38,132
2022		37,652	38,756
2023		39,359	38,945
2024		41,067	39,080
2025		42,775	39,177



In **Table F-3** a forecast is made of dwelling unit increases to 2025. Average household sizes convert the population living in households into the number of households. Adding the vacancy rate to the number of households yields the number of dwelling units in the city. Future average household sizes were estimated by adjusting the average household size for 2000 (from the U.S. Census) by a factor based on the observed change between 1990 and 2000 (from U.S. Census Bureau data). During the ten-year period household size declined at an annual rate of 0.17%.

By definition, a household comprises those persons occupying a dwelling unit. A vacancy rate is therefore applied to the number of households to determine the number of vacant units, which is added to the occupied number to determine the total number of dwelling units, both occupied by households and vacant. The vacancy rate used here is a constant 7%.

Table F-3
Dwelling Unit Forecasts
2005 - 2025

Year	Population	Average Household Size*	Dwelling Units**
2005	4,505	2.82	1,710
2006	6,048	2.81	2,300
2007	7,999	2.81	3,047
2008	10,383	2.80	3,962
2009	13,180	2.80	5,037
2010	16,307	2.79	6,243
2011	19,621	2.79	7,524
2012	22,940	2.79	8,812
2013	26,081	2.78	10,035
2014	28,898	2.78	11,138
2015	31,305	2.77	12,086
2016	33,278	2.77	12,869
2017	34,842	2.76	13,496
2018	36,047	2.76	13,986
2019	36,958	2.75	14,364
2020	37,635	2.75	14,652
2021	38,132	2.74	14,870
2022	38,756	2.74	15,139
2023	38,945	2.73	15,238
2024	39,080	2.73	15,316
2025	39,177	2.73	15,380

*Based on annualized observed change, 1990 - 2000.

**Based on estimated rate of 7%.

Employment Forecast

The employment forecast for the City of Locust Grove is also based on the future number of residents from the population forecast. Very little reliable historic data is available regarding employment (number of jobs) as opposed to the number of employed residents in the City of Locust Grove. Various data sources also treat employment differently, some including government employees in the various private industry types, some omitting government employees altogether, some omitting second and part-time jobs, while others count only the employees that fall under workman's compensation. The methodology used here relies on the U.S. Bureau of Economic Analysis (BEA) as a major resource.

Table F-4 outlines the calculations made to determine the ratio of employment to residential population in the city, and changes to that ratio over time. First, an estimate of the ratio of employment to residential population is calculated. Next, the observed change in this ratio is calculated. Finally, the observed change is applied to the ratio in order to estimate the number of employees, based on residential population, in a given year. In the table below these calculations are carried out. Census data for the year 2000 is used to demonstrate that the ratio of employees to residents in the city is similar to the overall ratio for the county. This is important in that while data is available at the county-

wide level, employment data specific to the city is not readily available. The next step is to calculate the observed change in employment to residential population ratio, here provided by BEA data for the years 1990 and 2000. This annual increase in employees per capita is then applied to the year 2000 Census data to produce the year 2005 employment forecast.

Table F-4
Employment Estimate - 2005
Henry County and Locust Grove, GA

	Year	Private Sector Employment	Population	Employees per Capita
Census				
Henry County	2000	60,999	119,341	0.511132
Locust Grove	2000	1,089	2,322	0.468992
Bureau of Economic Analysis				
Henry County	1990	15,501	59,885	0.258846
Henry County	2000	38,205	121,628	0.314114
Avg. Annual Increase in Employees per Capita 1990-2000				0.005527
Locust Grove Employees/Capita (2005)				0.482096
Locust Grove Projected	2005	2,172	4,505	

Table F-5 presents a forecast of the total number of jobs in the city, from 2005 to 2025. The forecast is based on the jobs per capita ratios derived from the BEA data for 1990 and 2000, during which the number of jobs per capita increased from 0.26 to 0.31. This represents an average annual increase of 0.055 jobs per capita which, continued to 2005, results in a current estimate of 0.482 jobs per capita. For future estimates, the annual increase is assumed to remain constant. Multiplying the employees per capita number times the projected total city population yields the total number of jobs for each of the forecast years. The results shown are indicative of an emerging suburban city like Locust Grove.

Table F-5
Employment Forecasts
2005 - 2025

	Population	Employees per capita	Total Employment
2005	4,505	0.482096	2,172
2006	6,048	0.484761	2,932
2007	7,999	0.487440	3,899
2008	10,383	0.490134	5,089
2009	13,180	0.492843	6,496
2010	16,307	0.495566	8,081
2011	19,621	0.498305	9,777
2012	22,940	0.501059	11,494
2013	26,081	0.503829	13,140
2014	28,898	0.506613	14,640
2015	31,305	0.509413	15,947
2016	33,278	0.512228	17,046
2017	34,842	0.515059	17,946
2018	36,047	0.517906	18,669
2019	36,958	0.520768	19,247
2020	37,635	0.523646	19,707
2021	38,132	0.526540	20,078
2022	38,756	0.529451	20,519
2023	38,945	0.532377	20,733
2024	39,080	0.535319	20,920
2025	39,177	0.538278	21,088

Forecasts are based on the estimated number of employees per capita applied to the population forecast of the city.

Functional Population Forecast

The functional population shown in **Table F-6** is a combination of the resident (population) forecast and the future employment forecast. The 'functional population' is sometimes referred to as the 'day/night' population, and is used to determine level of service standards for facilities that serve both the resident population and business employment. The police department, for instance, protects one's house whether or not they are at home, and protects stores and offices whether or not they are open for business. Thus, this 'day/night' population is a measure of the total services demanded in any 24-hour period and a fair way to allocate the costs of such a facility among all of the beneficiaries.

Table F-6
Functional Population
2005 - 2025

Year	Population	Employment	Functional Population
2005	4,505	2,172	6,677
2006	6,048	2,932	8,980
2007	7,999	3,899	11,898
2008	10,383	5,089	15,472
2009	13,180	6,496	19,676
2010	16,307	8,081	24,388
2011	19,621	9,777	29,398
2012	22,940	11,494	34,434
2013	26,081	13,140	39,221
2014	28,898	14,640	43,538
2015	31,305	15,947	47,252
2016	33,278	17,046	50,324
2017	34,842	17,946	52,788
2018	36,047	18,669	54,716
2019	36,958	19,247	56,205
2020	37,635	19,707	57,342
2021	38,132	20,078	58,210
2022	38,756	20,519	59,275
2023	38,945	20,733	59,678
2024	39,080	20,920	60,000
2025	39,177	21,088	60,265

Functional population is the combination of residential and employment forecasts.

In **Table F-7** the service area forecasts are presented for a single service area measured in two ways: city-wide dwelling units (the service area for park services) and city-wide functional population (the service area for police protection and roads). These are the figures that will be used in subsequent service category chapters to calculate impact costs and fees.

Table F-7
Service Area Forecasts
2005 - 2025

	City-wide Dwelling Units (Parks)	City-wide Functional Population (Public Safety)
2005	1,710	6,677
2006	2,300	8,980
2007	3,047	11,898
2008	3,962	15,472
2009	5,037	19,676
2010	6,243	24,388
2011	7,524	29,398
2012	8,812	34,434
2013	10,035	39,221
2014	11,138	43,538
2015	12,086	47,252
2016	12,869	50,324
2017	13,496	52,788
2018	13,986	54,716
2019	14,364	56,205
2020	14,652	57,342
2021	14,870	58,210
2022	15,139	59,275
2023	15,238	59,678
2024	15,316	60,000
2025	15,380	60,265
Net Increase, 2005-2025:		
	13,670	53,588

Tax Digest Forecast

An important component of impact fee calculations is a forecast of the expected revenues from taxes. New development pays for the capital improvements needed to serve that development through impact fees, charged at the time that the building permit is issued, as well as through future taxes that are reasonably expected to be spent for those same capital improvements. Credit must be granted for those future taxes that will be paid by new development; failure to do so would be a form of double taxation.

Secondly, some capital improvement expenditures by the City may be made for improvements to address existing deficiencies. New development cannot be charged to eliminate existing deficiencies while at the same time being charged impact fees for its own facility needs. To the extent that new development generates taxes that are used to pay for existing deficiencies in the same public facility categories as impact fees are being assessed, a credit against impact fees must be provided.

For each public facility category where a credit is due, the credit is applied equally to all new development against their impact fees by deducting the amount that will be paid through taxes from the total public facility costs that are attributable to new development. The credit to be deducted from the impact fee is calculated as the present value of the future tax stream for the years the tax will be collected, to the extent that the taxes will be expended on impact fee eligible facilities (for which impact fees are being collected) and the non-impact fee eligible portion of capital improvements. In Locust Grove, some future non-impact fee eligible capital improvements are expected to receive some portion of their funding from general fund expenditures. Credits based on future growth's contributions to this source are calculated in the appropriate service category sections.

Property owners in Locust Grove contribute to the general fund of the City through property tax payments. These payments are levied based on the budgetary demands to provide services and capital improvements throughout the city. After establishing the financial needs for the next fiscal year through a budget-setting process, the City then determines the millage¹ rate required to raise the necessary funds. The millage rate is applied against the assessed value of property, 40% of the appraised value. General fund revenues can also be used to guarantee a variety of general obligation, tax anticipation notes, or other types of loans; these financial instruments, in turn, may be used to undertake capital improvement projects.

¹ A mil is one thousandth of a cent; the millage rate is stated in dollars per one thousand dollars of assessed value.

In **Table F-8**, the value added to the tax base by new growth is calculated. New dwelling units are added at the estimated average sales price of \$155,000 (\$62,000 assessed value) per unit. Non-residential value added is calculated at an average of 500 sf per employee at an average \$145 development cost per square foot of floor area (plus one-third for equipment and fixed assets), for an estimate of \$38,546 in assessed value per employee. The value added is expressed in *assessed* value; this is 40% of the actual or appraised value. Millage rates are applied to assessed value, rather than appraised.

Table F-8
New Growth Added Value, 2004 - 2025

Year	Residential			Non-Residential			Total Annual Added Assessed Value
	Dwelling Units	New Dwelling Units	Added Assessed Value*	Employees	New Employees	Added Assessed Value**	
2004	1,326			1,687			
2005	1,710	385	\$23,843,499	2,172	485	\$18,700,628	\$42,544,127
2006	2,300	590	\$36,558,108	2,932	760	\$29,294,536	\$65,852,643
2007	3,047	747	\$46,316,210	3,899	967	\$37,281,639	\$83,597,848
2008	3,962	915	\$56,714,506	5,089	1,190	\$45,870,817	\$102,585,322
2009	5,037	1,076	\$66,690,785	6,496	1,407	\$54,219,066	\$120,909,851
2010	6,243	1,206	\$74,746,665	8,081	1,586	\$61,116,078	\$135,862,743
2011	7,524	1,281	\$79,442,539	9,777	1,696	\$65,375,811	\$144,818,350
2012	8,812	1,288	\$79,826,922	11,494	1,717	\$66,185,496	\$146,012,418
2013	10,035	1,223	\$75,846,966	13,140	1,646	\$63,448,702	\$139,295,668
2014	11,138	1,103	\$68,357,538	14,640	1,500	\$57,809,456	\$126,166,993
2015	12,086	948	\$58,771,320	15,947	1,307	\$50,382,288	\$109,153,609
2016	12,869	783	\$48,560,889	17,046	1,099	\$42,352,901	\$90,913,789
2017	13,496	627	\$38,899,011	17,946	900	\$34,682,199	\$73,581,210
2018	13,986	490	\$30,390,950	18,669	723	\$27,878,699	\$58,269,649
2019	14,364	378	\$23,406,060	19,247	578	\$22,264,107	\$45,670,167
2020	14,652	288	\$17,834,014	19,707	461	\$17,765,055	\$35,599,069
2021	14,870	218	\$13,539,339	20,078	371	\$14,285,475	\$27,824,814
2022	15,139	269	\$16,657,894	20,519	441	\$17,012,018	\$33,669,912
2023	15,238	99	\$6,158,595	20,733	214	\$8,249,789	\$14,408,384
2024	15,316	78	\$4,864,438	20,920	187	\$7,202,561	\$12,066,999
2025	15,380	64	\$3,953,167	21,088	168	\$6,469,322	\$10,422,489

*New dwelling unit value is estimated at an assessed value of \$62,000 per dwelling unit.

**Non-residential value is estimated at an assessed value of \$38,546 per employee.

In **Table F-9**, the components of the tax digest base year (2004) are shown.

Table F-9
Tax Digest - 2004
Locust Grove, GA

Category	Total Tax Digest (40% value)
Residential	\$ 52,470,240
Commercial	37,846,831
Historic	0
Agricultural	1,277,400
Preferential	0
Conservation	709,880
Industrial	2,046,803
Utility	1,626,103
Exemptions (M&O)	(822,267)
	\$ 95,154,990

Source: 2004 tax base information from the
 Locust Grove Tax Digest.

In **Table F-10**, the property tax base of the City is forecast to the year 2025. This is a combination of the tax digest base year (2004) and the annual increase in assessed value from Table F-8.

Table F-10
Tax Base Growth
2004 - 2025

Year	Tax Base (2004 Digest)	Total Annual Added Assessed Value	Total Tax Base Value
2004	\$95,154,990		
2005	\$95,154,990	\$42,544,127	\$137,699,117
2006		\$65,852,643	\$203,551,760
2007		\$83,597,848	\$287,149,609
2008		\$102,585,322	\$389,734,931
2009		\$120,909,851	\$510,644,782
2010		\$135,862,743	\$646,507,525
2011		\$144,818,350	\$791,325,876
2012		\$146,012,418	\$937,338,294
2013		\$139,295,668	\$1,076,633,962
2014		\$126,166,993	\$1,202,800,955
2015		\$109,153,609	\$1,311,954,564
2016		\$90,913,789	\$1,402,868,353
2017		\$73,581,210	\$1,476,449,563
2018		\$58,269,649	\$1,534,719,212
2019		\$45,670,167	\$1,580,389,380
2020		\$35,599,069	\$1,615,988,449
2021		\$27,824,814	\$1,643,813,263
2022		\$33,669,912	\$1,677,483,175
2023		\$14,408,384	\$1,691,891,559
2024		\$12,066,999	\$1,703,958,557
2025		\$10,422,489	\$1,714,381,046

The information in these tables will be used in the public facility category sections of this document, wherever a portion of the capital improvement costs is not impact fee eligible. Total tax base value, from Table F-10, is used to calculate the millage rate required to meet funding requirements. The value added by new residential growth, shown in Table F-8, is used for credit calculations where residential growth alone is charged impact fees. Likewise, the total added value from Table F-8 is used where impact fees would be charged to residential and non-residential growth alike.

Police Protection Facilities

Introduction

The Locust Grove Police Department provides primary response and patrol services to the entire city. All aspects of the Department's activities are administered from a central location.

Service Area

The entire city is considered a single service area for the provision of the police protection services because all residents and employees have equal access to the benefits of the program.

Level of Service

Capital expenditures by the Police Department that are impact fee eligible are limited to the provision of administrative space. The level of service is determined by an inventory of the current square footage of administrative space in the facility occupied by the Police Department. Statistics for the facility are shown in **Table P-1**. Note that the inventory provided in Table P-1 reflects the Police Department portion of total non-police and police facility space.

**Table P-1
Inventory of Police Facilities**

Facility	Square Feet
Police Department Space	2,811

LEVEL OF SERVICE CALCULATION

The level of service for police protection in Locust Grove is measured in terms of square footage per functional population in the service area. Functional population is used as a measure in that the Police Department provides a set of services to both residences and businesses in the service area. The current LOS, shown in **Table P-2**, is 0.4210 square feet of Police Department floor area per functional population.

**Table P-2
Current Level of Service Calculation**

Current Square Feet	Current Functional Population	SF/functional population
2,811	6,677	0.4210

Forecasts for Service Area

FUTURE DEMAND

Table P-3 presents the calculation carried out in order to determine the future service demand for Police Department facility space in Locust Grove. In this table the current level of service from Table P-2 is applied to future growth. The 'functional population increase' figure is calculated from Table F-7. The additional number of forecasted functional population to the year 2025 is multiplied by the proposed level of service to produce the future demand figure. New growth will require the addition of 22,561 square feet in order to maintain the adopted LOS. There is no existing deficiency.

Table P-3
Future Demand Calculation

SF/functional population	Functional Pop Increase (2005-25)	New Square Feet Demanded
0.4210	53,588	22,561

The City intends to construct a new facility that will house the Police Department as well as provide space for a district court. This facility will replace the existing space occupied by the Police Department. Of the total space in the new facility—17,820 square feet—a portion of the facility (8,498 square feet) consists of a replacement of the existing facility space (2,811 square feet) and other space to be used for non-police protection use (5,687 square feet). The remainder, 9,322 square feet, will serve new growth.

In order to meet future demand beyond the project already planned a future expansion project of 13,239 square feet is contemplated to meet future demand. **Table P-4** presents the annual forecasted square footage demand, accompanied by the proposed projects. The expansion shown here could be re-configured to be an expansion of an existing facility, a new stand-alone facility, a series of stand-alone facilities, or possibly a portion of a replacement facility. Whatever final form the project takes, a total of 22,561 new square feet are impact fee eligible.

**Table P-4
Future Facility Projects**

Year	Functional Pop Increase	SF Demanded (annual)	Running Total: SF Demanded	Project	Square Feet for New Growth
2005	0	0			
2006	2,303	970	970	New Facility*	9,322
2007	2,918	1,229	2,198		
2008	3,574	1,505	3,703		
2009	4,204	1,770	5,473		
2010	4,713	1,984	7,457		
2011	5,010	2,109	9,566		
2012	5,036	2,120	11,686		
2013	4,787	2,015	13,701		
2014	4,317	1,817	15,519		
2015	3,714	1,564	17,083	Expansion	13,239
2016	3,072	1,293	18,376		
2017	2,464	1,037	19,413		
2018	1,928	812	20,225		
2019	1,489	627	20,852		
2020	1,138	479	21,331		
2021	868	365	21,696		
2022	1,065	449	22,144		
2023	403	170	22,314		
2024	322	136	22,450		
2025	265	111	22,561		
					22,561

*The total facility will be 17,820 square feet. Of this, 5,687 s.f. is district court space and 2,811 s.f. is a replacement for existing space; the total of these square footages (8,498) is not impact fee eligible.

FUTURE COSTS

The City anticipates entering into a lease/loan agreement with the Georgia Municipal Association (GMA) to finance the new police and district court facility. In **Table P-5** the total debt service for this project is calculated, based on the expected interest rate.

Table P-5
Debt Service - New Facility
20-year Loan

Year	
	\$ 3,305,703 Principal
	\$ 171,897 Annual Payment*
2006	\$ 171,897
2007	171,897
2008	171,897
2009	171,897
2010	171,897
2011	171,897
2012	171,897
2013	171,897
2014	171,897
2015	171,897
2016	171,897
2017	171,897
2018	171,897
2019	171,897
2020	171,897
2021	171,897
2022	171,897
2023	171,897
2024	171,897
2025	171,897
	\$ 3,437,931

*Based on estimated GMA loan rate of 4%.

Future cost to meet the square footage demanded by new growth to 2025, based on the projects from Table P-4, is shown in **Table P-6**. Project cost for the first facility includes the debt service (Table P-5) while the cost for the second project is based on an estimate of \$189.32 per square foot for construction (the estimated per-square-foot construction cost of the new police and court facility). Since the proposed facility includes district court space and replacement square footage for the existing Police Department space a portion of the project (8,498 square feet) is not impact fee eligible. The remaining facility space, 9,322 square feet, represents 52% of the total space in the facility (17,820 square feet). The second project exactly meets the remainder of future demand to 2025; this project is 100% impact fee eligible. All costs are shown in current (2005) dollars.

