

Lee County, Florida



SUPPORT STUDY: *AFFORDABLE HOUSING METHODOLOGY*

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***Public Review
Draft***

Submitted by:

CLARION ASSOCIATES, LLC
1526 East Franklin Street, Suite 102
Chapel Hill, NC 27514
(919) 967-9188
www.clarionassociates.com

In association with:

Dr. James C. Nicholas
Bill Higgins
RRC Associates



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I. INTRODUCTION AND EXECUTIVE SUMMARY

A. INTRODUCTION

Real estate prices in Lee County, Florida have increased significantly in recent years. In addition, housing prices in the County have continued to rise since 2000 to the point that a household earning a moderate income today can no longer afford a majority of housing that is available through the private market. Concern about this issue has grown to the point that business owners are concerned about the difficulties of recruiting and retaining employees because of the lack of local affordable housing for their workers.

In response to this problem, in March 2005 Lee County initiated an effort to develop an Affordable Housing Methodology to determine the need new residential and non-residential developments create for housing that is affordable to the County's workforce. As part of this effort, the County is also exploring the options available to mitigate the affordable housing need identified. The first phase of this initiative involved the development of an *Affordable Housing Policy Memorandum* that:

- Discussed methods for evaluating the impacts of new development on local affordable housing demand;
- Proposed a policy format and methodology for developing Lee County's Affordable Housing methodology; and
- Surveyed how other local governments throughout the nation are addressing their affordable housing problems.

In October 2005, the Lee County Board of Commissioners and the Board's Affordable Housing Advisory Committee held workshops to review and discuss the *Affordable Housing Policy Memorandum* and provided direction for moving forward with the second phase of the initiative.

Phase Two includes the development of several reports, specifically:

- (1) An Affordable Housing *Support Study* to provide background and technical documentation for the Affordable Housing Methodology, and statistical support for any kind of implementation and mitigation program;
- (2) Additionally, a *Policy Memorandum* that outlines options the County might pursue to mitigate affordable housing demand, options for administering a mitigation program, and sources of additional funding that might be considered in addressing the affordable housing needs of the workforce; and
- (3) Development of Implementation Legislation, if appropriate, to implement any program directed by the County.

This is the *Affordable Housing Support Study* (hereinafter “Study”). Initially it identifies the workforce housing problem in the County. It then provides the technical documentation and analysis needed to establish whether new development (both residential and non-residential) creates a need for affordable housing. This is done by evaluating the linkage between (1) employment generated by the construction and maintenance/operations (post-construction) of new residential units, (2) the employment generated by the construction and then employment that occurs at non-residential development after the construction is completed (post-construction activities), and (3) critical workers that provide educational, public safety and law enforcement services to both residential and non-residential developments. Because the analysis demonstrates there is a need created by both residential and non-residential development for affordable housing, the Study identifies the need both in affordable housing units (or a fraction thereof) that could be built to address the need, or funding shortages (housing assistance) that could be addressed to meet the need for workforce housing.

After this Introduction (Section I), there is an Executive Summary in this section that summarizes the findings of the Support Study.

The second section in this Support Study describes the housing affordability problem in Lee County (See **Section II. Problem Description**). It shows that while employment in the County has grown over the past decade, wages have tended to stagnate and housing offerings at prices that the large majority of the local employment base can afford have declined.

The third section (**Section III: The Need for Affordable Housing Created by New Development**) discusses the relationship between residential and nonresidential development and the demand this new development creates for affordable workforce housing. It outlines the methodology and calculations that determine the need created for affordable workforce housing by new development (both residential and nonresidential). As is highlighted above, because the analysis demonstrates there is a need created by both residential and non-residential development for affordable workforce housing, the Study quantifies the need both in affordable workforce housing units (or a fraction thereof) that could be built to address the need, and funding shortages (housing assistance) that could be addressed to meet the need.

B. EXECUTIVE SUMMARY

A summary of the findings and conclusions of this *Support Study: Affordable Housing Methodology*, are outlined below.