**Table P-6
Project Costs to Meet Future Demand**

Year	Project	Square Feet	Cost*	% for New Growth	New Growth Cost
2006	New Facility	17,820	\$3,437,931	52.31%	\$1,798,451
2015	Expansion	13,239	\$2,506,397	100.00%	\$2,506,406
			\$5,944,328		\$4,304,857

*Cost for new facility includes debt service; cost for future expansion based on an average construction cost of \$189 per square foot.

Gross Impact Cost Calculation

The gross impact cost per person is calculated in **Table P-7**. This impact cost is not an “impact fee.” In calculating an impact fee, the cost must be reduced to the extent that new growth and development will pay future taxes toward financing the improvements, in order to avoid double taxation.

**Table P-7
Impact Cost Calculation**

Gross Costs Attributable to New Growth	Functional Pop Increase (2005-25)	Gross Impact COST per Person
\$4,304,857	53,588	\$80.3321

Credit Calculation

In **Table P-8** the anticipated contribution from new growth towards the cost to complete future capital facility projects is calculated. The tax base information is taken from Table F-10, and the annual funding requirement is drawn from Table P-6. The funding requirement is the portion of the capital projects that are not impact fee eligible and, in the absence of any other funding strategy, can reasonably be assumed to be funded through the general fund. In the case of the first project the non-eligible portion of the project cost has been annualized to reflect the anticipation of a lease agreement between the City and GMA to cover the total project costs. The millage rate is simply the rate required to meet the annual funding requirement with the given tax digest value. The contribution from new growth is the millage rate multiplied by the total added value shown in Table F-8. (Total added value is used since the impact fee for Police Department facilities will be levied against both residential and non-residential growth.)

Table P-8
New Growth Contribution Through Property Taxes
2005 - 2020

Year	Tax Digest*	Annual Funding Requirement	Millage Rate	New Growth Added Value**	Contribution from New Growth
2005	\$137,699,117	\$0	0.00000	\$42,544,127	\$0
2006	\$203,551,760	\$171,897	0.84449	\$108,396,770	\$91,540
2007	\$287,149,609	\$171,897	0.59863	\$191,994,619	\$114,934
2008	\$389,734,931	\$171,897	0.44106	\$294,579,941	\$129,927
2009	\$510,644,782	\$171,897	0.33663	\$415,489,792	\$139,865
2010	\$646,507,525	\$171,897	0.26588	\$551,352,535	\$146,596
2011	\$791,325,876	\$171,897	0.21723	\$696,170,886	\$151,226
2012	\$937,338,294	\$171,897	0.18339	\$842,183,304	\$154,446
2013	\$1,076,633,962	\$171,897	0.15966	\$981,478,972	\$156,704
2014	\$1,202,800,955	\$171,897	0.14291	\$1,107,645,965	\$158,298
2015	\$1,311,954,564	\$171,888	0.13102	\$1,216,799,574	\$159,421
2016	\$1,402,868,353	\$171,897	0.12253	\$1,307,713,363	\$160,237
2017	\$1,476,449,563	\$171,897	0.11643	\$1,381,294,573	\$160,818
2018	\$1,534,719,212	\$171,897	0.11201	\$1,439,564,222	\$161,239
2019	\$1,580,389,380	\$171,897	0.10877	\$1,485,234,390	\$161,547
2020	\$1,615,988,449	\$171,897	0.10637	\$1,520,833,459	\$161,775
2021	\$1,643,813,263	\$171,897	0.10457	\$1,548,658,273	\$161,946
2022	\$1,677,483,175	\$171,897	0.10247	\$1,582,328,185	\$162,146
2023	\$1,691,891,559	\$171,897	0.10160	\$1,596,736,569	\$162,229
2024	\$1,703,958,557	\$171,897	0.10088	\$1,608,803,567	\$162,297
2025	\$1,714,381,046	\$171,897	0.10027	\$1,619,226,056	\$162,356
Total New Growth Contribution, 2005-2025					\$3,019,546

*Running Total; Tax digest information taken from Table F-10.

**New growth added value figures from Table F-8.

Net Impact Fee Calculation

In calculating the net impact fee the applicable credit for future tax contributions is subtracted from the total impact fee eligible project costs to produce a net impact fee eligible project cost figure. This is shown in the first part of **Table P-9**. Using the net cost figure, the net impact fee is calculated, based on the increase in functional population between 2005 and 2025.

**Table P-9
Impact Fee Calculation**

	Total Eligible Project Costs:	\$4,304,857
	Less New Growth Contribution:	(\$3,019,546)
		\$1,285,311
	= NET Project Costs:	\$1,285,311
NET Costs		
Attributable to New Growth	Functional Pop Increase (2005-25)	Net Impact FEE per Person
\$1,285,311	53,588	\$23.9849

A final calculation, shown in **Table P-10**, is necessary in order to fairly distribute the portion of project costs that are attributable to residential growth. Under the methodology followed here, this is only required in public facility categories that serve both residential and non-residential populations. (Dwelling units are already the level of service unit of measure for the parks & recreation category.) Since it is anticipated that the average household size will change over time—it is expected to decrease, based on forecasts—a constant fee based on the number of persons per dwelling unit would be both unfair and impractical. Instead, the portion of project costs that is attributable to new residential growth is calculated and assigned to the anticipated dwelling unit increase. This is accomplished by first identifying the percentage of total service area population increase made up by new residents. This percentage is then applied to the 'Costs Attributable to New Growth' figure to produce a 'Costs Attributable to Residential Growth' figure. Finally, the 'Costs Attributable to New Residential Growth' is divided by the number of new dwelling units for that service population to produce a 'per dwelling unit' impact cost.

**Table P-10
Calculation of Dwelling Unit Fee**

Service Population Increase (2005- 25)	Residential Population Increase (2005- 25)	Residential Increase as % of Total Increase	Net Cost Attributable to New Growth	Costs Attributable to New Residential Growth	New Dwelling Units (2005-25)*	Net Impact FEE per Dwelling Unit
53,588	34,672	64.70%	\$1,285,311	\$ 831,606	13,670	\$60.8347

*The number of new dwelling units in the service area.

Fee Schedule

The fee schedule that follows presents the maximum net impact fee that could be charged in Locust Grove for the Police Department public facility category, based on the calculations carried out in this section. Police Department impact fees are collected from residential and non-residential development. Note that an administrative and CIE prep fee is added to the net fee to produce the total impact fee.

LOCUST GROVE POLICE DEPARTMENT IMPACT FEE SCHEDULE

Net Non-Residential per Capita Impact Fee: **\$23.98**

Employee data is derived from ITE's Traffic Generation Manual, 6th Ed.

CODE	LAND USE	Employees	Unit of Measure	Fee per Unit
<i>Port and Terminal (000-099)</i>				
30	Truck Terminal	11.72	acres	\$281.03
<i>Industrial/Agricultural (100-199)</i>				
110	General Light Industrial	2.31	1000 sq. ft.	\$55.36
120	General Heavy Industrial	1.83	1000 sq. ft.	\$43.87
140	Manufacturing	1.82	1000 sq. ft.	\$43.63
150	Warehousing	1.28	1000 sq. ft.	\$30.58
151	Mini-Warehouse	0.04	1000 sq. ft.	\$1.07
152	High-Cube Warehouse	0.18	1000 sq. ft.	\$4.36
<i>Residential (200-299)</i>				
210	Single-Family Detached Housing	n/a	dwelling	\$60.83
220	Apartment	n/a	dwelling	\$60.83
230	Residential Condominium/Townhouse	n/a	dwelling	\$60.83
<i>Lodging (300-399)</i>				
310	Hotel	0.62	room	\$14.92
311	All Suites Hotel	0.71	room	\$17.03
312	Business Hotel	0.10	room	\$2.40
320	Motel	0.71	room	\$17.06
<i>Recreational (400-499)</i>				
416	Campground/Recreational Vehicle Park	0.07	camp sites	\$1.61
430	Golf Course	0.25	acres	\$5.89
435	Multipurpose Recreational Facility	0.50	acres	\$11.99
443	Movie Theater	1.50	1000 sq. ft.	\$35.92
460	Arena	3.33	acres	\$79.94
480	Amusement Park	9.09	acres	\$218.14
491	Tennis Courts	0.24	acres	\$5.85
492	Racquet Club	0.36	1000 sq. ft.	\$8.74
494	Bowling Alley	1.00	1000 sq. ft.	\$23.98
495	Recreational Community Center	0.84	1000 sq. ft.	\$20.14
<i>Institutional (500-599)</i>				
521	Private School (K-12)	8.09	1000 sq. ft.	\$194.00
560	Church/Synagogue	0.52	1000 sq. ft.	\$12.35
565	Day Care Center	2.54	1000 sq. ft.	\$60.95
566	Cemetery	0.08	acres	\$1.95
591	Lodge/Fraternal Organization	1.00	employee	\$23.98
<i>Medical (600-699)</i>				
610	Hospital	3.25	1000 sq. ft.	\$77.85
620	Nursing Home	0.65	bed	\$15.53
630	Clinic	1.00	1000 sq. ft.	\$23.98

Police Department Impact Fee Schedule continued.

CODE	LAND USE	Employees	Unit of Measure	Fee per Unit
<i>Office (700-799)</i>				
710	General Office Building	3.32	1000 sq. ft.	\$79.54
714	Corporate Headquarters Building	3.40	1000 sq. ft.	\$81.57
715	Single-Tenant Office Building	3.20	1000 sq. ft.	\$76.66
720	Medical-Dental Office Building	4.05	1000 sq. ft.	\$97.26
760	Research and Development Center	2.93	1000 sq. ft.	\$70.22
<i>Retail (800-899)</i>				
812	Building Materials and Lumber Store	1.47	1000 sq. ft.	\$35.26
813	Free-Standing Discount Superstore	0.96	1000 sq. ft.	\$23.03
814	Specialty Retail Center	1.82	1000 sq. ft.	\$43.63
815	Free-Standing Discount Store	1.96	1000 sq. ft.	\$47.10
816	Hardware/Paint Store	0.96	1000 sq. ft.	\$23.12
817	Nursery (Garden Center)	1.63	1000 sq. ft.	\$39.10
818	Nursery (Wholesale)	1.67	1000 sq. ft.	\$39.97
820	Shopping Center	1.67	1000 sq. ft.	\$40.05
823	Factory Outlet Center	1.67	1000 sq. ft.	\$40.05
831	Quality Restaurant	7.46	1000 sq. ft.	\$178.93
832	High-Turnover (Sit-Down) Restauant	7.46	1000 sq. ft.	\$178.93
834	Fast-Food Restaurant	10.90	1000 sq. ft.	\$261.44
837	Quick Lubrication Vehicle Shop	2.10	service bay	\$50.37
840	Auto-Care Center	1.43	1000 sq. ft.	\$34.30
841	New Car Sales	1.77	1000 sq. ft.	\$42.55
843	Auto Parts Store	0.96	1000 sq. ft.	\$23.03
847	Self-Service Car Wash	0.20	stall	\$4.80
848	Tire Store	1.28	1000 sq. ft.	\$30.70
849	Wholesale Tire Store	1.28	1000 sq. ft.	\$30.70
850	Supermarket	1.27	1000 sq. ft.	\$30.46
851	Convenience Market (Open 24 Hours)	1.80	1000 sq. ft.	\$43.17
852	Convenience Market (Open 15-16 Hours)	1.75	1000 sq. ft.	\$41.97
853	Convenience Market with Gasoline Pumps	1.80	1000 sq. ft.	\$43.17
860	Wholesale Market	0.82	1000 sq. ft.	\$19.66
861	Discount Club	1.30	1000 sq. ft.	\$31.13
862	Home Improvement Superstore	0.96	1000 sq. ft.	\$23.03
863	Electronics Superstore	0.96	1000 sq. ft.	\$23.03
870	Apparel Store	1.67	1000 sq. ft.	\$40.05
881	Pharmacy/Drugstore	1.67	1000 sq. ft.	\$40.05
890	Furniture Store	0.42	1000 sq. ft.	\$9.96
<i>Services (900-999)</i>				
912	Drive-in Bank	3.64	1000 sq. ft.	\$87.39

These net impact fees are transferred to the Maximum Allowable Impact Fee Schedule that is included in the Introduction section of this report. Ultimately, all net fees are increased, collectively, to include the cost of preparing the Capital Improvements Element (CIE) and an administrative fee (not to exceed 3%). See the Other Fees and Charges section at the end of this report for details.

Parks and Recreation Facilities

Introduction

Public recreational opportunities are available in Locust Grove through a number of parks facilities and programs operated by the City or jointly with Henry County. Demand for recreational facilities is almost exclusively related to the city's resident population. Businesses make some use of public parks for office events, company softball leagues, etc., but the use is minimal compared to that of the families and individuals who live in the city. Thus, the parks and recreation impact fee is limited to future residential growth.

Service Area

Parks and recreational facilities are made available to the city's population without regard to the political jurisdiction within which the resident lives. In addition, the facilities are provided equally to all residents. As a general rule, future facilities will be located around the city so that all residents will have recreational opportunities available on an equal basis.

Level of Service

Capital expenditures by the Parks and Recreation Department that are impact fee eligible are limited to the provision of park acreage and park facilities (ball fields, tennis courts, etc.). **Table PR-1** provides an inventory of the acreage of parks under the control of the City in 2005. The 39 acres of developed parks is equivalent to 23.07 acres per 1,000 dwelling units. The calculation of current parks acreage level of service, as well as the calculation of certain facilities per 1,000 dwelling units, is shown in **Table PR-2**. Note that the resulting LOS for parks acreage is significantly higher than suggested national standards and existing local standards, indicating that the City currently provides a higher level of service than most of the jurisdictions in the region.

Table PR-1
Current Inventory of Park Facilities

Facility	Park Acreage
Warren Holder Park	39.45

Table PR-2
Current Level of Service Calculation

Total Park Acreage	Current Dwelling Units	AC/1,000 Dwelling Units
39.45	1,710	23.07

Component Type	Current Inventory	LOS per 1,000 Dwelling Units
Ball Fields	6	3.508
Tennis Courts	2	1.169
Football Fields	1	0.585
Trails*	1	0.585
Playgrounds	3	1.754
Shelters/Pavilions	2	1.169

*Includes multi-purpose, walking, and jogging trails.

Forecasts for Service Area

FUTURE DEMAND

The City has adopted a level of service standard for parks acreage and facilities based on intended future parks projects. Recognizing that the current LOS in each category is indicative of a higher than necessary level of service (based on the fact that the City and County have interrelated parks programs that reduce the need for duplication of services), the City has adopted an LOS lower than the current level. In **Table PR-3** the calculation of desired LOS is shown. In this table the future projects are added to the current inventory to produce a net inventory for 2025. This figure is then divided by the total number of dwelling units forecasted for 2025 (15,380 units) and divided by 1,000 in order to calculate the LOS per 1,000 dwelling units. When this LOS is applied to the current number of dwelling units (1,710 units) a current excess capacity or existing deficiency can be calculated. For example, at the desired LOS the current population would need to be served by one tennis court (1,710 dwelling units, divided by 1,000, and multiplied by 0.650 equals 1.1). There are two tennis courts in the current inventory; one tennis court is excess capacity. In a similar vein, existing deficiencies are situations where the existing inventory is insufficient to meet current demand. Since no community center currently exists in the city a portion of the proposed center would be required to meet current demand; this existing deficiency is not impact fee eligible.

**Table PR-3
Future Level of Service Determination**

Category	Current Inventory (2005)	Units to be Added (2005-25)	Net Inventory in 2025	Level of Service (2025)*	Current Deficiency	Current Excess Capacity
Park Land (acres)	39.45	135.0	174.5	11.34		20.1
Ball Fields	6	24	30	1.951		2.7
Tennis Courts	2	8	10	0.650		0.9
Football Fields	1	4	5	0.325		0.4
Trails**	1	4	5	0.325		0.4
Playgrounds	3	12	15	0.975		1.3
Shelters/Pavilions	2	8	10	0.650		0.9
Community Centers	0	1	1	0.065	0.1	

*Based on acres or components per 1,000 dwelling units.

**Includes multi-purpose, walking, and jogging trails.

Table PR-4 shows the future demand in parks acreage and facilities based on the standards calculated in Table PR-3. By 2025, new growth in Locust Grove would require 135 acres of new park land in order to maintain the adopted level of service. Required increases in park facilities are also shown. The increase in dwelling units between 2005 and 2025 is multiplied by the level of service to produce the future demand. Net new demand is based on the future demand figure, less any existing excess capacity. For example, at the adopted LOS 155.1 acres of park land will be demanded by new growth between 2005 and 2025. There is currently 20.1 acres of excess capacity. 155.1 acres demanded, less 20.1 acres of excess capacity (current acreage beyond current demand), equals a net new acreage demand of 135. Future growth's demand in park components will be met through current excess capacity and new acquisition or construction; this table reflects the new units demanded in each

category. The 'new dwelling units' figure is taken from Table F-7. There is an existing deficiency in the community centers category.

**Table PR-4
Future Demand Calculation
New Growth**

AC/1,000 Dwelling Units	Number of New Dwelling Units (2005-25)	Net New Acres Demanded*
11.34	13,670	135.0

Adopted LOS per 1,000 Dwelling Units	Net New Components Demanded (2005-2025)*	
1.951	24	Ball Fields
0.650	8	Tennis Courts
0.325	4	Football Fields
0.325	4	Trails**
0.975	12	Playgrounds
0.650	8	Shelters/Pavilions
0.065	1	Community Center

*Figures reflect future demand less any existing excess capacity.

**Includes multi-purpose, walking, and jogging trails.

Table PR-5 presents an annual and running total of parks acres demanded, based on the adopted level of service. A project is presented that would meet the future demand in park acreage. While the final configuration of this project may change, based on site restrictions and changes in park planning, ultimately a total of 135 acres is impact fee eligible.

**Table PR-5
Future Park Land Acquisition**

Year	New Dwelling Units	AC Demanded (annual)	Running Total: AC Demanded*	Project	Acres for New Growth
2005	0	0	(20)		
2006	590	6.7	(13)		
2007	747	8.5	(5)		
2008	915	10.4	5		
2009	1,076	12.2	18		
2010	1,206	13.7	31		
2011	1,281	14.5	46		
2012	1,288	14.6	60		
2013	1,223	13.9	74		
2014	1,103	12.5	87	Future Park	135
2015	948	10.8	98		
2016	783	8.9	107		
2017	627	7.1	114		
2018	490	5.6	119		
2019	378	4.3	123		
2020	288	3.3	127		
2021	218	2.5	129		
2022	269	3.0	132		
2023	99	1.1	133		
2024	78	0.9	134		
2025	64	0.7	135		
				Total Acres:	135

*Figure reflects current excess capacity.

FUTURE COSTS

In **Table PR-6** the land acquisition cost associated with the project listed in the previous table is shown. The amount of each project that is impact fee eligible is also calculated. At this time the City does not intend to recoup the value of the current excess capacity. All costs are shown in current (2005) dollars.

**Table PR-6
Land Acquisition Costs**

Year	Project	Acres	Cost*	% for New Growth	New Growth Cost
2014	Future Park	135	\$1,620,000	100.00%	\$1,620,000

*Based on an average land acquisition cost of \$12,000 per acre.

Table PR-7 is a listing of the future capital projects costs for the park facilities required in order to maintain the adopted level of service standards. Facility costs are based on cost estimates provide by the City, where available, or on historic and comparable averages. The 'units to be added' figure reflects the total number of units required to meet future demand, less any existing excess capacity (compare with the figures in Table PR-4). An existing deficiency in the community centers category is shown, and based on this deficiency a calculation is made to identify the non-eligible portion of project costs. Of the estimated cost of the center \$278,005 (11.1% of the total) is required to meet the current deficiency and is thus not impact fee eligible. There are no other existing deficiencies; each of the other facility categories has excess capacity. At this time the City does not intend to recoup the value of any current excess capacity. All costs are shown in current (2005) dollars.

**Table PR-7
Future Park Facility Costs**

Facility Type	Units to be Added (2005-2025)*	Existing Deficiency	% for New Growth	Cost per Unit**	Net Cost to New Growth	Non-Eligible Project Costs
Ball Fields	24	0.0	100.0%	\$341,000	\$8,184,000	\$0
Tennis Courts	8	0.0	100.0%	\$55,000	\$440,000	\$0
Football Fields	4	0.0	100.0%	\$462,000	\$1,848,000	\$0
Trails**	4	0.0	100.0%	\$50,000	\$200,000	\$0
Playgrounds	12	0.0	100.0%	\$160,000	\$1,920,000	\$0
Shelters/Pavilions	8	0.0	100.0%	\$41,200	\$329,600	\$0
Community Centers	1	0.1	88.9%	\$2,500,000	\$2,221,995	\$278,005
					\$15,143,595	\$278,005

*Figures reflect net new units demanded (future demand less any current excess capacity).

**Where available City cost estimates are shown; otherwise costs estimates are based on comparable facility costs.

In **Table PR-8** the impact fee eligible costs from the previous two tables are summarized.

**Table PR-8
Total Costs Attributable to New Growth
2005-2025**

Description	Total
Park Land	\$1,620,000
Park Facilities	\$15,143,595
Net Fee Eligible Costs	\$16,763,595

Gross Impact Cost Calculation

The gross impact cost per person is calculated in **Table PR-9**. This impact cost is not an "impact fee." In calculating an impact fee, the cost must be reduced to the extent that new growth and development will pay future taxes toward financing the improvements, in order to avoid double taxation.

**Table PR-9
Impact Cost Calculation**

Total Costs Attributable to New Growth	New Dwelling Units (2005-25)	Gross Impact COST per Dwelling Unit
\$16,763,595	13,670	\$1,226.3113

Credit Calculation

In **Table PR-10** the anticipated property tax contribution from new growth towards the cost to complete future capital facility projects is calculated. The tax base information is taken from Table F-10, and the non-eligible funding requirement is drawn from Table PR-7. In the absence of any other funding strategy the total non-eligible cost can be assumed to be borne by the general fund. The millage rate is simply the rate required to meet the annual funding requirement with the given tax digest value. The contribution from new growth is the millage rate multiplied by the residential added value shown in Table F-8. (Residential added value is used, rather than total added value, since the impact fee for park facilities will only be levied against residential growth.)

Table PR-10
New Growth Contribution Through Property Taxes
2005 - 2025

Year	Tax Digest*	Annual Funding Requirement	Millage Rate	Residential Added Value**	Contribution from New Growth
2005	\$137,699,117	\$0	0.00000	\$23,843,499	\$0
2006	\$203,551,760	\$0	0.00000	\$60,401,606	\$0
2007	\$287,149,609	\$0	0.00000	\$106,717,816	\$0
2008	\$389,734,931	\$0	0.00000	\$163,432,322	\$0
2009	\$510,644,782	\$0	0.00000	\$230,123,107	\$0
2010	\$646,507,525	\$0	0.00000	\$304,869,772	\$0
2011	\$791,325,876	\$0	0.00000	\$384,312,311	\$0
2012	\$937,338,294	\$0	0.00000	\$464,139,233	\$0
2013	\$1,076,633,962	\$0	0.00000	\$539,986,199	\$0
2014	\$1,202,800,955	\$0	0.00000	\$608,343,736	\$0
2015	\$1,311,954,564	\$278,005	0.21190	\$667,115,057	\$141,363
2016	\$1,402,868,353	\$0	0.00000	\$715,675,945	\$0
2017	\$1,476,449,563	\$0	0.00000	\$754,574,956	\$0
2018	\$1,534,719,212	\$0	0.00000	\$784,965,907	\$0
2019	\$1,580,389,380	\$0	0.00000	\$808,371,967	\$0
2020	\$1,615,988,449	\$0	0.00000	\$826,205,980	\$0
2021	\$1,643,813,263	\$0	0.00000	\$839,745,320	\$0
2022	\$1,677,483,175	\$0	0.00000	\$856,403,213	\$0
2023	\$1,691,891,559	\$0	0.00000	\$862,561,808	\$0
2024	\$1,703,958,557	\$0	0.00000	\$867,426,246	\$0
2025	\$1,714,381,046	\$0	0.00000	\$871,379,413	\$0
Total New Growth Contribution, 2005-2025					\$141,363

*Running Total; Tax digest information taken from Table F-10.

**Residential value added figures from Table F-8.

Net Impact Fee Calculation

In calculating the net impact fee, the applicable credit for future tax contributions (from Table PR-10) is subtracted from the total impact fee eligible project costs to produce a net impact-fee-eligible project cost figure. This is shown in the first part of **Table PR-11**. Using the net cost figure, the net impact fee is calculated, based on the increase in dwelling units between 2005 and 2025.

**Table PR-11
Impact Fee Calculation**

Total Eligible Project Costs:	\$16,763,595
Less New Growth Contribution (property tax contributions):	(\$141,363)
<hr/>	
= NET Project Costs:	\$16,622,232

NET Costs Attributable to New Growth	New Dwelling Units (2005-25)	Net Impact FEE per Dwelling Unit
\$16,622,232	13,670	\$1,215.9702

Fee Schedule

The fee schedule that follows presents the maximum net impact fee that could be charged in Locust Grove for the parks and recreation public facility category, based on the calculations carried out in this section. The total impact fee shown reflects the reductions for the credit based upon anticipated tax contributions from new development. Parks and recreation impact fees are collected from residential development only.

LOCUST GROVE PARKS AND RECREATION IMPACT FEE SCHEDULE

Net Impact Fee: **\$1,215.97**

CODE	LAND USE	Unit of Measure	Fee per Unit
<i>Residential (200-299)</i>			
210	Single-Family Detached Housing	dwelling	\$1,215.97
220	Apartment	dwelling	\$1,215.97
230	Residential Condominium/Townhouse	dwelling	\$1,215.97

These net impact fees are transferred to the Maximum Allowable Impact Fee Schedule that is included in the Introduction section of this report. Ultimately, all net fees are increased, collectively, to include the cost of preparing the Capital Improvements Element (CIE) and an administrative fee (not to exceed 3%). See the Other Fees and Charges section at the end of this report for details.

Road Improvements

Introduction

The information in this chapter is derived from, or taken directly from, a schedule of road improvements generated, modified and refined by the City with the goal of providing a level of service "D" throughout the city's road network. Level of service calculations, as well as determination of need, are based on a computer modeling process. Assignment of projects to the impact fee program has been determined by the City.

Service Area

The road network of Locust Grove is considered in its entirety by the transportation model used to generate capacity data. Improvements in any part of the network improve capacity, to some measurable extent, throughout the network. For this reason, the entire city is considered a single service area for the purposes of impact fee calculations.

Level of Service Standards

Level of service for roadways and intersections is measured on a 'letter grade' system that rates a road within a range of service from A to F. Level of service A is the best rating, representing unencumbered travel; level of service F is the worst rating, representing heavy congestion and long delays. This system is a means of relating the connection between speed and travel time, freedom to maneuver, traffic interruption, comfort, convenience and safety to the capacity that exists in a roadway. This refers to both a quantitative measure expressed as a service flow rate and an assigned qualitative measure describing parameters. *The Highway Capacity Manual, Special Report 209*, Transportation Research Board (1985), defines level of service A through F as having the following characteristics:

2. LOS A: free flow, excellent level of freedom and comfort;
3. LOS B: stable flow, decline in freedom to maneuver, desired speed is relatively unaffected;
4. LOS C: stable flow, but marks the beginning of users becoming affected by others, selection of speed and maneuvering becomes difficult, comfort declines at this level;
5. LOS D: high density, but stable flow, speed and freedom to maneuver are severely restricted, poor level of comfort, small increases in traffic flow will cause operational problems;
6. LOS E: at or near capacity level, speeds reduced to low but uniform level, maneuvering is extremely difficult, comfort level poor, frustration high, level unstable; and
7. LOS F: forced/breakdown of flow. The amount of traffic approaching a point exceeds the amount that can transverse the point. Queues form, stop & go. Arrival flow exceeds discharge flow.

The traffic volume that produces different level of service grades differs according to road type, size, signalization, topography, condition and access. Post-improvement LOS conditions are based on the City's transportation consultant's computer modeling process.

Level of Service

Capital expenditures for road improvements that are impact fee eligible are limited to the provision of roads and bridges including rights of way, traffic signals, landscaping and any local components of state or federal highways that provide new trip capacity. The adopted level of service is based on Level of Service "D" for arterials and major collector roads. This level of service is used to calculate existing

deficiencies through the transportation modeling process, and is reflected in projects that are less than 100% impact fee eligible. Impact cost calculation is based upon a list of road projects, themselves drawn from the list of potential road improvements and modified by the City.

Projects to Serve the Service Area

Projects that provide road capacity intended to serve new growth to the year 2025 by road widening, new road construction or other capacity improvements have been identified by the City and are shown in **Table R-1**. These projects are those identified from the computer modeling process as adding capacity to the road network. The modeling process also identified other road projects that will be required over time, but that do not in and of themselves add new road capacity (these are included in Table R-4).

While the projects listed in table R-1 will add capacity, they may not add new capacity beyond that necessary to meet an existing deficiency. It is important to identify what portion of each project goes toward meeting an existing deficiency in that this portion of the total project cost cannot be funded through impact fees. In **Table R-2** figures are given for the current volumes and capacities of each of the road projects from Table R-1. These figures are derived from the transportation model. Note that only one project—SR 42 from Bill Gardner Parkway to Peeksville Road—is operating at an existing (mathematical) deficiency. The excess capacity represents the available road capacity, in terms of daily trips, not used by the current volume of traffic (average annual daily traffic). Currently, the City does not intend to calculate a recoupment of the value of the excess capacity. New road construction projects do not have existing capacity or traffic volume figures since they are not yet built.

Table R-1
Future Added-Capacity Road Projects

Project	From	To	Project Type
I-75 At Locust Grove Griffin Road			Full access interchange with I-75
Bill Gardner-Peeksville Connector	Bill Gardner Pkwy.	Peeksville Rd.	4-lane new road
Leguin Mill-Grove Rd. Connector (Loop Road)	Leguin Mill Rd.	Grove Rd.	2-lane new road
Locust Rd.-Davis Rd. Connector	Locust Rd.	Davis Rd.	2-lane new road
Price Dr. Extension	Current Terminus	Indian Creek Rd.	2-lane new road
E. I-75 Frontage Rd.	Bill Gardner Pkwy.	Bethlehem Rd.	2-lane new road
Indian Creek-Tanger Blvd. Connector (Loop Road)	Indian Creek Rd.	Tanger Blvd.	2-lane new road
Bethlehem-Pine Grove Connector (Loop Road)	Bethlehem Rd.	Grove Rd.	2-lane new road
Bethlehem-Lester Mill	Bethlehem Rd.	Lester Mill Rd.	2-lane new (loop) road
Davis Lk.-Colvin	Davis Lk. Rd.	Davis Lk. Rd.	2-lane new (loop) road
Colvin-So. Bethany	Colvin Rd.	Colvin Rd.	2-lane new (loop) road
So. Bethany-Hi Hope	So. Bethany Rd.	Hi Hope Rd.	2-lane new (loop) road
Hi Hope-Leguín Mill	Hi Hope Rd.	Leguin Mill Rd.	2-lane new (loop) road
Bill Gardner Pkwy.	SR 155	Lester Mill Rd.	2 to 4 thru lanes
Bill Gardner Pkwy.	Lester Mill Rd.	Price Dr.	2 to 6 thru lanes
Bill Gardner Pkwy.	Price Dr.	SB I-75 Ramps	2 to 6 thru lanes
Bill Gardner Pkwy.	SB I-75 Ramps	Tanger Blvd.	4 to 6 thru lanes
Bill Gardner Pkwy.	Tanger Blvd.	Bill Gardner-Peeksville Conn.	4 to 6 thru lanes
Peeksville Rd.	Bill Gardner-Peeksville Conn.	Leguin Mill Rd.	2 to 4 thru lanes
Peeksville Rd.	Leguin Mill Rd.	Unity Grove Rd.	2 to 4 thru lanes
Peeksville Rd.	Unity Grove Rd.	So. Ola Rd.	2 to 4 thru lanes
Peeksville Rd.	So. Ola Rd.	Burg Rd.	2 to 4 thru lanes
SR 42	Harris Rd.	Bethlehem Rd.	2 to 4 thru lanes
SR 42	Bethlehem Rd.	Bill Gardner Pkwy.	2 to 4 thru lanes
SR 42	Bill Gardner Pkwy.	Peeksville Rd.	2 to 4 thru lanes
SR 42	Peeksville Rd.	Locust Grove Griffin Rd.	2 to 4 thru lanes
SR 42	Locust Grove Griffin Rd.	Grove/Roberts	2 to 4 thru lanes
SR 42	Grove/Roberts	Tanger Blvd.	2 to 4 thru lanes
SR 42	Tanger Blvd.	Locust Rd.	2 to 4 thru lanes
SR 42	Locust Rd.	Butts County Line	2 to 4 thru lanes
Locust Grove Griffin Rd.	Lester Mill Rd.	I-75	2 to 4 thru lanes
Locust Grove Griffin Rd.	I-75	Tanger Blvd.	2 to 4 thru lanes
Locust Grove Griffin Rd.	Tanger Blvd.	Roberts Rd.	2 to 4 thru lanes
Tanger Blvd.	Tanger Outlet Driveway	Indian Creek Rd.	2 to 4 thru lanes
Tanger Blvd.	Indian Creek Rd.	Locust Grove Griffin Rd.	2 to 4 thru lanes
Tanger Blvd.	Locust Grove Griffin Rd.	US23/SR42	2 to 4 thru lanes
Indian Creek Rd.	Lester Mill Rd.	Price Dr.	2 to 4 thru lanes
Indian Creek Rd.	Price Dr.	I-75	2 to 4 thru lanes
Indian Creek Rd.	I-75	Indian Creek-Tanger Conn.	2 to 4 thru lanes
Roberts Rd./Grove Rd.	Locust Grove Griffin Rd.	US23/SR42	2 to 4 thru lanes
Roberts Rd./Grove Rd.	US23/SR42	Jackson St.	2 to 4 thru lanes

Table R-2
Current Road Volumes and Available Excess Capacity
Added-Capacity Projects

Project	From	To	Current Capacity	Current Volume	Excess Capacity
I-75 At Locust Grove Griffin Road			0	0	0
Bill Gardner-Peeksville Connector	Bill Gardner Pkwy.	Peeksville Rd.	0	0	0
Leguin Mill-Grove Rd. Connector (Loop Road)	Leguin Mill Rd.	Grove Rd.	0	0	0
Locust Rd.-Davis Rd. Connector	Locust Rd.	Davis Rd.	0	0	0
Price Dr. Extension	Current Terminus	Indian Creek Rd.	0	0	0
E. I-75 Frontage Rd.	Bill Gardner Pkwy.	Bethlehem Rd.	0	0	0
Indian Creek-Tanger Blvd. Connector (Loop Road)	Indian Creek Rd.	Tanger Blvd.	0	0	0
Bethlehem-Pine Grove Connector (Loop Road)	Bethlehem Rd.	Grove Rd.	0	0	0
Bethlehem-Lester Mill	Bethlehem Rd.	Lester Mill Rd.	0	0	0
Davis Lk.-Colvin	Davis Lk. Rd.	Davis Lk. Rd.	0	0	0
Colvin-So. Bethany	Colvin Rd.	Colvin Rd.	0	0	0
So. Bethany-Hi Hope	So. Bethany Rd.	Hi Hope Rd.	0	0	0
Hi Hope-Leguin Mill	Hi Hope Rd.	Leguin Mill Rd.	0	0	0
Bill Gardner Pkwy.	SR 155	Lester Mill Rd.	12,150	6,800	5,350
Bill Gardner Pkwy.	Lester Mill Rd.	Price Dr.	12,150	6,900	5,250
Bill Gardner Pkwy.	Price Dr.	SB I-75 Ramps	12,150	8,200	3,950
Bill Gardner Pkwy.	SB I-75 Ramps	Tanger Blvd.	24,300	24,000	300
Bill Gardner Pkwy.	Tanger Blvd.	Bill Gardner-Peeksville Conn.	24,300	18,100	6,200
Peeksville Rd.	Bill Gardner-Peeksville Conn.	Leguin Mill Rd.	12,150	7,100	5,050
Peeksville Rd.	Leguin Mill Rd.	Unity Grove Rd.	12,150	6,100	6,050
Peeksville Rd.	Unity Grove Rd.	So. Ola Rd.	12,150	3,800	8,350
Peeksville Rd.	So. Ola Rd.	Burg Rd.	12,150	2,000	10,150
SR 42	Harris Rd.	Bethlehem Rd.	14,900	10,100	4,800
SR 42	Bethlehem Rd.	Bill Gardner Pkwy.	14,900	8,800	6,100
SR 42	Bill Gardner Pkwy.	Peeksville Rd.	14,900	18,600	(3,700)
SR 42	Peeksville Rd.	Locust Grove Griffin Rd.	14,900	12,000	2,900
SR 42	Locust Grove Griffin Rd.	Grove/Roberts	14,900	10,500	4,400
SR 42	Grove/Roberts	Tanger Blvd.	14,900	10,600	4,300
SR 42	Tanger Blvd.	Locust Rd.	14,900	13,100	1,800
SR 42	Locust Rd.	Butts County Line	14,900	13,000	1,900
Locust Grove Griffin Rd.	Lester Mill Rd.	I-75	12,150	2,200	9,950
Locust Grove Griffin Rd.	I-75	Tanger Blvd.	12,150	2,200	9,950
Locust Grove Griffin Rd.	Tanger Blvd.	Roberts Rd.	12,150	2,200	9,950
Tanger Blvd.	Tanger Outlet Driveway	Indian Creek Rd.	12,150	7,800	4,350
Tanger Blvd.	Indian Creek Rd.	Locust Grove Griffin Rd.	12,150	8,100	4,050
Tanger Blvd.	Locust Grove Griffin Rd.	US23/SR42	12,150	5,600	6,550
Indian Creek Rd.	Lester Mill Rd.	Price Dr.	12,150	300	11,850
Indian Creek Rd.	Price Dr.	I-75	12,150	300	11,850
Indian Creek Rd.	I-75	Indian Creek-Tanger Conn.	12,150	300	11,850
Roberts Rd./Grove Rd.	Locust Grove Griffin Rd.	US23/SR42	12,150	2,000	10,150
Roberts Rd./Grove Rd.	US23/SR42	Jackson St.	12,150	1,800	10,350

The next step in these calculations is to identify the net added capacity after the road improvement project is completed. This 'post-improvement added capacity' is the added capacity for each project, less any existing deficiency, and represents the portion of the project that serves new growth and is thus impact fee eligible. The added capacity calculations are carried out in **Table R-3**. Since the City is not calculating a recoupment for existing excess capacity at this time, the 'post-improvement added capacity' figure is the only portion of the project that will be used to calculate the impact fee.