1. Problem Description

There is a workforce housing problem in Lee County today. Like many other communities in south Florida, the price of housing in the county increased dramatically in recent years, while incomes and wages remained relatively static. Over the past 13 years the gap between median household income and median housing cost in the county increased to the point that

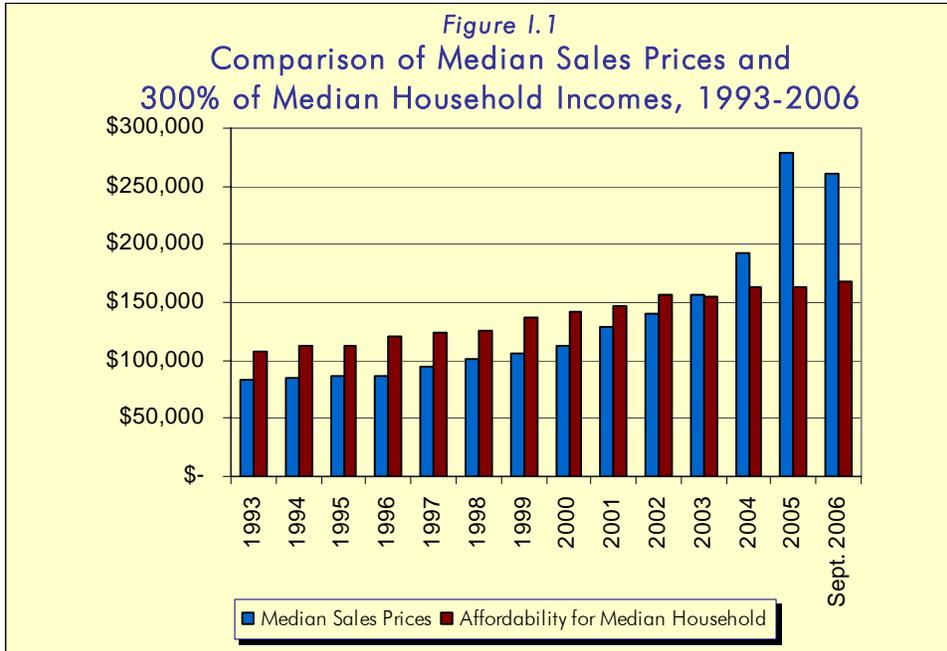
over the past three years median housing costs are no longer affordable to those in the workforce with a median household income.

In 1993, the median income for a household of four in Lee County was \$36,100, and the median price of a single family home was \$83,300 – approximately 230 percent of median income levels.¹ By 2003, the median income for a household of four in Lee County was \$51,700 and the median price of a single family home was \$156,600 – approximately 303 percent of median income levels. In 2004, the median income for a household of four in Lee County was \$54,100 and the median price of a single family home was \$192,100 – approximately 355 percent of median income levels. By the end of 2005, the median sales price had risen to \$278,200 – approximately 514 percent of median income levels. In September 2006, the median homes sales price exceeded what was affordable to a median income household – by approximately 466 percent of median income levels. See Table 1.1, *Lee County Median Household Income and Housing Prices, 1993-2006*. Also see Figure 1.1: *Comparison of Median Cost of Single Family Home to 300 Percent of Median Family Income, 1993-2006*.

<i>Table 1.1</i> LEE COUNTY MEDIAN HOUSEHOLD INCOME AND HOUSING PRICES, 1993-2006			
Year	Median Price of Existing Housing	Median Price of Housing as % of Median Income	Median Household Income
1993	\$ 83,300	231%	\$ 36,100
1994	\$ 85,000	227%	\$ 37,500
1995	\$ 86,800	231%	\$ 37,500
1996	\$ 86,600	216%	\$ 40,100
1997	\$ 94,000	229%	\$ 41,100
1998	\$ 100,700	241%	\$ 41,800
1999	\$ 105,300	230%	\$ 45,700
2000	\$ 112,300	237%	\$ 47,300
2001	\$ 129,900	265%	\$ 49,000
2002	\$ 140,400	269%	\$ 52,100
2003	\$ 156,600	303%	\$ 51,700
2004	\$ 192,100	355%	\$ 54,100
2005	\$ 278,200	514%	\$ 54,100
Sept. 2006	\$261,400	466%	\$56,000

Source: U.S. Department of Housing and Urban Development and the Florida Association of Realtors.

¹ A national benchmark for evaluating affordability is whether median household incomes in a community are at the level where the family is able to afford a median priced home; more specifically, affordability of owner-occupied housing is normally defined as 300 percent of median household income.