Table R-3
Post-Improvement Statistics
Added-Capacity Projects

Project	From	To	Gross Added Capacity	Existing Deficiency	Post-Improvement ADDED Capacity	Added Capacity as % of Total New Capacity
I-75 At Locust Grove Griffin Road			12,150		12,150	100.00%
Bill Gardner-Peeksville Connector	Bill Gardner Pkwy.	Peeksville Rd.	29,800		29,800	100.00%
Leguin Mill-Grove Rd. Connector (Loop Road)	Leguin Mill Rd.	Grove Rd.	12,150		12,150	100.00%
Locust Rd.-Davis Rd. Connector	Locust Rd.	Davis Rd.	12,150		12,150	100.00%
Price Dr. Extension	Current Terminus	Indian Creek Rd.	12,150		12,150	100.00%
E. I-75 Frontage Rd.	Bill Gardner Pkwy.	Bethlehem Rd.	12,150		12,150	100.00%
Indian Creek-Tanger Blvd. Connector (Loop Road)	Indian Creek Rd.	Tanger Blvd.	12,150		12,150	100.00%
Bethlehem-Pine Grove Connector (Loop Road)	Bethlehem Rd.	Grove Rd.	12,150		12,150	100.00%
Bethlehem-Lester Mill	Bethlehem Rd.	Lester Mill Rd.	12,150		12,150	100.00%
Davis Lk.-Colvin	Davis Lk. Rd.	Davis Lk. Rd.	12,150		12,150	100.00%
Colvin-So. Bethany	Colvin Rd.	Colvin Rd.	12,150		12,150	100.00%
So. Bethany-Hi Hope	So. Bethany Rd.	Hi Hope Rd.	12,150		12,150	100.00%
Hi Hope-Leguín Mill	Hi Hope Rd.	Leguin Mill Rd.	12,150		12,150	100.00%
Bill Gardner Pkwy.	SR 155	Lester Mill Rd.	29,800		29,800	100.00%
Bill Gardner Pkwy.	Lester Mill Rd.	Price Dr.	44,700		44,700	100.00%
Bill Gardner Pkwy.	Price Dr.	SB I-75 Ramps	44,700		44,700	100.00%
Bill Gardner Pkwy.	SB I-75 Ramps	Tanger Blvd.	44,700		44,700	100.00%
Bill Gardner Pkwy.	Tanger Blvd.	Bill Gardner-Peeksville Conn.	44,700		44,700	100.00%
Peeksville Rd.	Bill Gardner-Peeksville Conn.	Leguin Mill Rd.	29,800		29,800	100.00%
Peeksville Rd.	Leguin Mill Rd.	Unity Grove Rd.	29,800		29,800	100.00%
Peeksville Rd.	Unity Grove Rd.	So. Ola Rd.	29,800		29,800	100.00%
Peeksville Rd.	So. Ola Rd.	Burg Rd.	29,800		29,800	100.00%
SR 42	Harris Rd.	Bethlehem Rd.	29,800		29,800	100.00%
SR 42	Bethlehem Rd.	Bill Gardner Pkwy.	29,800		29,800	100.00%
SR 42	Bill Gardner Pkwy.	Peeksville Rd.	29,800	(3,700)	26,100	87.58%
SR 42	Peeksville Rd.	Locust Grove Griffin Rd.	29,800		29,800	100.00%
SR 42	Locust Grove Griffin Rd.	Grove/Roberts	29,800		29,800	100.00%
SR 42	Grove/Roberts	Tanger Blvd.	29,800		29,800	100.00%
SR 42	Tanger Blvd.	Locust Rd.	29,800		29,800	100.00%
SR 42	Locust Rd.	Butts County Line	29,800		29,800	100.00%
Locust Grove Griffin Rd.	Lester Mill Rd.	I-75	24,300		24,300	100.00%
Locust Grove Griffin Rd.	I-75	Tanger Blvd.	24,300		24,300	100.00%
Locust Grove Griffin Rd.	Tanger Blvd.	Roberts Rd.	24,300		24,300	100.00%
Tanger Blvd.	Tanger Outlet Driveway	Indian Creek Rd.	24,300		24,300	100.00%
Tanger Blvd.	Indian Creek Rd.	Locust Grove Griffin Rd.	24,300		24,300	100.00%
Tanger Blvd.	Locust Grove Griffin Rd.	US23/SR42	24,300		24,300	100.00%
Indian Creek Rd.	Lester Mill Rd.	Price Dr.	24,300		24,300	100.00%
Indian Creek Rd.	Price Dr.	I-75	24,300		24,300	100.00%
Indian Creek Rd.	I-75	Indian Creek-Tanger Conn.	24,300		24,300	100.00%
Roberts Rd./Grove Rd.	Locust Grove Griffin Rd.	US23/SR42	24,300		24,300	100.00%
Roberts Rd./Grove Rd.	US23/SR42	Jackson St.	24,300		24,300	100.00%

New Trip Capacity Added to Road Network: 1,005,400

In **Table R-4** the full list of anticipated projects is shown, including the reconstruction projects required in order to meet the desired level of service but that don't add new measurable capacity to the network. The percentage figures from table R-3 are used to identify the impact fee eligible portion of the local costs for added capacity projects. Approximately \$22 million in local costs are impact fee eligible, out of \$27 million in total estimated local costs and \$134 million in total costs. The non-eligible local costs total an estimated \$5 million.

Table R-4
Road Improvement Project Costs

Project	From	To	Total Project Cost	Local Cost	% Impact Fee Eligible (Local Cost)	Impact Fee Eligible Project Costs	Non-eligible Local Project Costs
I-75 At Locust Grove Griffin Road			\$7,620,000	\$1,524,000	100.00%	\$1,524,000	\$0
Bill Gardner-Peeksville Connector	Bill Gardner Pkwy.	Peeksville Rd.	\$14,089,000	\$2,817,800	100.00%	\$2,817,800	\$0
Leguin Mill-Grove Rd. Connector (Loop Road)	Leguin Mill Rd.	Grove Rd.	\$1,540,000	\$308,000	100.00%	\$308,000	\$0
Locust Rd.-Davis Rd. Connector	Locust Rd.	Davis Rd.	\$1,400,000	\$280,000	100.00%	\$280,000	\$0
Price Dr. Extension	Current Terminus	Indian Creek Rd.	\$3,248,000	\$649,600	100.00%	\$649,600	\$0
E. I-75 Frontage Rd.	Bill Gardner Pkwy.	Bethlehem Rd.	\$5,600,000	\$1,120,000	100.00%	\$1,120,000	\$0
Indian Creek-Tanger Blvd. Connector (Loop Road)	Indian Creek Rd.	Tanger Blvd.	\$1,456,000	\$291,200	100.00%	\$291,200	\$0
Bethlehem-Pine Grove Connector (Loop Road)	Bethlehem Rd.	Grove Rd.	\$1,680,000	\$336,000	100.00%	\$336,000	\$0
Bethlehem-Lester Mill	Bethlehem Rd.	Lester Mill Rd.	\$1,288,000	\$257,600	100.00%	\$257,600	\$0
Davis Lk.-Colvin	Davis Lk. Rd.	Davis Lk. Rd.	\$560,000	\$112,000	100.00%	\$112,000	\$0
Colvin-So. Bethany	Colvin Rd.	Colvin Rd.	\$560,000	\$112,000	100.00%	\$112,000	\$0
So. Bethany-Hi Hope	So. Bethany Rd.	Hi Hope Rd.	\$560,000	\$112,000	100.00%	\$112,000	\$0
Hi Hope-Leguín Mill	Hi Hope Rd.	Leguin Mill Rd.	\$560,000	\$112,000	100.00%	\$112,000	\$0
Bill Gardner Pkwy.	SR 155	Lester Mill Rd.	\$7,044,500	\$1,408,900	100.00%	\$1,408,900	\$0
Bill Gardner Pkwy.	Lester Mill Rd.	Price Dr.	\$8,541,000	\$1,708,200	100.00%	\$1,708,200	\$0
Bill Gardner Pkwy.	Price Dr.	SB I-75 Ramps	\$862,313	\$172,463	100.00%	\$172,463	\$0
Bill Gardner Pkwy.	SB I-75 Ramps	Tanger Blvd.	\$1,168,000	\$233,600	100.00%	\$233,600	\$0
Bill Gardner Pkwy.	Tanger Blvd.	Bill Gardner-Peeksville Conn.	\$365,000	\$73,000	100.00%	\$73,000	\$0
Peeksville Rd.	Bill Gardner-Peeksville Conn.	Leguin Mill Rd.	\$1,460,000	\$292,000	100.00%	\$292,000	\$0
Peeksville Rd.	Leguin Mill Rd.	Unity Grove Rd.	\$3,832,500	\$766,500	100.00%	\$766,500	\$0
Peeksville Rd.	Unity Grove Rd.	So. Ola Rd.	\$3,905,500	\$781,100	100.00%	\$781,100	\$0
Peeksville Rd.	So. Ola Rd.	Burg Rd.	\$2,044,000	\$408,800	100.00%	\$408,800	\$0
SR 42	Harris Rd.	Bethlehem Rd.	\$1,861,500	\$372,300	100.00%	\$372,300	\$0
SR 42	Bethlehem Rd.	Bill Gardner Pkwy.	\$6,825,500	\$1,365,100	100.00%	\$1,365,100	\$0
SR 42	Bill Gardner Pkwy.	Peeksville Rd.	\$1,241,000	\$248,200	87.58%	\$217,383	\$30,817
SR 42	Peeksville Rd.	Locust Grove Griffin Rd.	\$1,642,500	\$328,500	100.00%	\$328,500	\$0
SR 42	Locust Grove Griffin Rd.	Grove/Roberts	\$730,000	\$146,000	100.00%	\$146,000	\$0
SR 42	Grove/Roberts	Tanger Blvd.	\$3,139,000	\$627,800	100.00%	\$627,800	\$0
SR 42	Tanger Blvd.	Locust Rd.	\$949,000	\$189,800	100.00%	\$189,800	\$0
SR 42	Locust Rd.	Butts County Line	\$5,018,750	\$1,003,750	100.00%	\$1,003,750	\$0

continued...

Table R-4 continued...

Project	From	To	Total Project Cost	Local Cost	% Impact Fee Eligible (Local Cost)	Impact Fee Eligible Project Costs	Non-eligible Local Project Costs
Locust Grove Griffin Rd.	Lester Mill Rd.	I-75	\$1,008,000	\$201,600	100.00%	\$201,600	\$0
Locust Grove Griffin Rd.	I-75	Tanger Blvd.	\$4,312,000	\$862,400	100.00%	\$862,400	\$0
Locust Grove Griffin Rd.	Tanger Blvd.	Roberts Rd.	\$952,000	\$190,400	100.00%	\$190,400	\$0
Tanger Blvd.	Tanger Outlet Driveway	Indian Creek Rd.	\$2,912,000	\$582,400	100.00%	\$582,400	\$0
Tanger Blvd.	Indian Creek Rd.	Locust Grove Griffin Rd.	\$1,904,000	\$380,800	100.00%	\$380,800	\$0
Tanger Blvd.	Locust Grove Griffin Rd.	US23/SR42	\$3,864,000	\$772,800	100.00%	\$772,800	\$0
Indian Creek Rd.	Lester Mill Rd.	Price Dr.	\$2,324,000	\$464,800	100.00%	\$464,800	\$0
Indian Creek Rd.	Price Dr.	I-75	\$700,000	\$140,000	100.00%	\$140,000	\$0
Indian Creek Rd.	I-75	Indian Creek-Tanger Conn.	\$728,000	\$145,600	100.00%	\$145,600	\$0
Roberts Rd./Grove Rd.	Locust Grove Griffin Rd.	US23/SR42	\$784,000	\$156,800	100.00%	\$156,800	\$0
Roberts Rd./Grove Rd.	US23/SR42	Jackson St.	\$308,000	\$61,600	100.00%	\$61,600	\$0
Lester Mill Rd. (reconstruction)	Bill Gardner Rd.	Bethlehem Rd.	\$3,096,000	\$619,200	0.00%	\$0	\$619,200
Lester Mill Rd. (reconstruction)	Bill Gardner Rd.	Indian Creek Rd.	\$3,006,000	\$601,200	0.00%	\$0	\$601,200
Price Dr. (reconstruction)	Bill Gardner Rd.	Bethlehem Rd.	\$3,366,000	\$673,200	0.00%	\$0	\$673,200
Price Dr. (reconstruction)	Bill Gardner Rd.	Price Dr. Externsion	\$1,080,000	\$216,000	0.00%	\$0	\$216,000
Bethlehem Rd. (reconstruction)	Lester Mill Rd.	US23/SR42	\$1,854,000	\$370,800	0.00%	\$0	\$370,800
Colvin Rd. (reconstruction)	US23/SR42	Davis Lk. Rd.	\$738,000	\$147,600	0.00%	\$0	\$147,600
Colvin Rd. (reconstruction)	Davis Lk. Rd.	So. Bethany Rd.	\$1,242,000	\$248,400	0.00%	\$0	\$248,400
So. Bethany Rd. (reconstruction)	Jackson St.	Hi Hope Rd.	\$1,836,000	\$367,200	0.00%	\$0	\$367,200
So. Bethany Rd. (reconstruction)	Hi Hope Rd.	Colvin Rd.	\$936,000	\$187,200	0.00%	\$0	\$187,200
Locust Rd. (reconstruction)	Higgins Dr.	US23/SR42	\$306,000	\$61,200	0.00%	\$0	\$61,200
Grove Rd. (reconstruction)	Jackson St.	Leguin Mill-Grove Conn.	\$486,000	\$97,200	0.00%	\$0	\$97,200
Leguin Mill Rd. (reconstruction)	Peeksville Rd.	Hi Hope Rd.	\$1,116,000	\$223,200	0.00%	\$0	\$223,200
Hi Hope Rd. (reconstruction)	Leguin Mill Rd.	So. Bethany Rd.	\$2,322,000	\$464,400	0.00%	\$0	\$464,400
Pine Grove Rd. (reconstruction)	Bethlehem-Pine Grove Conn.	Davis Lk. Rd.	\$180,000	\$36,000	0.00%	\$0	\$36,000
Hosannah Rd. (reconstruction)	Locust Grove Griffin Rd.	So. of Locust Grove Griffin	\$1,620,000	\$324,000	0.00%	\$0	\$324,000
			\$133,771,063	\$26,754,213		\$22,086,596	\$4,667,617

Gross Impact Cost Calculation

The gross impact cost per new trip capacity is calculated in **Table R-5**. The total project cost figure is from Table R-4; the 'new trips added capacity' figure is the number of post-improvement added trips for the projects is drawn from Table R-3. This impact cost is not an "impact fee." In calculating an impact fee, the cost must be reduced to the extent that new growth and development will pay future taxes toward financing the improvements, in order to avoid double taxation.

Table R-5
Impact Cost Calculation

	Total Improvements Costs Assigned and Attributable to New Growth	\$22,086,596
÷	New Trips Added Capacity	1,005,400

=	Gross Impact COST per New Trip	\$21.9680

Credit Calculation

In **Table R-6** the anticipated contribution from new growth towards the cost to complete future capital facility projects is calculated. The tax base information is taken from Table F-10, and the annual funding requirement represents the portion of any project that is not impact fee eligible and, in the absence of any other funding strategy, can reasonably be assumed to be funded through the general fund. The millage rate is simply the rate required to meet the annual funding requirement with the given tax digest value. The contribution from new growth is the millage rate multiplied by the total added digest value shown in Table F-8.

Table R-6
New Growth Contribution Through Property Taxes
2005 - 2025

Year	Tax Digest*	Annual Funding Requirement	Millage Rate	New Growth Added Value**	Contribution from New Growth
2005	\$137,699,117	\$0	0.00000	\$42,544,127	\$0
2006	\$203,551,760	\$0	0.00000	\$108,396,770	\$0
2007	\$287,149,609	\$0	0.00000	\$191,994,619	\$0
2008	\$389,734,931	\$30,817	0.07907	\$294,579,941	\$23,293
2009	\$510,644,782	\$0	0.00000	\$415,489,792	\$0
2010	\$646,507,525	\$0	0.00000	\$551,352,535	\$0
2011	\$791,325,876	\$619,200	0.78248	\$696,170,886	\$544,743
2012	\$937,338,294	\$601,200	0.64139	\$842,183,304	\$540,168
2013	\$1,076,633,962	\$673,200	0.62528	\$981,478,972	\$613,701
2014	\$1,202,800,955	\$216,000	0.17958	\$1,107,645,965	\$198,912
2015	\$1,311,954,564	\$370,800	0.28263	\$1,216,799,574	\$343,906
2016	\$1,402,868,353	\$147,600	0.10521	\$1,307,713,363	\$137,588
2017	\$1,476,449,563	\$248,400	0.16824	\$1,381,294,573	\$232,391
2018	\$1,534,719,212	\$367,200	0.23926	\$1,439,564,222	\$344,433
2019	\$1,580,389,380	\$187,200	0.11845	\$1,485,234,390	\$175,929
2020	\$1,615,988,449	\$61,200	0.03787	\$1,520,833,459	\$57,596
2021	\$1,643,813,263	\$97,200	0.05913	\$1,548,658,273	\$91,573
2022	\$1,677,483,175	\$223,200	0.13306	\$1,582,328,185	\$210,539
2023	\$1,691,891,559	\$464,400	0.27449	\$1,596,736,569	\$438,281
2024	\$1,703,958,557	\$36,000	0.02113	\$1,608,803,567	\$33,990
2025	\$1,714,381,046	\$324,000	0.18899	\$1,619,226,056	\$306,017
Total New Growth Contribution, 2005-2025					\$4,293,061

*Running Total; Tax digest information taken from Table F-10.

**New growth added value figures from Table F-8.

Net Impact Fee Calculation

In calculating the net impact fee the applicable credit for future tax contributions is subtracted from the total impact fee eligible project costs to produce a net impact fee eligible project cost figure. This is

shown in the first part of **Table R-7**. Using the net cost figure, the net impact fee is calculated, based on the total added trip capacity.

**Table R-7
Impact Fee Calculation**

	Total Eligible Project Costs:	\$22,086,596
	Less New Growth Contribution:	(\$4,293,061)

	= NET Project Costs:	\$17,793,535
NET Costs		
Attributable to New Growth	New Trips Added Capacity	Net Impact FEE per New Trip
\$17,793,535	1,005,400	\$17.6980

Fee Schedule

The fee schedule that follows presents the maximum net impact fee that could be charged in Locust Grove for the Road Improvements category, based on the calculations carried out in this section. Road Improvement impact fees are collected from residential and non-residential development.

These net impact fees are transferred to the Maximum Allowable Impact Fee Schedule that is included in the Introduction section of this report. Ultimately, all net fees are increased, collectively, to include the cost of preparing the Capital Improvements Element (CIE) and an administrative fee (not to exceed 3%). See the Other Fees and Charges section at the end of this report for details.

LOCUST GROVE ROAD IMPROVEMENTS IMPACT FEE SCHEDULE

Net Impact Fee (Per Trip-End): \$17.70

Trip data is derived from ITE's Traffic Generation Manual, 6th Ed.

CODE	LAND USE	Average Rate		Unit of Measure	Fee per Unit
		Weekday Trip-Ends	% New Trips		
<i>Port and Terminal (000-099)</i>					
30	Truck Terminal	81.90	92%	acres	\$1,333.51
<i>Industrial/Agricultural (100-199)</i>					
110	General Light Industrial	6.97	92%	1000 sq. ft.	\$113.49
120	General Heavy Industrial	1.50	92%	1000 sq. ft.	\$24.42
140	Manufacturing	3.82	92%	1000 sq. ft.	\$62.20
150	Warehousing (standard)	4.96	92%	1000 sq. ft.	\$80.76
151	Mini-Warehouse	2.50	92%	1000 sq. ft.	\$40.71
152	High-Cube Warehouse	0.12	92%	1000 sq. ft.	\$1.95
<i>Residential (200-299)</i>					
210	Single-Family Detached Housing	9.47	100%	dwelling	\$167.60
220	Apartment	6.63	100%	dwelling	\$117.34
230	Residential Condominium/Townhouse	5.86	100%	dwelling	\$103.71
<i>Lodging (300-399)</i>					
310	Hotel	8.92	59%	room	\$93.14
311	All Suites Hotel	6.24	59%	room	\$65.16
312	Business Hotel	7.27	59%	room	\$75.91
320	Motel	9.11	59%	room	\$95.12
<i>Recreational (400-499)</i>					
416	Campground/Recreational Vehicle Park	74.38	85%	camp sites	\$1,118.92
430	Golf Course	5.04	85%	acres	\$75.82
435	Multipurpose Recreational Facility	90.38	85%	acres	\$1,359.61
443	Movie Theater	78.06	85%	1000 sq. ft.	\$1,174.28
460	Arena	33.33	85%	acres	\$501.39
480	Amusement Park	75.76	85%	acres	\$1,139.68
491	Tennis Courts	16.26	85%	acres	\$244.60
492	Racquet Club	17.14	85%	1000 sq. ft.	\$257.84
494	Bowling Alley	33.33	85%	1000 sq. ft.	\$501.39
495	Recreational Community Center	22.88	85%	1000 sq. ft.	\$344.19
<i>Institutional (500-599)</i>					
521	Private School (K-12)	5.50	80%	1000 sq. ft.	\$77.87
560	Church/Synagogue	9.11	90%	1000 sq. ft.	\$145.11
565	Day Care Center	79.26	74%	1000 sq. ft.	\$1,038.03
566	Cemetery	4.73	90%	acres	\$75.34
591	Lodge/Fraternal Organization	46.90	90%	employee	\$747.03
<i>Medical (600-699)</i>					
610	Hospital	16.78	77%	1000 sq. ft.	\$228.67
620	Nursing Home	2.61	75%	bed	\$34.64
630	Clinic	7.75	77%	employee	\$105.61

Road Improvements fee schedule continued.