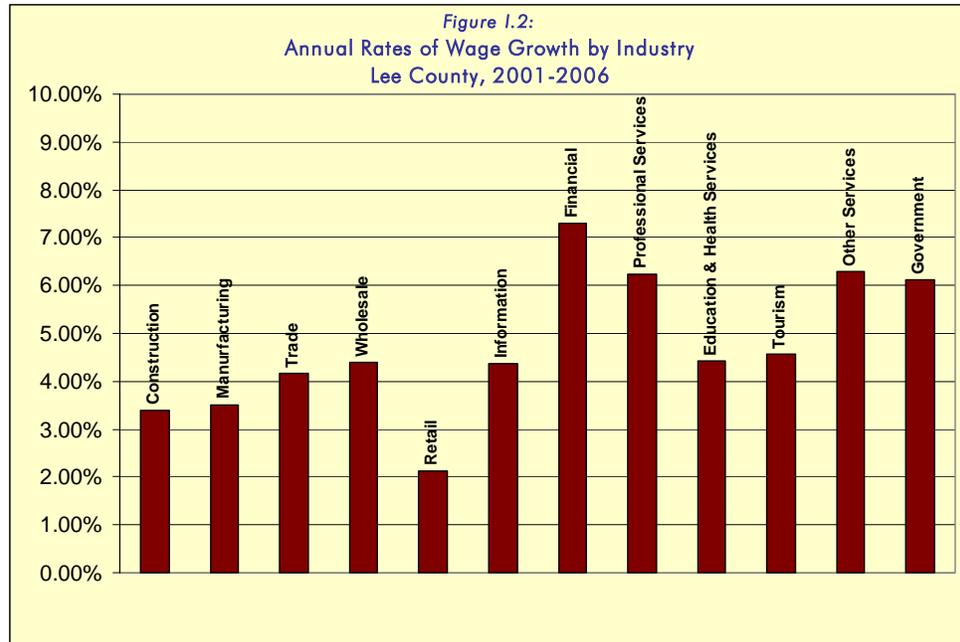


Source: U.S. Department of Housing and Urban Development and the Florida Association of Realtors.

2. Growth in Employment and Wages of the Lee County Workforce

Comparing growth of employment and wages to the increase in housing prices also reveals a significant workforce housing affordability problem in Lee County. Review of Lee County employment and wage data from 2001 and 2005 show that a significant number of new jobs created are in industry sectors that typically provide lower wages. In fact, the majority of new employment was in lower wage industries, such as construction, services, retail trade, and tourism (leisure and hospitality).

Earnings by industry data show that some of these growth industries provide lower wage employment than others. In 2006, retail trade pays \$27,771 annually on average; transportation and public utilities employment pays \$34,059 annually on average; and construction employment pays \$38,096 annually on average. This pattern of growth industries providing low average salaries to employees exacerbates the problem of workforce housing affordability, especially in a market where housing prices have been increasing at a rapid rate.



Source: *Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.*

Figure 1.2: *Annual Rates of Wage Growth by Industry, Lee County, 2001-2006*, graphically demonstrates that average earnings in Lee County grew at 4.91% from 2001 to 2006. During this period, the Consumers' Price Index (CPI) grew at an annual rate of 2.66%, indicating some improvement in real (after inflation) earnings for Lee County employees. However, the average sales price of a home in Lee County went from \$129,900 in 2001 to \$261,400 in 2006. This is an annual rate of increase of 16.9% per year. While real wages increased, the rate of increase was approximately one-third what is necessary to maintain the degree of affordability seen in 2001. This indicates that housing in Lee County is no longer available at prices that much of the workforce can reasonably afford.

3. Supply of Affordable Housing to the Workforce is Substantially Decreasing

The breadth of the housing affordability problem in the county is further demonstrated by considering the income and housing cost data with multiple listing service (MLS) data on the sales price of all residential units listed and sold by MLS in Lee County between January 1, 1998 and May 1, 2006. Analysis of this data shows there has been a sharp increase in the sales price of residential units in the county over the past eight and a half years, particularly since 2002, to the point that median income households can no longer afford many of the homes listed and sold. In addition, there has been a decline in the number of units that are available for sale at prices that are affordable to a large part of the workforce. Since 1998, the median sales price of single-family homes has increased 253 percent. In 1998, the median sales price of single-family homes was \$96,500. By 2002, the median sales price of a single-family home had increased to \$133,900. And in 2005 and 2006 it has risen to \$275,000. Similar

increases have occurred for the other types of residential units. See Table I.2: Median Sales Price of Residential Units Sold in Lee County, 1998-2006.

Table I.2 Median Sales Price Of Residential Units Sold Lee County, 1998-2005				
Year	Single-Family	Multi-Family	Manufactured	Other ²
1998	\$96,500	\$77,750	\$42,000	\$180,000
1999	\$106,000	\$87,700	\$49,000	\$97,250
2000	\$113,000	\$84,500	\$49,700	\$103,000
2001	\$123,800	\$95,000	\$52,000	\$116,430
2002	\$133,900	\$118,350	\$59,500	\$150,000
2003	\$150,000	\$133,000	\$69,000	\$164,950
2004	\$185,000	\$175,000	\$80,450	\$189,900
2005	\$275,000	\$261,725	\$105,000	\$273,250
Jan. – April 2006	\$275,000	\$295,000	\$93,000	\$318,500
Annual Growth Rate	20.55%	31.05%	13.49%	8.55%

Source: Lee County Multiple Listing Service

In fact, the MLS data show that by the end of 2005, the median sales price for over 90 percent of the MLS listed residential units sold in the county (the single-family detached and multi-family units) were above levels that are considered affordable for persons and families with median incomes. In 1998, 86 percent of the MLS residential sales in the county were below \$160,000. By 2002, this percent had decreased to 68 percent of MLS residential sales; in 2004, it had decreased to 45 percent; in 2005, it decreased to 14 percent; and through May 2006, it has decreased to 10 percent.

4. The Need for Affordable Workforce Housing

The need to provide affordable housing for the workforce in Lee County is generated by new development that demands labor (employees). Because both new residential and new non-residential development create demand for labor (employees), both are evaluated to determine the affordable housing need created by each type of development.

a) Residential Development

Residential development in Lee County has three employment needs: (1) the construction of the residence, (2) the operation and maintenance of the residence, post-construction, and (3) employment of critical workers that provide public services to these residences (i.e., Teachers, Fire and Rescue Personnel, and Law Enforcement Personnel).

² The other category includes duplexes, triplexes and similar type units.

i) **Demand for Workforce Housing Units for Construction Employees**

The construction, expansion, or renovation of buildings requires the employment of contractors and construction workers to do the work. The wages of many of these workers are within a range such that they can not afford housing in Lee County. The method used to assess the demand for affordable housing created by construction activities involves the following. First, the amount of construction authorized and built in Lee County over the past 8 years (measured in square feet) was determined from annual Lee County Property Appraiser data. Second, the number of construction workers involved in the construction of these buildings was determined using ES-202 data on local construction workers. Third, and based upon the amount of square footage built and the number of construction workers needed to construct these buildings, the actual amount of a building (in square feet) a construction employee builds in a year was determined.

Table 1.3: *Total Construction, Total Employment, and Square Feet of Construction Built per Construction Employee per Year, Lee County, 2001-2005*, summarizes this analysis. These data illustrate that, on average, one construction employee directly involved in construction builds an average of 968.77 square feet of space in a year. Put another way, it takes an estimated 1.032 employee-years to construct 1,000 square feet of floor area.

Table 1.3: SQUARE FEET OF CONSTRUCTION BUILT PER CONSTRUCTION EMPLOYEE PER YEAR, LEE COUNTY, 2001-2005			
Year	Total Construction	Total Employment	Square Feet Built per Year/Employee
2001	16,790,278	19,701	852.26
2002	23,065,455	21,092	1,093.56
2003	24,471,533	22,427	1,091.16
2004	25,254,890	26,251	962.05
2005	28,921,705	32,853	880.34
Average for '01-05	--	--	968.77

Source: Lee County Property Appraiser, May 2006 and Florida Agency for Workforce Innovation, Labor Market Statistics, <http://www.labormarketinfo.com/library/ces.htm>, downloaded May 5, 2006.