CODE	LAND USE	Weekday Trip-Ends	% New Trips	Unit of Measure	Fee per Unit
<i>Office (700-799)</i>					
710	General Office Building	11.01	92%	1000 sq. ft.	\$179.27
714	Corporate Headquarters Building	7.72	92%	1000 sq. ft.	\$125.70
715	Single-Tenant Office Building	11.57	92%	1000 sq. ft.	\$188.38
720	Medical-Dental Office Building	36.13	77%	1000 sq. ft.	\$492.36
760	Research and Development Center	8.11	92%	1000 sq. ft.	\$132.05
<i>Retail (800-899)</i>					
812	Building Materials and Lumber Store	39.71	81%	1000 sq. ft.	\$569.26
813	Free-Standing Discount Superstore	46.96	75%	1000 sq. ft.	\$623.32
814	Specialty Retail Center	40.67	49%	1000 sq. ft.	\$352.69
815	Free-Standing Discount Store	56.63	61%	1000 sq. ft.	\$611.36
816	Hardware/Paint Store	51.29	40%	1000 sq. ft.	\$363.09
817	Nursery (Garden Center)	36.08	81%	1000 sq. ft.	\$517.22
818	Nursery (Wholesale)	39.00	81%	1000 sq. ft.	\$559.08
820	Shopping Center	16.76	81%	1000 sq. ft.	\$240.26
823	Factory Outlet Center	26.59	81%	1000 sq. ft.	\$381.18
831	Quality Restaurant	89.95	82%	1000 sq. ft.	\$1,305.38
832	High-Turnover (Sit-Down) Restaurant	130.34	79%	1000 sq. ft.	\$1,822.33
834	Fast-Food Restaurant	496.12	54%	1000 sq. ft.	\$4,741.37
837	Quick Lubrication Vehicle Shop	40.00	83%	service bay	\$587.57
840	Auto Care Center	4.01	51%	1000 sq. ft.	\$36.19
841	New Car Sales	37.50	79%	1000 sq. ft.	\$524.30
843	Auto Parts Store	61.91	83%	1000 sq. ft.	\$909.42
847	Self-Service Car Wash	108.00	40%	stall	\$764.55
848	Tire Store	24.87	83%	1000 sq. ft.	\$365.32
849	Wholesale Tire Store	20.36	83%	1000 sq. ft.	\$299.07
850	Supermarket	111.51	63%	1000 sq. ft.	\$1,243.31
851	Convenience Market (Open 24 Hours)	737.99	40%	1000 sq. ft.	\$5,224.37
852	Convenience Market (Open 15-16 Hours)	634.20	40%	1000 sq. ft.	\$4,489.62
853	Convenience Market with Gasoline Pumps	845.60	40%	1000 sq. ft.	\$5,986.16
860	Wholesale Market	6.73	61%	1000 sq. ft.	\$72.66
861	Discount Club	41.80	61%	1000 sq. ft.	\$451.26
862	Home Improvement Superstore	35.05	75%	1000 sq. ft.	\$465.24
863	Electronics Superstore	45.04	81%	1000 sq. ft.	\$645.66
870	Apparel Store	66.40	49%	1000 sq. ft.	\$575.82
881	Pharmacy/Drugstore	88.16	49%	1000 sq. ft.	\$764.52
890	Furniture Store	5.06	81%	1000 sq. ft.	\$72.54
<i>Services (900-999)</i>					
912	Drive-in Bank	265.21	61%	1000 sq. ft.	\$2,863.14

Other Charges

In addition to the net impact fees for each public facility category, there are two additional charges than can be assessed in an impact fee program. Based on the definition of "system improvement costs" (see the Glossary), there are possible impact fee charges beyond the categories already discussed that are allowed under State law. These may be directly or indirectly related to the cost of capital projects, and can include a fee for the administration of the impact fee program as well as a fee to recoup the cost to prepare the Capital Improvements Element. Specifically, DIFA allows for the collection of impact fees based on:

"administrative costs, provided that such administrative costs shall not exceed 3 percent of the total amount of the costs"

And,

"expenses incurred for qualified staff or any qualified engineer, planner, architect, landscape architect, or financial consultant for preparing or updating the capital improvement element"

Program Administration

A surcharge of 3%, the maximum allowable, has been added to the subtotal of impact fees for the individual categories (this is shown in the Maximum Allowable Impact Fee Schedule in the **Introduction** section of this report). The fees collected in this category can only be used for the administration of the impact fee program, and are reported annually to the State just like the other service categories. Like any fee, this must have some rational and reasonable connection to the service rendered. Commonly, the administrative fee collected is used to offset some or all of the cost to handle impact fee calculations by the building permit staff, some or all of the cost for the finance department to process, record and distribute impact fees, and some or all of the cost for the management and oversight of the program by administrative staff.

CIE Prep Fee

A surcharge for the recoupment of the cost to prepare the Capital Improvements Element has been added to the subtotal of the individual category impact fees (not including the administration fee). The "CIE Prep Fee" is based on a recoupment of the preparation cost over the next five years of impact fee collections. **Table CP-1** presents a forecast of anticipated impact fee collections for the first five years of the program, 2005 through 2009. The anticipated collection is based on the current maximum allowable impact fee for each category, the population and employment forecasts, and average land use types (for the nonresidential road fee component).

Table CP-1
Anticipated Impact Fee Collections
2005-2009

Year	Anticipated Collection*		Total Anticipated Fee Collection
	from Dwelling Units	from Employment Growth	
2005	\$851,689	\$153,214	\$1,004,903
2006	\$1,079,022	\$194,988	\$1,274,009
2007	\$1,321,269	\$239,910	\$1,561,179
2008	\$1,553,685	\$283,573	\$1,837,258
2009	\$1,741,362	\$319,645	\$2,061,007
			\$7,738,356

*Based on current (2005) maximum allowable impact fee.

In **Table CP-2**, the percentage necessary to recoup the cost of CIE preparation is calculated. The cost paid for all work related to the creation of the CIE is shown. This is then divided by the total anticipated impact fee collection, from Table CP-1, to produce the percentage surcharge required to recoup the cost. This surcharge is used to calculate the amount owed, by each land use, in the Maximum Allowable Impact Fee Schedule in the **Introduction** section of this report.

Table CP-2
CIE Recoupment Fee

Cost to Prepare CIE		\$57,510
Anticipated Fee Collection (2005-2009)	÷	\$7,738,356
CIE Prep Recoupment Percentage	=	0.74%

While a record of the monies collected in this category must be reported to the state, the CIE prep fee itself does not need to be maintained in a separate account. The fee is a recoupment for general funds already expended; its use is not restricted. Once the cost to prepare the CIE has been recouped through this surcharge, the percentage would be dropped from the impact fee schedule. However, future costs to update the CIE, as well as to prepare a new CIE at any point in the future, would become eligible for collection.

Appendix A: Glossary

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

Capital improvement: an improvement with a useful life of ten years or more, by new construction or other action, which increases the service capacity of a public facility.

Capital improvements element: a component of a comprehensive plan adopted pursuant to Chapter 70 of the Development Impact Fee Act which sets out projected needs for system improvements during a planning horizon established in the comprehensive plan, a schedule of capital improvements that will meet the anticipated need for system improvements, and a description of anticipated funding sources for each required improvement.

Development: any construction or expansion of a building, structure, or use, any change in use of a building or structure, or any change in the use of land, any of which creates additional demand and need for public facilities.

Development impact fee: a payment of money imposed upon development as a condition of development approval to pay for a proportionate share of the cost of system improvements needed to serve new growth and development.

Eligible facilities: capital improvements in one of the following categories:

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

Impact Cost: the proportionate share of capital improvements costs to provide service to new growth, less any applicable credits.

Impact Fee: the impact cost plus surcharges for program administration and recoupment of the cost to prepare the Capital Improvements Element.

Level of service: a measure of the relationship between service capacity and service demand for public facilities in terms of demand to capacity ratios or the comfort and convenience of use or service of public facilities or both.

Project improvements: site improvements and facilities that are planned and designed to provide service for a particular development project and that are necessary for the use and convenience of the occupants or users of the project and are not system improvements. The character of the improvement shall control a determination of whether an improvement is a project improvement or system improvement and the physical location of the improvement on site or off site shall not be considered determinative of whether an improvement is a project improvement or a system improvement. If an improvement or facility provides or will provide more than incidental service or facilities capacity to persons other than users or occupants of a particular project, the improvement or facility is a system

improvement and shall not be considered a project improvement. No improvement or facility included in a plan for public facilities approved by the governing body of the municipality or city shall be considered a project improvement.

Proportionate share: means that portion of the cost of system improvements which is reasonably related to the service demands and needs of the project.

Rational Nexus: the clear and fair relationship between fees charged and services provided.

Service area: a geographic area defined by a municipality, city, or intergovernmental agreement in which a defined set of public facilities provide service to development within the area. Service areas shall be designated on the basis of sound planning or engineering principles or both.

System improvement costs: costs incurred to provide additional public facilities capacity needed to serve new growth and development for planning, design and engineering related thereto, including the cost of constructing or reconstructing system improvements or facility expansions, including but not limited to the construction contract price, surveying and engineering fees, related land acquisition costs (including land purchases, court awards and costs, attorneys' fees, and expert witness fees), and expenses incurred for qualified staff or any qualified engineer, planner, architect, landscape architect, or financial consultant for preparing or updating the capital improvement element, and administrative costs, provided that such administrative costs shall not exceed 3 percent of the total amount of the costs. Projected interest charges and other finance costs may be included if the impact fees are to be used for the payment of principal and interest on bonds, notes, or other financial obligations issued by or on behalf of the municipality or city to finance the capital improvements element but such costs do not include routine and periodic maintenance expenditures, personnel training, and other operating costs.

System improvements: capital improvements that are public facilities and are designed to provide service to the community at large, in contrast to "project improvements."

Appendix B: Road Project Methodology

Introduction

This report describes a traffic study that was done for the City of Locust Grove. Traffic conditions inside the City are generally satisfactory at present. Looking ahead, however, traffic conditions inside Locust Grove are expected to change for the worse if no new capacity or connectivity is built. The focus of this study was the identification of road improvements that would be needed to support the level of population and employment growth that is anticipated to occur between now and a plan horizon year of 2025.

Locust Grove is situated in a rapidly developing corridor along I-75 in Henry County, approximately 25 miles south of Atlanta, on the outskirts of the metropolitan area. The City currently has direct access to and from I-75 at the interchange with Billy Gardner Parkway. The interchange is well known to I-75 travelers, as the popular Tanger Outlet Mall shops are accessed from this Interstate exit. In addition to being used by people with a destination in or near Locust Grove, the interchange is frequented by motorists traveling between metropolitan Atlanta and the City of Jackson in northern Butts County.

During the ten year span between 1990 and 2000, metropolitan Atlanta was one of the fastest growing large urban areas in the United States. More than 100,000 persons per year were added to the region which grew from 3.1 million to 4.2 million persons. During that same time frame, Henry County experienced a striking level of growth. From 1990 to 2000 the county's population more than doubled from 58,741 to 119,341 persons. The City of Locust Grove lies in the path of development patterns that have emanated south out of Atlanta down I-75 and US23/SR42. In recent years the City has experienced modest growth. Its population grew by a little more than 400 persons from 2000 to 2003, climbing to 2,755 persons. The rate of growth in the Locust Grove area is expected to change soon.

Demographic forecasts made recently by both City officials and the Atlanta Regional Commission project large population and employment increases for the Locust Grove area between 2004 and 2025.

With a boost from property annexation, City officials estimate its population will climb to 4,500 persons in 2005. A striking amount of growth is expected after 2005. From 2005 to 2025, population is expected to increase by 34,700 persons to 39,200. This is equivalent to approximately 13,500 new dwelling units. In addition to residential growth, commercial and institutional developments will be expected to occur in order to provide job opportunities, services and amenities to people moving into the Locust Grove area.

With this description of anticipated future growth in Locust Grove, City officials proceeded to study travel patterns and the forecast of traffic conditions on its road system to determine future Capital improvement needs.

Methodology

The list of highway improvements that will be needed to accommodate future travel demand in 2025 identified herein were selected because they produced satisfactory operating conditions on Locust Grove's road system according to the results of this traffic study. The study methodology contained three (3) primary analysis steps, as follows:

- Evaluating existing conditions on the road system;
- Forecasting and allocating growth in the Locust Grove Area; and,
- Evaluating operating conditions on the road system with projected 2025 traffic.

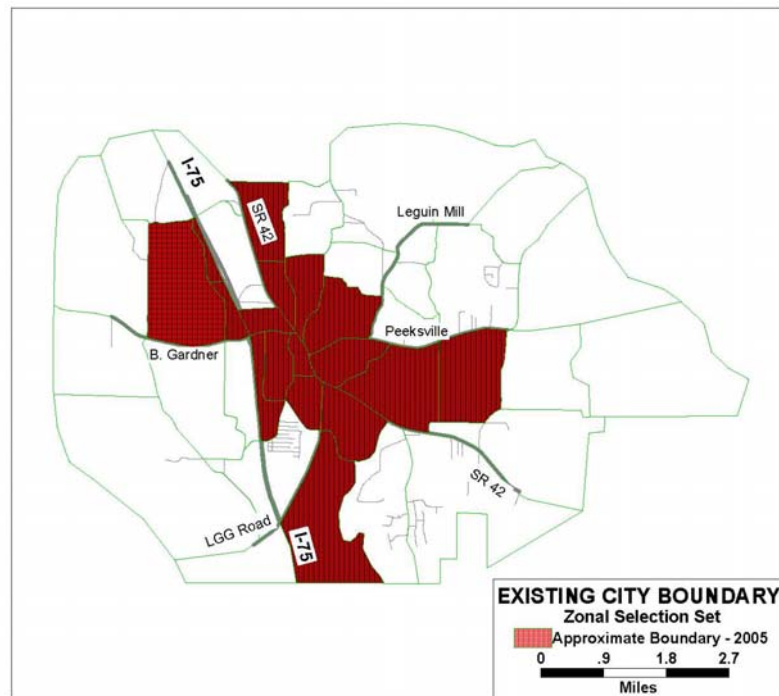
Each of these steps is described in a subsequent section of the report. In order to understand them, a few key data resources and study parameters are explained below.

Study Area and Boundaries

The study area used to measure and forecast traffic conditions in Locust Grove included an area much broader than the existing city boundary. The study area and an approximation of the City boundary that is anticipated in 2005 are illustrated in Figure 1. In an east-west direction, the study area encompasses approximately 9.5 miles from Old Jackson Road in the east to SR155 in the west. Both Harris Drive and Coan Drive form the northern border while the Henry County - Butts County line delineates the southernmost extent. The north-south distance of the study area is approximately 6.5 miles.

The existing City boundary is shaded in light red in Figure 1. Between 2005 and future year 2025, it is expected to roughly double in size.

Figure 1 – Study Area



Level-of-Service

The adequacy of a roadway is often determined using a grading system called "Level-of-Service". Levels-of-service are indicated by letter grades, A-F, which are assigned to each link in accordance with total delay at that intersection. These grades are similar to those that children get on their report cards.

At one extreme, LOS "A" signifies that motorists travel with little or no delay and have room to maneuver as they approach an intersection at the downstream end of a segment. At the other extreme, LOS "E" denotes that the volume of traffic is approaching the capacity threshold. LOS "E" is characterized by low average travel speeds, the formation of vehicle queues on intersection approaches, intersection delays and little room to maneuver. Below LOS "E" is LOS "F". LOS "F" conditions occur when more traffic attempts to pass through an intersection than the intersection is designed to accommodate. These points are referred to as bottlenecks. LOS "F" conditions are characterized by long queues of vehicles on intersection approaches, travel delays between intersections, low average speeds and little room to maneuver. Different levels-of-service are related to their corresponding average delay per vehicle threshold, in seconds per vehicle units, in Table 1.

Level-of-Service Standard

The City of Locust Grove determined that Level-of-Service "D" would be a desirable standard to provide on its road system. LOS "D" is a middle threshold that recognizes the tradeoff between marginally better service and the additional costs associated with providing a higher level-of-service. In order to gauge what this level-of-service means in terms of average delay at intersections, Table 1 displays two ranges depending on the type of traffic control present. For LOS "D" the average delay per vehicle falls into the 35-55 seconds per vehicle range at signalized intersections. At unsignalized intersections, the LOS "D" delay threshold is shorter. Average total delay at unsignalized intersections lies between 25-35 seconds per vehicle.

Table 1 - Intersection Delay Criteria for Levels-of-Service

LOS	Total Delay per Vehicle (s/veh)	
	Signalized	Unsignalized
A	<= 10	0 - 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Source: HCM 2000

Lane Capacity

The Locust Grove Traffic Study utilizes a single minimum operating level-of-service to determine whether a road segment is deficient. The minimum level-of-service (LOS) is "D". In a pure sense, many factors in combination determine the level-of-service at highway intersections and on segments. These factors include mobility attributes like: amount of delay, average speed, fluctuation of speed, safety, convenience, and freedom to maneuver. In practice, however, transportation planners and engineers evaluating system performance over a large area typically compare the number of vehicles using a particular facility for a given time period with the design capacity of that facility. This statistic is referred to as the volume-to-capacity ratio. As such, the key determinants in computing level-of-service are volume and capacity. The principals underlying capacity and the process that was used to compute it are reported below.

Locust Grove's thoroughfare network is comprised of three different street types which are distinguished from each other according to function. There are controlled access Freeway facilities, like I-75. There are arterial streets which provide a means to get from one section of the City to another, like SR42/US23. Then there are Collector roads, like Tanger Boulevard. and Peeksville Road, that bridge local subdivision streets and arterial streets.

The 1997 Highway Capacity Manual (NCHRP Special Report 209), published by the Transportation Research Board in 1998, provides standards for traffic engineering and transportation planning. Guidelines for capacity calculations on urban collector and arterial streets are found in Section 9, "Signalized Intersections - Urban Streets". In planning studies such as this, the following formula for estimating lane capacity on collector and arterial streets is:

$$c = 1,800 \times N \times (g/C)$$

Where, c = Lane Capacity

N = Number of Lanes

g/C = Green Time to Cycle Length Ratio

Directional, per lane, per hour capacities for collectors and arterials are shown in the table below. The g/C ratio is a generalized average representing the percentage of green time allocated to through movements at intersections on each of the City's major thoroughfares. Collector street g/C percentages are usually lower, in comparison with arterials. In this study, Collector streets are assumed to get 45% of the green time while arterials are given 55%.

Table 2
Collector and Arterial Capacity

Capacity Variables	Collector	Arterial
Saturation flow rate	1,800 pass. cars per hour per lane	1,800 pass. cars per hour per lane
Number of Lanes	1	1
g/C ratio	0.45	0.55
Capacity	810 vehicles per hour(vph)	990 vehicles per hour(vph)

These values represent maximum saturation flow rate capacities, not LOS "D".

Since the level-of-service standards are set at LOS D, the capacity calculation shown in the preceding table needs to be adjusted to represent the maximum service volume at LOS D. The capacity (or maximum service volume) of one lane of an arterial at LOS D is estimated to be 891 vph. This is based on the guideline that the LOS D capacity is approximately 90 percent of the maximum saturation flow rate. Using the same logic, the per lane LOS D capacity for a collector street is computed to be 729 vph.