Table 1.4: *Construction Employment and Need for Housing*, sets out the number of employees needed to construct different size residential units based on the fact that one construction employee builds 968.77 square feet of space annually (See the column in Table 1.4 labeled "Employee Years to Construct Units"). Specifically, the table displays the number of employee

years it takes to construct a building of a certain size, the number of employees needed over the course of a 40-year construction career to construct a certain size unit, and the number of housing units needed for these employees. To determine the housing units needed for construction employees in Lee County (last column in Table I.4), the employee equivalent (shown in the column labeled “Employees Needed (Over Career of Employee)”) is divided by the average number of employees per dwelling unit that exist in Lee County (1.339)³.

Table I.4: CONSTRUCTION EMPLOYMENT AND NEED FOR HOUSING IN LEE COUNTY			
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees
500	0.516	0.013	0.010
1,000	1.032	0.026	0.019
2,000	2.064	0.052	0.039
3,000	3.097	0.077	0.058
4,000	4.129	0.103	0.077
5,000	5.161	0.129	0.096
6,000	6.193	0.155	0.116
7,000	7.226	0.181	0.135
8,000	8.258	0.206	0.154
9,000	9.290	0.232	0.173
10,000	10.322	0.258	0.193
12,000	12.387	0.310	0.232

ii) Demand for Workforce Housing Units for Operations and Maintenance Employees

Operations and maintenance services provided to residential dwelling units also create a demand for labor (employees). To assess the effect of this labor demand on the need for affordable housing, Lee County contracted RRC Associates, Inc., to conduct a survey of homeowners in Lee County in the spring of 2006, the results of which are summarized in a report titled *Lee County Residential Job Generation Study (May 2006)* (hereinafter referred to as “*Residential Job Study*”). One of the primary objectives of the *Residential Job Study* was to acquire data on the employment associated with the operations and maintenance of residential units in Lee County. The *Residential Job Study* asked homeowners questions about the use, both directly and indirectly, of five primary categories of employees that are hired to assist in the operation and maintenance of residential units. They include:

³ See Appendix B: *Employees Per Household, Lee County*.

- Direct hires by home owners;
- Hires by property management firms retained by home owners to operate and maintain residential properties;
- Hires by homeowners associations responsible for operating and maintaining residential properties;
- On-sight caretakers; and
- Other local service firms.

The operations and maintenance services asked about include exterior maintenance and upkeep (i.e., gardeners, mowers, and other exterior maintenance), housekeepers, kitchen help, childcare/nannies, caretakers, butlers, personal trainers, and administrative assistants for the residential unit. The survey also gathered extensive data about selected operational characteristics of residential homes, as well as the use patterns and demographics of homeowners.

The survey was mailed to a sample of 3,000 homeowners in Lee County. A total of 555 surveys were returned by the response cutoff date, for an average response rate of 18.7 percent. Of these 555 survey responses, 317 were responded to in full, whereas the remaining surveys lacked responses to some of the survey questions.

The results of this survey were analyzed using regression analysis to determine the relationships between the number of operations and maintenance employees used by households in Lee County. Generally, the analyses determined that the residential unit size was the best indicator for the number of FEEs (full-time “employee equivalents”) that provide operations and maintenance services to a residential unit. The result of the analyses in terms of the number of operations/maintenance employees needed to service homes of varying sizes is shown in Table I.5: *Operations and Maintenance Employment by Home Size, Lee County*. To determine the needed number of residential units these operations and maintenance employees require, the employee equivalent is divided by the average number of employees per dwelling unit that exist today in Lee County (1.339⁴) to estimate the fraction of a dwelling unit needed to house the employees engaged in the operation and maintenance of homes of different sizes.

⁴ See Appendix B: *Employees per Household, Lee County*.

Table 1.5:
**OPERATIONS AND MAINTENANCE EMPLOYMENT
BY HOME SIZE, LEE COUNTY**

Unit Size	Employees	Housing Units Needed for Employees
500	0.030	0.022
1,000	0.036	0.027
2,000	0.048	0.036
3,000	0.066	0.049
4,000	0.090	0.067
5,000	0.122	0.091
6,000	0.166	0.124
7,000	0.227	0.170
8,000	0.309	0.231
9,000	0.421	0.314
10,000	0.573	0.428
12,000	1.063	0.794

iii) Demand for Workforce Housing Units for Critical Employees

Public employees that provide critical services to new residential development also demand affordable workforce housing. These Critical Employees include:

- Public School Teachers⁵
- Fire & Rescue Personnel⁶
 - Firefighters
 - Emergency Medical Technicians
 - Paramedics
- Law Enforcement⁷
 - Police officers and Sheriff’s deputies
 - Corrections (jail) deputies

⁵ Public school teachers consist of all public school teachers employed by the School District of Lee County. This includes only full-time teachers, and does not include personnel serving in administrative or supervisory capacities.