One more adjustment to the hourly, per lane capacities is needed to compute levels-of-service on the City's roadway network. Traffic volumes on the roads are calculated in terms of daily traffic. Therefore, hourly capacities are expanded by a peak hour and direction volume to daily traffic volume factor which converts them to their equivalent daily per lane capacities. This is accomplished by dividing the hourly capacities by $(0.1) \times (0.60)$ or 6 percent. This factor is representative of peaking conditions on typical urban roadways in outlying areas of a city similar in size to Atlanta. Applying the peak-to-daily traffic conversion factor to each per hour LOS "D" capacity, results in the following equivalent daily capacities: 14,900 vpd for arterials; and 12,200 vpd for collectors.

Traffic Analysis Tool

System-wide level-of-service analyses were performed using a subarea travel demand model and spreadsheet analysis. A subarea travel demand model with 41 zones and 16 external stations was extracted from the Atlanta Regional Commission's regional travel demand model. The subarea model was calibrated to 2004-level daily traffic volumes. To make horizon year 2025 daily traffic forecasts, the base year 2004 trip table was factored using a fratar growth factor process that was based on land-use plans provided by the City of Locust Grove.

Base year 2004 and future year 2025 traffic flows were computed for the study area road network using Citilab's equilibrium traffic assignment algorithm. This algorithm loads the trip table onto study area network links according to an iterative, minimum time algorithm that reflects the influence of capacity constraints.

Traffic Counts

Traffic counts were measured in the field on typical weekdays during the middle of October, 2004. Peak period turning movements were counted at six intersections and 24-hour vehicle counts were done on 10 road segments.

Traffic counts revealed what a lot of folks know already. The highest traffic volumes in the City of Locust Grove, notwithstanding I-75, occur on US23/SR42 and Bill Gardner Parkway. The highest volume, 1,237 vehicles per hour, occurred on northbound US23/SR42 between Peeksville Road and Bill Gardner Pkwy. Traffic on this particular section is extremely high during the morning peak because nearly 300 vehicles per hour turn right off of Peeksville Road onto northbound US23/SR42. I-75 contributes a lot of traffic to the Locust Grove street system. A total of 1,037 vehicles were observed entering I-75 on the northbound entrance ramp from Bill Gardner Parkway in the morning peak hour. During the evening peak, more than 800 vehicles were counted exiting from southbound I-75 onto Bill Gardner Pkwy..

Unit Costs for Improvements

In subsequent phases of the traffic study, unit costs were applied to various types of road improvements to estimate how much investment would be needed to maintain a LOS "D" service standard on the Locust Grove road system. The unit costs are enumerated in Table 3 below. The unit costs are based on those used in the Georgia Regional Transportation Authority's (GRTA) Northern Sub-Area Study/GA 400 Corridor Analysis in 2002. Unit costs for these road improvement types range from \$100,000 for a Type 1 intersection improvement to \$6 million for a new freeway interchange.

Unit costs were derived for three different types of intersection improvements depending on the level of complexity associated with upgrading operations. Brief descriptions of the differences between the three levels of intersection improvement are provided below.

Type 1 - Installation of traffic signal with minor geometric improvement. This type assumes there would not be construction of full turn-lanes, utility relocation or significant right-of-way.

Type 2 - Installation of traffic signal with one additional turn lane or implementation of one or two turn-lanes. It assumes some right-of-way costs.

Type 3 - Installation of traffic signal with additional turn lanes or just constructing additional turn lanes. This type assumes right-of-way acquisition and utility relocations.

To allow for right-of-way acquisition, an average price of \$8.00 per square foot was used for roadway widenings and new construction. For Type 2 and Type 3 intersection improvements an average right-of-way figure of \$200,000 was applied to the average unit cost.

Table 3 – Unit Cost Per Improvement

Construction	Cost	Note
Street Widening	\$1,825,000	With Median; Per lane-mile
Street Widening	\$1,400,000	Without Median; Per lane-mile
Roadway Upgrade	\$900,000	Per lane-mile
Roadway New Construction	\$1,500,000	With Median; Per lane-mile
Interchange	\$6,000,000	New
Intersection	\$100,000	Type 1
Intersection	\$250,000	Type 2
Intersection	\$400,000	Type 3
Bridge (Assume 450' Length)	\$600,000	

Source: Northern Sub-Area Study/GA 400 Corridor Analysis,
 Cost Estimation Tool, Georgia Regional Transportation Authority, 2002

Existing Conditions

Under normal, existing conditions traffic generally moves well during the A.M. and P.M. peak hours. The traffic study revealed that only one intersection currently operates below the minimum LOS "D" service standard.

Deficiencies

Levels-of-service based on daily traffic projections and link capacities are reported in Table A-1 of the Appendix for 18 roadway facilities inside the study area. A list of the road sections that were analyzed for capacity deficiency is presented in Table 4. The capacity analysis revealed that the intersection between US23/SR42 and Peeksville Rd. was the only critical location to record an unsatisfactory volume to capacity (V/C) ratio. It was identified as capacity deficient because its V/C ratio at LOS "D" capacity exceeded 1.0. There is no traffic signal at this location now.

Table 4
List of Roadways In Deficiency Analyses

NO.	ROAD NAME	BOUNDARIES	LENGTH	FUNCTIONAL CLASS
1	Bill Gardner Pkwy.	SR155 - US23/SR42	4.11	Collector
2	US23/SR42	Harris Rd. - Butts Co. Line	7.24	Arterial
3	Peeksville Rd.	US23/SR42 - Burg Rd.	3.59	Collector
4	Locust Grove Griffin Rd.	Lester Mill Rd. - US23/SR42	2.52	Collector
5	Tanger Blvd.	Bill Gardner Pkwy. - US23/SR42	3.35	Collector
6	Indian Creek Rd.	Lester Mill Rd. - US23/SR42	1.75	Collector
7	Lester Mill Rd.	Bethlehem Rd. - Locust Grove Griffin Rd.	5.21	Collector
8	Bethlehem Rd.	Lester Mill Rd. - US23/SR42	1.66	Collector
9	Price Dr.	Bethlehem Rd. - Indian Creek Rd.	2.47	Collector
10	Leguin Mill Rd.	Peeksville Rd. - Colvin Rd. (E)	1.17	Collector
11	Colvin Rd.	US23/SR42 - S. Unity Rd.	2.45	Collector
12	S. Unity Rd.	Colvin Rd. - Davis Rd.	2.33	Collector
13	Shoal Creek/Roberts/Grove	Tanger Blvd. - Peeksville Rd.	1.88	Collector
14	Davis Rd.	S. Ola Rd. - US23/SR42	1.32	Collector
15	Locust Rd.	Butts Co. Line - US23/SR42	2.25	Collector
16	Jackson St.	US23/SR42 - US23/SR42	3.02	Collector
17	Davis Lk. Rd.	Jackson St. - Harris Rd.	2.17	Collector
18	S. Bethany Rd.	Jackson St. - Harris Rd.	2.07	Collector

Improvements and Estimated Cost

To correct the existing capacity deficiency at the US23/SR42 intersection with Peeksville Road, installation of a traffic signal with some Type 3 intersection turn lane improvements would improve operation conditions to a satisfactory level-of-service. The estimated cost to signalize the US23/SR42 intersection with Peeksville Rd. was \$600,000. It was classified as a Level 3 intersection improvement for cost estimation purposes. The project would entail geometric improvements beyond installation of a traffic signal. These would include:

- A new left-turn lane on the southbound US23/SR42 approach; and,
- A new right-turn lane on the westbound Peeksville Rd. approach.

The design and cost for improving this intersection could be influenced by the proximity of railroad tracks that cross Peeksville Rd. a short distance from the center of the intersection.

Future Year 2025 Traffic

Forecasts of future year 2025 traffic demand and patterns were prepared for the simulation model based on current traffic patterns and a growth forecast of population and employment that is anticipated to occur within the assumed 2025 boundary for the City of Locust Grove. This section includes a summary of the 2005 to 2025 growth forecasts, average trip rates for different land-uses and a summary of future traffic demand forecasted for the traffic study.

Demographic Forecast

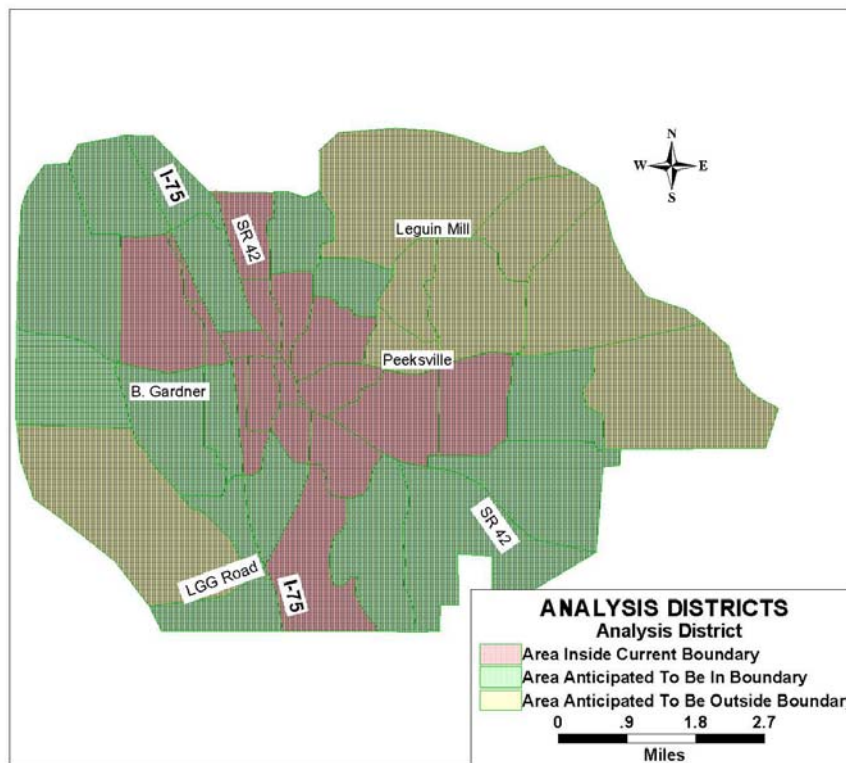
To get a sense of where growth was projected to occur and to relate certain types of future development with increased levels of traffic demand, a set of three districts were defined. The districts boundaries are displayed in Figure 2 and represent the following strategic subareas within the study area.

District 1: Study area residing inside the anticipated boundary for Locust Grove in 2005.

District 2: Study area not inside the anticipated 2005 boundary but expected to be within the assumed future year 2025 boundary.

District 3: Study area not inside the 2005 or 2025 City boundaries.

Figure 2 – District Boundaries to Delineate Growth



Overall, the number of households in the study area was forecast to grow by more than 17,000 units between 2005 and 2025. The level of growth between 2005 and 2025 for commercial types of development was equivalent to adding 14,800 employees. In order to make housing unit growth compatible with conventional methods to project traffic, it was broken into several categories: Single Family Detached; Planned Unit Development; and, Apartment. Assumed commercial development, in

units of employees, was split into seven categories, as follows: Shopping Center; Commuter College; K-12 School; Office; Service/Retail; and, Transportation/Utilities.

Trip Generation Rates

Average trip generation rates for different land-uses were developed based on research reported in the ITE Trip Generation Manual, 7th Edition. Some adjustments were made to the daily trip rates reported in the Trip Generation Manual to account for a mixture of specific land-use types which were assumed in different subareas or zones of the City. The rates were developed such that future year employment and population data provided by the City could be applied to each one of 41 subareas of the City and to generalized land-use types considered appropriate in a developing bedroom community of a large metropolitan area. Table 5 lists trip rates that were used to forecast future trips for each land-use type.

The rates are subdivided into those associated with residential or commercial development. Under the residential land-use categories, the highest rate was 9.6 trips per day for Single Family, Detached dwelling units. Under the commercial or employment-based land-use categories trip rates varied a lot. Assumed Shopping Center developments were assigned the highest trip rates at 27 trips per day. At the other extreme, Office type development generated the fewest number of trips per employee with 3.

Traffic Demand

The number of new trip ends attributable to household and employment related development in the Locust Grove study area between 2004 and 2025 was estimated to be 595,000 per day. This includes all new trips with an origin or destination inside the study area, as well as trips entering and exiting at external stations. External stations include subarea entry/exit points like: I-75 north of Bill Gardner Pkwy., I-75 south of Bill Gardner Pkwy., Hampton Locust Grove Road west of SR155, US23/SR42 north of Harris Dr., and US23/SR42 at the Butts County line. Considering all trip ends, external and internal to the study area, the 351,000 average daily tripends in 2004 grow by 270% to 946,000 in 2025. Looking at just those inside the study area, the 79,100 tripends per day in 2004 grow by more than 6 times to approximately 507,900 in 2025.

Table 5 - Average Trip Rates

Household Based	Type	Average Trip Rate Per Household
	Single Family Detached	9.6
	Planned Unit Development	7.5
	Apartment	6.7
Employment Based	Type	Average Trip Rate Per Employee
	Shopping Center	27
	Commuter College	16
	K-12 Schools	17
	Office	3
	Service/ Retail	25
	Government	12
	Utilities/ Transportation	7

Sources: ITE Trip Generation, 7th Edition;
PBSJ

Future Conditions

The future year 2025 assignment of forecasted daily traffic on the existing street network produced gridlock conditions throughout the study area. In effect, the entire road system performed below the minimum threshold of LOS "D". A detailed report of operating conditions on road sections in the study area is presented in Table A-2 of this Appendix.

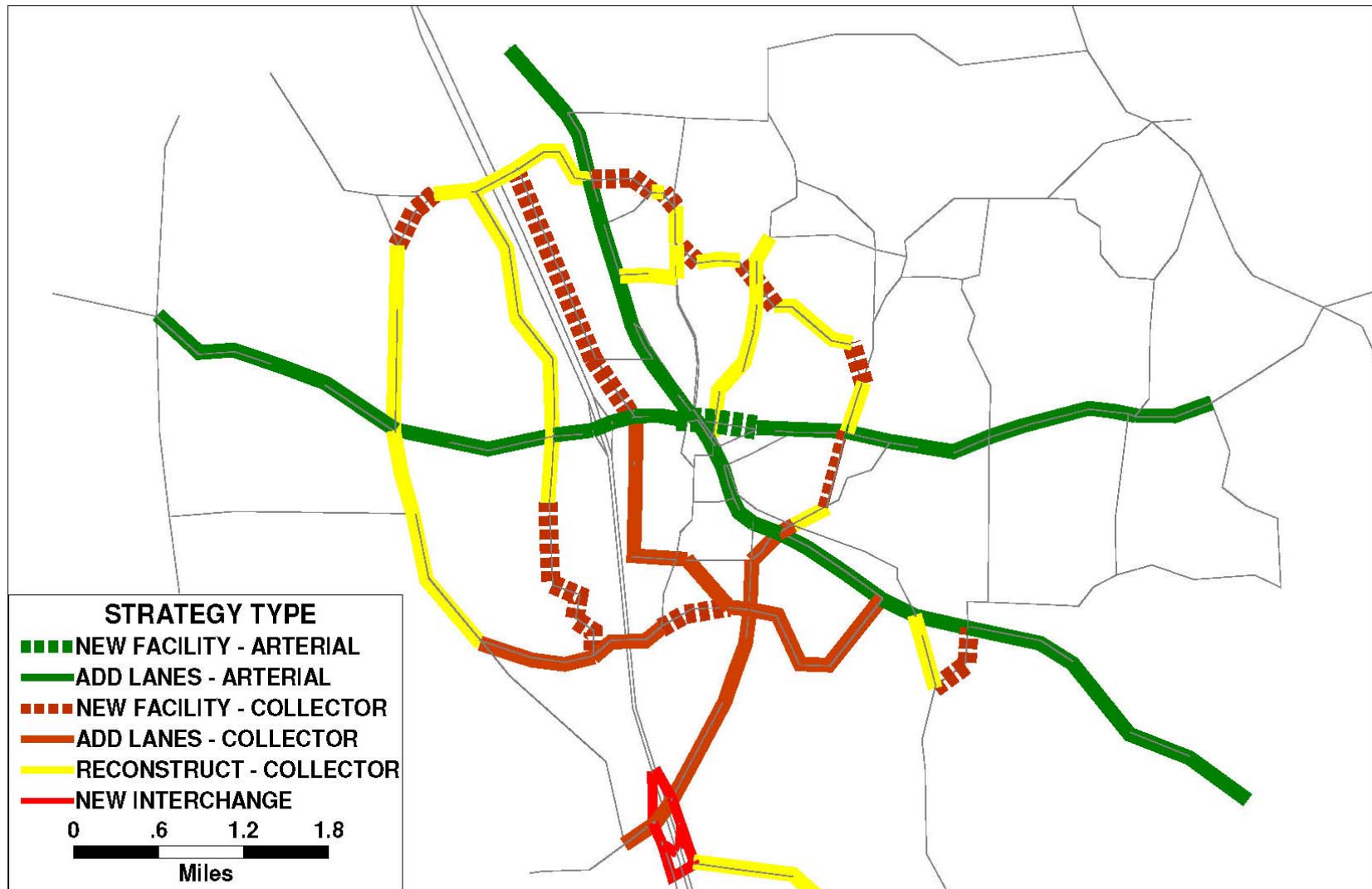
In order to raise the level-of-service to "D" with projected 2025 traffic volumes, a number of potential road improvements were considered. A list of major road improvements that were built into the

subarea network to address future year capacity deficiencies is shown below. The traffic assignment of 2025 travel demand onto the assumed subarea highway network, reflecting those projects listed below, resulted in an overall satisfactory LOS throughout the study area. Projects in Locust Grove's transportation plan are mapped in Figure 3. A detailed report of operating conditions on road sections in the study area is presented in Table A-3.

1. New Freeway Interchange – Construct a new freeway interchange with I-75 either at or just north of Locust Grove Griffin Road.
2. Widening (Add Lanes) - Bill Gardner Pkwy.; Peeksville Rd.; Locust Grove Griffin (LGG) Rd.; Tanger Blvd.; sections of Price Dr., sections of Shoal Creek Rd.; and, sections of Indian Creek Rd..
3. Signalize and upgrade intersections in major roadway corridors and where high concentrations of development were assumed.
4. Modifications of connectivity to existing roads.
5. A new Loop Road surrounding the center of Locust Grove, east and west of I-75 was built into the future year subarea network. Formation of the new loop road followed from the sequencing of individual improvements. The individual improvements consist of the following changes: (1) improving Harris Dr., part of Bethlehem Rd., part of Lester Mill Rd., Indian Creek Rd., Roberts Rd., part of Grove Rd., Shoal Creek Rd. and Tanger Blvd.; and, (2) making a new connection between Roberts Rd. and Leguin Mill Rd. including a bridge over US23/SR42 and constructing a four-legged intersection between Peeksville Rd. and Leguin Mill Rd..
6. Realign Locust Rd. to connect with Davis Rd, making it a four-legged signalized intersection at SR 42.
7. Reconstruct the Tanger Blvd. intersection at US23/SR42 into a four legged, signalized intersection with a connection to Jackson St..
8. Reconstruct Jackson St. to a higher design 2-lane facility.

This collection of road improvements facilitated a satisfactory flow of traffic throughout the study area, both east and west of US23/SR42 while attempting to control access to US23/SR42. Other projects were incorporated into the comprehensive list of future road improvements. The full list of improvements is presented in Table 6 along with order-of-magnitude cost estimates associated with implementation.

Figure 3
Transportation Plan Improvements Map



**Table 6
Proposed Road Improvements and Estimated Costs**

IMPROVEMENT TYPE	LOCATON			PROJECT DESCRIPTION	LANE MILES	ESTIMATED CONSTRUCTION COST ¹	ESTIMATED LOCAL SHARE OF COST ²	
	Road Name	From	To					
New Interchange	I-75 At Locust Grove Griffin Road			Full access interchange with I-75	0.00	\$6,000,000	\$1,200,000	
		Sipka Road	Locust Grove Griffin Road	Approx. .5 miles south	0.80	\$720,000	\$144,000	
		Hosannah Road	Locust Grove Griffin Road	Approx. .5 miles south	1.00	\$900,000	\$180,000	
SUBTOTAL						\$7,620,000	\$1,524,000	
New Roads/ Connectors	Bill Gardner-Peeksville Connector	Bill Gardner Pkwy.	Peeksville Rd.	4-lane connector with bridge	3.72	\$14,089,000	\$2,817,800	
	Leguin Mill-Grove Rd. Connector (Loop Road)	Leguin Mill Rd.	Grove Rd.	2-lane connector	1.10	\$1,540,000	\$308,000	
	Locust Rd.-Davis Rd. Connector	Locust Rd.	Davis Rd.	2-lane connector	1.00	\$1,400,000	\$280,000	
	Price Dr. Extension	Current Terminus	Indian Creek Rd.	2-lane connector	2.32	\$3,248,000	\$649,600	
	E. I-75 Frontage Rd.	Bill Gardner Pkwy.	Bethlehem Rd.	2-lane connector	4.00	\$5,600,000	\$1,120,000	
	Indian Creek-Tanger Blvd. Connector (Loop Road)	Indian Creek Rd.	Tanger Blvd.	2-lane connector	1.04	\$1,456,000	\$291,200	
	Bethlehem-Pine Grove Connector (Loop Road)	Bethlehem Rd.	Grove Rd.	2-lane connector	1.20	\$1,680,000	\$336,000	
	Short Sections of Loop Road							
		Bethlehem-Lester Mill	Bethlehem Rd.	Lester Mill Rd.	2-lane connector	0.92	\$1,288,000	\$257,600
		Davis Lk.-Colvin	Davis Lk. Rd.	Davis Lk. Rd.	2-lane connector	0.40	\$560,000	\$112,000
	Colvin-So. Bethany	Colvin Rd.	Colvin Rd.	2-lane connector	0.40	\$560,000	\$112,000	
	So. Bethany-Hi Hope	So. Bethany Rd.	Hi Hope Rd.	2-lane connector	0.40	\$560,000	\$112,000	
	Hi Hope-Leguim Mill	Hi Hope Rd.	Leguin Mill Rd.	2-lane connector	0.40	\$560,000	\$112,000	
SUBTOTAL						\$32,541,000	\$6,508,200	
Add Thru Lanes	Bill Gardner Pkwy.	SR 155	Lester Mill Rd.	2 to 4 thru lanes	3.86	\$7,044,500	\$1,408,900	
		Lester Mill Rd.	Price Dr.	2 to 6 thru lanes	4.68	\$8,541,000	\$1,708,200	
		Price Dr.	SB I-75 Ramps	2 to 6 thru lanes	0.47	\$862,313	\$172,463	
		SB I-75 Ramps	Tanger Blvd.	4 to 6 thru lanes	0.64	\$1,168,000	\$233,600	
		Tanger Blvd.	Bill Gardner-Peeksville Conn.	4 to 6 thru lanes	0.20	\$365,000	\$73,000	
	Peeksville Rd.	Bill Gardner-Peeksville Conn.	Leguin Mill Rd.	2 to 4 thru lanes	0.80	\$1,460,000	\$292,000	
		Leguin Mill Rd.	Unity Grove Rd.	2 to 4 thru lanes	2.10	\$3,832,500	\$766,500	
		Unity Grove Rd.	So. Ola Rd.	2 to 4 thru lanes	2.14	\$3,905,500	\$781,100	
		So. Ola Rd.	Burg Rd.	2 to 4 thru lanes	1.12	\$2,044,000	\$408,800	
	SR 42	Harris Rd.	Bethlehem Rd.	2 to 4 thru lanes	1.02	\$1,861,500	\$372,300	
		Bethlehem Rd.	Bill Gardner Pkwy.	2 to 4 thru lanes	3.74	\$6,825,500	\$1,365,100	
		Bill Gardner Pkwy.	Peeksville Rd.	2 to 4 thru lanes	0.68	\$1,241,000	\$248,200	
		Peeksville Rd.	Locust Grove Griffin Rd.	2 to 4 thru lanes	0.90	\$1,642,500	\$328,500	
		Locust Grove Griffin Rd.	Grove/Roberts	2 to 4 thru lanes	0.40	\$730,000	\$146,000	
		Grove/Roberts	Tanger Blvd.	2 to 4 thru lanes	1.72	\$3,139,000	\$627,800	
		Tanger Blvd.	Locust Rd.	2 to 4 thru lanes	0.52	\$949,000	\$189,800	
		Locust Rd.	Butts County Line	2 to 4 thru lanes	2.75	\$5,018,750	\$1,003,750	
	Locust Grove Griffin Rd.	Lester Mill Rd.	I-75	2 to 4 thru lanes	0.72	\$1,008,000	\$201,600	
		I-75	Tanger Blvd.	2 to 4 thru lanes	3.08	\$4,312,000	\$862,400	
		Tanger Blvd.	Roberts Rd.	2 to 4 thru lanes	0.68	\$952,000	\$190,400	
	Tanger Blvd.	Tanger Outlet Driveway	Indian Creek Rd.	2 to 4 thru lanes	2.08	\$2,912,000	\$582,400	
		Indian Creek Rd.	Locust Grove Griffin Rd.	2 to 4 thru lanes	1.36	\$1,904,000	\$380,800	
	Indian Creek Rd.	Locust Grove Griffin Rd.	US23/SR42	2 to 4 thru lanes	2.76	\$3,864,000	\$772,800	
		Lester Mill Rd.	Price Dr.	2 to 4 thru lanes	1.66	\$2,324,000	\$464,800	
		Price Dr.	I-75	2 to 4 thru lanes	0.50	\$700,000	\$140,000	
	Roberts Rd./Grove Rd.	I-75	Indian Creek-Tanger Conn.	2 to 4 thru lanes	0.52	\$728,000	\$145,600	
		Locust Grove Griffin Rd.	US23/SR42	2 to 4 thru lanes	0.56	\$784,000	\$156,800	
		US23/SR42	Jackson St.	2 to 4 thru lanes	0.22	\$308,000	\$61,600	
	SUBTOTAL						\$70,426,063	\$14,085,213
	Reconstruct Existing Facility/ Without Extra Thru Capacity	Lester Mill Rd.	Bill Gardner Rd.	Bethlehem Rd.	Reconstruct to higher standard 2-lane	3.44	\$3,096,000	\$619,200
Bill Gardner Rd.			Indian Creek Rd.	Reconstruct to higher standard 2-lane	3.34	\$3,006,000	\$601,200	
Price Dr.		Bill Gardner Rd.	Bethlehem Rd.	Reconstruct to higher standard 2-lane	3.74	\$3,366,000	\$673,200	
		Bill Gardner Rd.	Price Dr. Extension	Reconstruct to higher standard 2-lane	1.20	\$1,080,000	\$216,000	
Bethlehem Rd.		Lester Mill Rd.	US23/SR42	Reconstruct to higher standard 2-lane	2.06	\$1,854,000	\$370,800	
		Colvin Rd.	Davis Lk. Rd.	Reconstruct to higher standard 2-lane	0.82	\$738,000	\$147,600	
So. Bethany Rd.		Davis Lk. Rd.	So. Bethany Rd.	Reconstruct to higher standard 2-lane	1.38	\$1,242,000	\$248,400	
		Jackson St.	Hi Hope Rd.	Reconstruct to higher standard 2-lane	2.04	\$1,836,000	\$367,200	
		Hi Hope Rd.	Colvin Rd.	Reconstruct to higher standard 2-lane	1.04	\$936,000	\$187,200	
Locust Rd.		Higgins Dr.	US23/SR42	Reconstruct to higher standard 2-lane	0.34	\$306,000	\$61,200	
		Grove Rd.	Jackson St.	Reconstruct to higher standard 2-lane	0.54	\$486,000	\$97,200	
Leguin Mill Rd.		Peeksville Rd.	Hi Hope Rd.	Reconstruct to higher standard 2-lane	1.24	\$1,116,000	\$223,200	
Hi Hope Rd.		Leguin Mill Rd.	So. Bethany Rd.	Reconstruct to higher standard 2-lane	2.58	\$2,322,000	\$464,400	
Pine Grove Rd.		Bethlehem-Pine Grove Conn.	Davis Lk. Rd.	Reconstruct to higher standard 2-lane	0.20	\$180,000	\$36,000	
Hosannah Rd.		Locust Grove Griffin Rd.	1.0 mile so. Of Locust Grove Griffin	Reconstruct to higher standard 2-lane	1.80	\$1,620,000	\$324,000	
SUBTOTAL						\$23,184,000	\$4,636,800	
GRAND TOTAL						\$133,771,063	\$26,754,213	

(1) Unit construction costs from reference document, "Costing Tool Database for Transportation Capital Improvements". Prepared for the GRTA, Ga. DOT and ARC in December of 2003.
 (2) Local share assumed to be 20% for all projects, recognizing that there will be substantial variation from project to project.

Table A-1
Service Levels for Existing Conditions

STREET NAME	LOCATION		LENGTH	EXISTING CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Bill Gardner Pkwy.	SR 155	Lester Mill	1.93	Collector	2	12,150	6,800	0.56
	Lester Mill	Price Dr.	1.14	Collector	2	12,150	6,900	0.57
	Price Dr.	SB I-75 Exit/Ent.	0.28	Collector	2	12,150	8,200	0.67
	SB I-75 Exit/Ent.	NB I75 Exit/Ent.	0.15	Collector	4	24,300	17,100	0.70
	NB I75 Exit/Ent.	Tanger Blvd.	0.17	Collector	4	24,300	24,000	0.99
	Tanger Blvd.	US23/SR42	0.44	Collector	4	24,300	18,100	0.74
SUBTOTALS			4.11		9.74	59,171	37,895	0.61
US23/SR42	Harris Rd.	Bethlehem	0.51	Arterial	2	14,900	10,100	0.68
	Bethlehem	Colvin Rd.	0.70	Arterial	2	14,900	10,100	0.68
	Colvin Rd.	Jackson St.	0.36	Arterial	2	14,900	8,200	0.55
	Jackson St.	Bill Gardner Pkwy.	0.81	Arterial	2	14,900	8,800	0.59
	Bill Gardner Pkwy.	Peeksville Rd.	0.34	Arterial	2	14,900	18,600	1.25
	Peeksville Rd.	LGG Rd.	0.45	Arterial	2	14,900	12,000	0.81
	LGG Rd.	Roberts/Grove	0.20	Arterial	2	14,900	10,500	0.70
	Roberts/Grove	Tanger Blvd.	0.86	Arterial	2	14,900	10,600	0.71
	Tanger Blvd.	Locust Rd.	0.26	Arterial	2	14,900	13,100	0.88
	Locust Rd.	Davis Rd.	0.37	Arterial	2	14,900	13,000	0.87
Davis Rd.	Butts County Line	2.38	Arterial	2	14,900	12,600	0.85	
SUBTOTALS			7.24		14.48	107,876	83,445	0.77
Peeksville Rd.	US23/SR42	Jackson St.	0.02	Collector	2	12,150	7,400	0.61
	Jackson St.	Club Dr.	0.52	Collector	2	12,150	7,200	0.59
	Club Dr.	Leguin Mill Rd.	0.37	Collector	2	12,150	7,100	0.58
	Leguin Mill Rd.	Grove Rd.	0.32	Collector	2	12,150	5,800	0.48
	Grove Rd.	Unity Grove Rd.	0.73	Collector	2	12,150	6,100	0.50
	Unity Grove Rd.	So. Ola Rd.	1.07	Collector	2	12,150	3,800	0.31
	So. Ola Rd.	Burg Rd.	0.56	Collector	2	12,150	2,000	0.16
SUBTOTALS			3.59		7.18	43,619	18,014	0.41
LGG Rd.	Lester Mill Rd.	I-75	0.35	Collector	2	12,150	2,200	0.18
	I-75	Tanger Blvd.	1.56	Collector	2	12,150	2,200	0.18
	Tanger Blvd.	Shoal Creek/Roberts	0.34	Collector	2	12,150	2,200	0.18
	Shoal Creek/Roberts	US23/SR42	0.27	Collector	2	12,150	1,700	0.14
SUBTOTALS			2.52		5.04	30,618	5,409	0.11

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-1 (Continued)
Service Levels for Existing Conditions

STREET NAME	LOCATION		LENGTH	EXISTING CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Tanger Blvd.	Bill Gardner Pkwy.	Tanger Outlet	0.25	Collector	4	24,300	10,500	0.43
	Tanger Outlet	Indian Creek	1.04	Collector	2	12,150	7,800	0.64
	Indian Creek	Shoal Creek	0.08	Collector	2	12,150	8,100	0.67
	Shoal Creek	LGG Rd.	0.60	Collector	2	12,150	6,200	0.51
	LGG Rd.	US23/SR42	1.38	Collector	2	12,150	5,600	0.46
	SUBTOTALS		3.35		7.20	43,740	22,833	0.53
Indian Creek	Lester Mill Rd.	I-75	0.25	Collector	2	12,150	300	0.02
	I-75	Tanger Blvd.	0.74	Collector	2	12,150	300	0.02
	Tanger Blvd.	Cemetery Ln	0.46	Collector	2	12,150	500	0.04
	Cemetery Ln	US23/SR42	0.30	Collector	2	12,150	400	0.03
	SUBTOTALS		1.75		3.50	21,263	647	0.03
Lester Mill Rd.	Bethlehem Rd.	Bill Gardner	1.72	Collector	2	12,150	300	0.02
	Bill Gardner	Frog	0.61	Collector	2	12,150	100	0.01
	Frog	Indian Creek	1.06	Collector	2	12,150	100	0.01
	Indian Creek	LGG Rd.	1.82	Collector	2	12,150	100	0.01
	SUBTOTALS		5.21		10.42	63,302	865	0.01
Bethlehem Rd.	Lester Mill Rd.	Price Dr.	0.57	Collector	2	12,150	1,800	0.15
	Price Dr.	I-75	0.17	Collector	2	12,150	1,800	0.15
	I-75	US23/SR42	0.92	Collector	2	12,150	2,100	0.17
	SUBTOTALS		1.66		3.32	20,169	3,264	0.16
Price Dr.	Bethlehem Rd.	Bill Gardner	1.87	Collector	2	12,150	800	0.07
	Bill Gardner	End-of-Road	0.60	Collector	2	12,150	100	0.01
	End-of-Road	Indian Creek	N/A	N/A	N/A	N/A	N/A	N/A
	SUBTOTALS		2.47		4.94	30,011	1,556	0.05
Leguin Mill Rd.	Peeksville Rd.	Hi Hope Rd.	0.62	Collector	2	12,150	2,200	0.18
	Hi Hope Rd.	Harris	0.18	Collector	2	12,150	2,200	0.18
	Harris	Colvin (E)	0.37	Collector	2	12,150	1,700	0.14
	SUBTOTALS		1.17		2.34	14,216	2,389	0.17
Colvin Rd.	US23/SR42	Davis Lk.	0.41	Collector	2	12,150	1,400	0.12
	Davis Lk.	S Bethany	0.61	Collector	2	12,150	1,300	0.11
	S Bethany	Harris	0.76	Collector	2	12,150	800	0.07
	Harris	Leguin Mill	0.23	Collector	2	12,150	1,300	0.11
	Leguin Mill	S Unity	0.44	Collector	2	12,150	600	0.05
	SUBTOTALS		2.45		4.90	29,768	2,538	0.09

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-1 (Continued)
Service Levels for Existing Conditions

STREET NAME	LOCATION		LENGTH	EXISTING CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
S Unity Rd.	Colvin Rd.	Peeksville Rd.	1.17	Collector	2	12,150	1,100	0.09
	Peeksville Rd.	Davis Rd.	1.16	Collector	2	12,150	300	0.02
			2.33		4.66	28,310	1,635	0.06
Shoal Creek/Roberts/Grove	Tanger Blvd.	LGG Rd.	0.53	Collector	2	12,150	2,500	0.21
	LGG Rd.	US23/SR42	0.28	Collector	2	12,150	2,000	0.16
	US23/SR42	Jackson St.	0.11	Collector	2	12,150	1,800	0.15
	Jackson St.	Peeksville Rd.	0.96	Collector	2	12,150	1,800	0.15
			1.88		3.76	22,842	3,811	0.17
Davis Rd.	S. Ola	S. Unity	1.00	Collector	2	12,150	600	0.05
	S. Unity	US23/SR42	0.32	Collector	2	12,150	800	0.07
			1.32		2.64	16,038	856	0.05
Locust Rd.	Butts County Line	Higgins	0.17	Collector	2	12,150	500	0.04
	Higgins	US23/SR42	2.08	Collector	2	12,150	1,000	0.08
			2.25		4.50	27,338	2,165	0.08
Jackson St.	US23/SR42	Grove	1.15	Collector	2	12,150	500	0.04
	Grove	Peeksville Rd.	0.68	Collector	2	12,150	500	0.04
	Peeksville Rd.	Club	0.14	Collector	2	12,150	400	0.03
	Club	S Bethany	0.08	Collector	2	12,150	400	0.03
	S Bethany	Davis Lk	0.22	Collector	2	12,150	300	0.02
	Davis Lk	US23/SR42	0.75	Collector	2	12,150	300	0.02
			3.02		6.04	36,693	1,294	0.04
Davis Lk. Rd.	Jackson St.	Hi Hope Rd.	0.32	Collector	2	12,150	200	0.02
	Hi Hope Rd.	Colvin (W)	0.66	Collector	2	12,150	200	0.02
	Colvin (W)	Colvin (E)	0.05	Collector	2	12,150	1,300	0.11
	Colvin (E)	Pine Grove	0.52	Collector	2	12,150	400	0.03
	Pine Grove	Harris	0.62	Collector	2	12,150	200	0.02
			2.17		4.34	26,366	593	0.02
S Bethany Rd.	Jackson St.	Hi Hope Rd.	1.02	Collector	2	12,150	500	0.04
	Hi Hope Rd.	Colvin (W)	0.32	Collector	2	12,150	400	0.03
	Colvin (W)	Colvin (E)	0.20	Collector	2	12,150	800	0.07
	Colvin (E)	Harris	0.53	Collector	2	12,150	400	0.03
			2.07		4.14	25,151	1,010	0.04

N/A - Denotes section does not exist.

- (1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;
- (2) Daily Capacity at LOS "D"
- (3) PBSJ Subarea Model - Average Daily Traffic Volume

Table A-2
Service Levels for 2025 No-Build Condition

STREET NAME	LOCATION		LENGTH	FUTURE YEAR 2025 CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Bill Gardner Pkwy.	SR 155	Lester Mill	1.93	Collector	2	12,150	23,900	1.97
	Lester Mill	Price Dr.	1.14	Collector	2	12,150	35,400	2.91
	Price Dr.	SB I-75 Exit/Ent.	0.28	Collector	2	12,150	46,100	3.79
	SB I-75 Exit/Ent.	NB I75 Exit/Ent.	0.15	Collector	4	24,300	60,600	2.49
	NB I75 Exit/Ent.	Tanger Blvd.	0.17	Collector	4	24,300	84,000	3.46
	Tanger Blvd.	US23/SR42	0.44	Collector	4	24,300	62,400	2.57
SUBTOTALS			4.11		9.74	59,171	150,217	2.50
US23/SR42	Harris Rd.	Bethlehem	0.51	Arterial	2	14,900	16,300	1.09
	Bethlehem	Colvin Rd.	0.70	Arterial	2	14,900	35,600	2.39
	Colvin Rd.	Jackson St.	0.36	Arterial	2	14,900	24,100	1.62
	Jackson St.	Bill Gardner Pkwy.	0.81	Arterial	2	14,900	29,100	1.95
	Bill Gardner Pkwy.	Peeksville Rd.	0.34	Arterial	2	14,900	34,700	2.33
	Peeksville Rd.	LGG Rd.	0.45	Arterial	2	14,900	28,400	1.91
	LGG Rd.	Roberts/Grove	0.20	Arterial	2	14,900	26,000	1.74
	Roberts/Grove	Tanger Blvd.	0.86	Arterial	2	14,900	26,700	1.79
	Tanger Blvd.	Locust Rd.	0.26	Arterial	2	14,900	35,000	2.35
	Locust Rd.	Davis Rd.	0.37	Arterial	2	14,900	33,700	2.26
	Davis Rd.	Butts County Line	2.38	Arterial	2	14,900	30,300	2.03
SUBTOTALS			7.24		14.48	107,876	211,903	1.96
Peeksville Rd.	US23/SR42	Jackson St.	0.02	Collector	2	12,150	17,000	1.40
	Jackson St.	Club Dr.	0.52	Collector	2	12,150	16,500	1.36
	Club Dr.	Leguin Mill Rd.	0.37	Collector	2	12,150	19,600	1.61
	Leguin Mill Rd.	Grove Rd.	0.32	Collector	2	12,150	22,400	1.84
	Grove Rd.	Unity Grove Rd.	0.73	Collector	2	12,150	24,300	2.00
	Unity Grove Rd.	So. Ola Rd.	1.07	Collector	2	12,150	23,000	1.89
	So. Ola Rd.	Burg Rd.	0.56	Collector	2	12,150	12,500	1.03
SUBTOTALS			3.59		7.18	43,619	72,689	1.67
LGG Rd.	Lester Mill Rd.	I-75	0.35	Collector	2	12,150	19,500	1.60
	I-75	Tanger Blvd.	1.56	Collector	2	12,150	21,300	1.75
	Tanger Blvd.	Shoal Creek/Roberts	0.34	Collector	2	12,150	21,900	1.80
	Shoal Creek/Roberts	US23/SR42	0.27	Collector	2	12,150	20,200	1.66
SUBTOTALS			2.52		5.04	30,618	52,953	1.06

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-2 (Continued)
Service Levels for 2025 No-Build Condition

STREET NAME	LOCATION		LENGTH	FUTURE YEAR 2025 CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Tanger Blvd.	Bill Gardner Pkwy.	Tanger Outlet	0.25	Collector	4	24,300	33,500	1.38
	Tanger Outlet	Indian Creek	1.04	Collector	2	12,150	30,700	2.53
	Indian Creek	Shoal Creek	0.08	Collector	2	12,150	36,000	2.96
	Shoal Creek	LGG Rd.	0.60	Collector	2	12,150	28,900	2.38
	LGG Rd.	US23/SR42	1.38	Collector	2	12,150	29,000	2.39
SUBTOTALS			3.35		7.20	43,740	100,543	2.37
Indian Creek	Lester Mill Rd.	I-75	0.25	Collector	2	12,150	26,700	2.20
	I-75	Tanger Blvd.	0.74	Collector	2	12,150	27,700	2.28
	Tanger Blvd.	Cemetary Ln	0.46	Collector	2	12,150	14,800	1.22
	Cemetary Ln	US23/SR42	0.30	Collector	2	12,150	17,300	1.42
SUBTOTALS			1.75		3.50	21,263	39,171	1.84
Lester Mill Rd.	Bethlehem Rd.	Bill Gardner	1.72	Collector	2	12,150	14,100	1.16
	Bill Gardner	Frog	0.61	Collector	2	12,150	23,700	1.95
	Frog	Indian Creek	1.06	Collector	2	12,150	28,600	2.35
	Indian Creek	LGG Rd.	1.82	Collector	2	12,150	13,300	1.09
SUBTOTALS			5.21		10.42	63,302	93,231	1.47
Bethlehem Rd.	Lester Mill Rd.	Price Dr.	0.57	Collector	2	12,150	19,600	1.61
	Price Dr.	I-75	0.17	Collector	2	12,150	29,500	2.43
	I-75	US23/SR42	0.92	Collector	2	12,150	30,200	2.49
SUBTOTALS			1.66		3.32	20,169	43,971	2.18
Price Dr.	Bethlehem Rd.	Bill Gardner	1.87	Collector	2	12,150	24,500	2.02
	Bill Gardner	End-of-Road	0.60	Collector	2	12,150	22,400	1.84
	End-of-Road	Indian Creek	N/A	N/A	N/A	N/A	N/A	N/A
SUBTOTALS			2.47		4.94	30,011	59,255	1.97
Leguin Mill Rd.	Peeksville Rd.	Hi Hope Rd.	0.62	Collector	2	12,150	9,000	0.74
	Hi Hope Rd.	Harris	0.18	Collector	2	12,150	16,000	1.32
	Harris	Colvin (E)	0.37	Collector	2	12,150	11,500	0.95
SUBTOTALS			1.17		2.34	14,216	12,715	0.89
Colvin Rd.	US23/SR42	Davis Lk.	0.41	Collector	2	12,150	12,100	1.00
	Davis Lk.	S Bethany	0.61	Collector	2	12,150	10,700	0.88
	S Bethany	Harris	0.76	Collector	2	12,150	10,700	0.88
	Harris	Leguin Mill	0.23	Collector	2	12,150	13,200	1.09
	Leguin Mill	S Unity	0.44	Collector	2	12,150	14,500	1.19
SUBTOTALS			2.45		4.90	29,768	29,036	0.98

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-2 (Continued)
Service Levels for 2025 No-Build Condition

STREET NAME	LOCATION		LENGTH	FUTURE YEAR 2025 CONDITIONS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
S Unity Rd.	Colvin Rd.	Peeksville Rd.	1.17	Collector	2	12,150	15,700	1.29
	Peeksville Rd.	Davis Rd.	1.16	Collector	2	12,150	14,100	1.16
			2.33		4.66	28,310	34,725	1.23
Shoal Creek/Roberts/Grove	Tanger Blvd.	LGG Rd.	0.53	Collector	2	12,150	13,300	1.09
	LGG Rd.	US23/SR42	0.28	Collector	2	12,150	22,900	1.88
	US23/SR42	Jackson St.	0.11	Collector	2	12,150	24,200	1.99
	Jackson St.	Peeksville Rd.	0.96	Collector	2	12,150	13,800	1.14
			1.88		3.76	22,842	29,371	1.29
Davis Rd.	S. Ola	S. Unity	1.00	Collector	2	12,150	13,500	1.11
	S. Unity	US23/SR42	0.32	Collector	2	12,150	19,300	1.59
			1.32		2.64	16,038	19,676	1.23
Locust Rd.	Butts County Line	Higgins	0.17	Collector	2	12,150	9,200	0.76
	Higgins	US23/SR42	2.08	Collector	2	12,150	13,700	1.13
			2.25		4.50	27,338	30,060	1.10
Jackson St.	US23/SR42	Grove	1.15	Collector	2	12,150	10,200	0.84
	Grove	Peeksville Rd.	0.68	Collector	2	12,150	13,000	1.07
	Peeksville Rd.	Club	0.14	Collector	2	12,150	15,900	1.31
	Club	S Bethany	0.08	Collector	2	12,150	18,400	1.51
	S Bethany	Davis Lk	0.22	Collector	2	12,150	10,700	0.88
	Davis Lk	US23/SR42	0.75	Collector	2	12,150	1,600	0.13
			3.02		6.04	36,693	27,822	0.76
Davis Lk. Rd.	Jackson St.	Hi Hope Rd.	0.32	Collector	2	12,150	10,000	0.82
	Hi Hope Rd.	Colvin (W)	0.66	Collector	2	12,150	8,700	0.72
	Colvin (W)	Colvin (E)	0.05	Collector	2	12,150	10,300	0.85
	Colvin (E)	Pine Grove	0.52	Collector	2	12,150	12,700	1.05
	Pine Grove	Harris	0.62	Collector	2	12,150	3,600	0.30
			2.17		4.34	26,366	18,293	0.69
S Bethany Rd.	Jackson St.	Hi Hope Rd.	1.02	Collector	2	12,150	12,600	1.04
	Hi Hope Rd.	Colvin (W)	0.32	Collector	2	12,150	12,300	1.01
	Colvin (W)	Colvin (E)	0.20	Collector	2	12,150	13,100	1.08
	Colvin (E)	Harris	0.53	Collector	2	12,150	4,000	0.33
			2.07		4.14	25,151	21,528	0.86

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) PBSJ Subarea Model - Average Daily Traffic Volume

Table A-3
Service Levels for 2025 Transportation Plan Condition

STREET NAME	LOCATION		LENGTH	2025 CONDITIONS - WITH IMPROVEMENTS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Bill Gardner Pkwy./ Peeksville Rd.	SR 155	Lester Mill	1.93	Arterial	4	29,800	16,600	0.56
	Lester Mill	Price Dr.	1.14	Arterial	6	44,700	46,600	1.04
	Price Dr.	SB I-75 Exit/Ent.	0.28	Arterial	6	44,700	79,300	1.77
	SB I-75 Exit/Ent.	NB I75 Exit/Ent.	0.15	Arterial	6	44,700	78,600	1.76
	NB I75 Exit/Ent.	Tanger Blvd.	0.17	Arterial	6	44,700	77,600	1.74
	Tanger Blvd.	US23/SR42	0.44	Arterial	6	44,700	60,700	1.36
	US23/SR42	Club Dr.	0.42	Arterial	4	29,800	35,900	1.20
	Club Dr.	Old Peeksville Rd.	0.25	Arterial	4	29,800	37,100	1.24
	Old Peeksville Rd.	Leguin Mill Rd.	0.37	Arterial	4	29,800	36,500	1.22
	Leguin Mill Rd.	Grove Rd.	0.32	Arterial	4	29,800	32,400	1.09
	Grove Rd.	Unity Grove Rd.	0.73	Arterial	4	29,800	38,000	1.28
	Unity Grove Rd.	So. Ola Rd.	1.07	Arterial	4	29,800	37,600	1.26
So. Ola Rd.	Burg Rd.	0.56	Arterial	4	29,800	19,100	0.64	
SUBTOTALS			7.83		35.68	265,816	285,950	1.04
US23/SR42	Harris Rd.	Bethlehem	0.51	Arterial	4	29,800	20,100	0.67
	Bethlehem	Colvin Rd.	0.70	Arterial	4	29,800	24,100	0.81
	Colvin Rd.	Jackson St.	0.36	Arterial	4	29,800	25,000	0.84
	Jackson St.	Bill Gardner Pkwy.	0.81	Arterial	4	29,800	26,200	0.88
	Bill Gardner Pkwy.	Peeksville Rd.	0.34	Arterial	4	29,800	26,700	0.90
	Peeksville Rd.	LGG Rd.	0.45	Arterial	4	29,800	29,400	0.99
	LGG Rd.	Roberts/Grove	0.20	Arterial	4	29,800	25,600	0.86
	Roberts/Grove	Tanger Blvd.	0.86	Arterial	4	29,800	39,000	1.31
	Tanger Blvd.	Locust Rd.	0.26	Arterial	4	29,800	48,200	1.62
	Locust Rd.	Davis Rd.	0.37	Arterial	4	29,800	44,500	1.49
	Davis Rd.	Butts County Line	2.38	Arterial	4	29,800	34,500	1.16
SUBTOTALS			7.24		28.96	215,752	229,418	1.05
Old Peeksville Rd.	US23/SR42	Jackson St.	0.02	Collector	2	12,150	500	0.04
	Jackson St.	Bill Gardner Conn.	0.52	Collector	2	12,150	400	0.03
SUBTOTALS			0.54		1.08	6,561	218	0.03
LGG Rd.	Lester Mill Rd.	SB I-75 Exit/Ent.	0.26	Collector	4	24,300	22,200	0.91
	SB I-75 Exit/Ent.	NB I75 Exit/Ent.	0.21	Collector	4	24,300	21,800	0.90
	NB I75 Exit/Ent.	Tanger Blvd.	1.44	Collector	4	24,300	22,700	0.93
	Tanger Blvd.	Shoal Creek/Roberts	0.34	Collector/Loop	4	24,300	26,100	1.07
	Shoal Creek/Roberts	US23/SR42	0.27	Collector	2	12,150	8,200	0.67
SUBTOTALS			2.52		9.54	57,956	54,126	0.92

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-3 (Continued)
Service Levels for 2025 Transportation Plan Condition

STREET NAME	LOCATION		LENGTH	2025 CONDITIONS - WITH IMPROVEMENTS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Tanger Blvd.	Bill Gardner Pkwy.	Tanger Outlet	0.25	Collector	4	24,300	20,500	0.84
	Tanger Outlet	Indian Creek	1.04	Collector	4	24,300	19,500	0.80
	Indian Creek	Shoal Creek	0.08	Collector	4	24,300	20,200	0.83
	Shoal Creek	So. Loop	0.14	Collector	4	24,300	11,900	0.49
	So. Loop	LGG Rd.	0.46	Collector/Loop	4	24,300	30,300	1.25
	LGG Rd.	US23/SR42	1.38	Collector	4	24,300	22,500	0.93
SUBTOTALS			3.35		13.40	81,405	73,675	0.91
Indian Creek	Lester Mill Rd.	Price Dr. Ext.	0.83	Collector/Loop	4	24,300	17,300	0.71
	Price Dr. Ext.	I-75	0.25	Collector/Loop	4	24,300	17,500	0.72
	I-75	Tanger Connector	0.26	Collector/Loop	4	24,300	17,500	0.72
	Tanger Connector	Tanger Blvd.	0.48	Collector	2	12,150	1,800	0.15
	Tanger Blvd.	New St.	0.46	Collector	2	12,150	1,600	0.13
	New St.	US23/SR42	0.30	Collector	2	12,150	3,200	0.26
SUBTOTALS			2.58		7.84	47,628	25,844	0.45
Lester Mill Rd.	Bethlehem Rd.	Bill Gardner	1.72	Collector/Loop	2	12,150	10,000	0.82
	Bill Gardner	Frog	0.61	Collector/Loop	2	12,150	12,200	1.00
	Frog	Indian Creek	1.06	Collector/Loop	2	12,150	11,800	0.97
	Indian Creek	LGG Rd.	1.82	Collector/Loop	2	12,150	5,500	0.45
SUBTOTALS			5.21		10.42	63,302	47,160	0.75
Bethlehem Rd./ Bethlehem Extension	Lester Mill Rd.	Price Dr.	0.57	Collector/Loop	2	12,150	14,100	1.16
	Price Dr.	I-75	0.17	Collector/Loop	2	12,150	14,700	1.21
	I-75	US23/SR42	0.92	Collector/Loop	2	12,150	12,000	0.99
	US23/SR42	Pine Grove	0.46	Collector/Loop	2	12,150	7,000	0.58
	Pine Grove	Davis Lk.	0.21	Collector/Loop	2	12,150	3,300	0.27
SUBTOTALS			2.33		4.66	28,310	25,489	0.90
Price Dr./ Price Dr. Extension	Bethlehem Rd.	Bill Gardner	1.87	Collector	2	12,150	4,000	0.33
	Bill Gardner	Current Terminus	0.60	Collector	2	12,150	9,000	0.74
	Current Terminus	Indian Creek	1.16	Collector	2	12,150	4,300	0.35
SUBTOTALS			3.63		7.26	44,105	17,868	0.41
Leguin Mill Rd./ Leguin Mill Extension	Grove Rd.	Peeksville	0.55	Collector/Loop	2	12,150	4,600	0.38
	Peeksville Rd.	Hi Hope Rd.	0.62	Collector/Loop	2	12,150	12,000	0.99
	Hi Hope Rd.	Harris	0.18	Collector	2	12,150	10,400	0.86
	Harris	Colvin (E)	0.37	Collector	2	12,150	4,000	0.33
SUBTOTALS			1.72		3.44	20,898	13,322	0.64

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) Average Daily Traffic Volume

Table A-3 (Continued)
Service Levels for 2025 Transportation Plan Condition

STREET NAME	LOCATION		LENGTH	2025 CONDITIONS - WITH IMPROVEMENTS				
	From	To		Functional Class	No. of Lanes ¹	Daily Capacity ²	Daily Traffic ³	V/C Ratio
Colvin Rd.	US23/SR42	Davis Lk.	0.41	Collector	2	12,150	3,600	0.30
	Davis Lk.	S Bethany	0.69	Collector/Loop	2	12,150	3,300	0.27
	S Bethany	Harris	0.76	Collector	2	12,150	1,200	0.10
	Harris	Leguin Mill	0.23	Collector	2	12,150	3,000	0.25
	Leguin Mill	S Unity	0.44	Collector	2	12,150	1,200	0.10
SUBTOTALS			2.53		5.06	30,740	5,883	0.19
S Unity Rd.	Colvin Rd.	Peeksville Rd.	1.17	Collector	2	12,150	2,500	0.21
	Peeksville Rd.	Davis Rd.	1.16	Collector	2	12,150	1,300	0.11
	SUBTOTALS			2.33		4.66	28,310	4,433
Shoal Creek/Roberts/Grove	Tanger Blvd.	LGG Rd.	0.53	Collector	2	12,150	9,800	0.81
	LGG Rd.	US23/SR42	0.28	Collector/Loop	4	24,300	26,500	1.09
	US23/SR42	Jackson St.	0.11	Collector/Loop	4	24,300	12,200	0.50
	Jackson St.	Leguin Mill Extension	0.27	Collector/Loop	2	12,150	11,100	0.91
	Leguin Mill Extension	Peeksville Rd.	0.69	Collector	2	12,150	7,000	0.58
SUBTOTALS			1.88		4.54	27,581	21,783	0.76
Davis Rd.	S. Ola	S. Unity	1.00	Collector	2	12,150	12,000	0.99
	S. Unity	US23/SR42	0.32	Collector	2	12,150	14,600	1.20
	SUBTOTALS			1.32		2.64	16,038	16,672
Locust Rd./ Davis Connector	Butts County Line	Higgins	0.17	Collector	2	12,150	5,100	0.42
	Higgins	US23/SR42	2.08	Collector	2	12,150	9,000	0.74
	Higgins	US23/SR42	0.50	Collector	2	12,150	200	0.02
SUBTOTALS			2.75		5.50	33,413	19,687	0.59
Jackson St.	US23/SR42	Grove	1.15	Collector	2	12,150	2,500	0.21
	Grove	Peeksville Rd.	0.68	Collector	2	12,150	1,100	0.21
	Peeksville Rd.	Club	0.14	Collector	2	12,150	500	0.09
	Club	S Bethany	0.08	Collector	2	12,150	1,600	0.04
	S Bethany	Davis Lk	0.22	Collector	2	12,150	2,100	0.13
	Davis Lk	US23/SR42	0.75	Collector	2	12,150	1,200	0.10
	SUBTOTALS			3.02		6.04	36,693	5,183
Davis Lk. Rd.	Jackson St.	Hi Hope Rd.	0.32	Collector	2	12,150	2,200	0.18
	Hi Hope Rd.	Colvin (W)	0.66	Collector	2	12,150	900	0.07
	Colvin (W)	Colvin (E)	0.05	Collector	2	12,150	3,100	0.26
	Colvin (E)	Pine Grove	0.52	Collector/Loop	2	12,150	5,000	0.41
	Pine Grove	Harris	0.62	Collector	2	12,150	1,500	0.12
SUBTOTALS			2.17		4.34	26,366	4,983	0.42
S Bethany Rd.	Jackson St.	Hi Hope Rd.	1.02	Collector	2	12,150	500	0.04
	Hi Hope Rd.	Colvin (W)	0.32	Collector	2	12,150	400	0.03
	Colvin (W)	Colvin (E)	0.20	Collector	2	12,150	800	0.07
	Colvin (E)	Harris	0.53	Collector	2	12,150	700	0.06
SUBTOTALS			2.07		4.14	25,151	1,169	0.05

N/A - Denotes section does not exist.

(1) Number of Through Lanes; not auxiliary, turn or continuous center left turn lanes;

(2) Daily Capacity at LOS "D"

(3) PBSJ Subarea Model - Average Daily Traffic Volume