⁶ Fire and Rescue personnel include the firefighters, emergency medical technicians, and paramedics employed by 17 of the 21 fire districts located in Lee County. This includes only full-time Fire and Rescue personnel, and does not include personnel serving in administrative or supervisory capacities. The 17 fire districts include: Cape Coral, Lee County, Alva, Fort Myers, Pine Island, North Fort Myers, San Carlos Park, Estero, Boca, Caloosahatchee, Fort Myers Shores, Fort Myers Beach, South Trail, Bonita Springs, Sanibel, Useppa, and Lehigh Fire Districts. Data was not available for the remaining four fire districts in Lee County.

⁷ Law Enforcement personnel consist of all police officers, sheriff’s deputies, and correctional deputies employed by the four Law Enforcement jurisdictions in Lee County. This includes only full-time Law Enforcement officers, and does not include personnel serving in administrative or supervisory capacities. The four Law Enforcement jurisdictions include: Cape Coral, Lee County, Fort Myers and Sanibel.

These critical employees are important to the overall functioning of the community. In determining the need for workforce housing for teachers, the need is attributed solely to residential development because it is residential development where school age children live. In allocating the need for workforce housing for Fire and Rescue personnel and Law Enforcement personnel created by new development, need is attributed to both residential and nonresidential development based on the amount (square feet) of development being served (residential versus nonresidential development). Using current data on critical employees and the amount of existing residential and non-residential development in Lee County, the demand for critical employees and workforce housing units needed for these critical employee households was determined. Table 1.6: *Critical Employees – All Categories*, presents the number of critical employees needed and the number of workforce housing units needed per 1,000 square feet of new residential development built in Lee County.

<i>Table 1.6:</i> RESIDENTIAL CRITICAL EMPLOYEES – ALL CATEGORIES		
Per 1,000 Square Feet of Residential Development	Employees	Workforce Units
Teachers Needed	0.0133	
Workforce Housing Unit Needs for Teacher Households		0.0099
Fire and Rescue Personnel Needed	0.0012	
Workforce Housing Unit Needs for Fire and Rescue Personnel Households		0.0009
Law Enforcement Personnel Needed	0.0025	
Workforce Housing Unit Needs for Law Enforcement Personnel Households		0.0019
TOTAL CRITICAL EMPLOYEES NEEDED	0.0170	
TOTAL WORKFORCE HOUSING UNITS NEEDED FOR CRITICAL EMPLOYEES		0.0127

iv) Summary of Needs for Workforce Housing Units from Residential Development

Table 1.7: *Workforce Housing Need Created by Residential Development*, summarizes the total workforce housing unit need created by new residential development, for construction, operation/maintenance employees, and critical employees. For example, a 2,000 square foot residential unit creates demand for 0.1003 of a workforce housing unit.

**Table 1.7:
WORKFORCE HOUSING NEED CREATED BY RESIDENTIAL DEVELOPMENT⁸**

Unit Size (FT ²)	Employees						Total Affordable Housing Units Needed (Construction and Operation and Maintenance Employees)
	Construction		Operations & Maintenance		Critical Employees		
	Employees	Affordable Housing Units Needed for Construction Employees	Employees	Affordable Housing Units Needed for Operation and Maintenance Employees	Employees	Affordable Housing Units Needed for Critical Employees	
500	0.013	0.010	0.030	0.022	0.0085	0.0063	0.0383
1,000	0.026	0.019	0.036	0.027	0.0170	0.0127	0.0587
2,000	0.052	0.039	0.048	0.036	0.0339	0.0253	0.1003
3,000	0.077	0.058	0.066	0.049	0.0509	0.0380	0.1450
4,000	0.103	0.077	0.090	0.067	0.0678	0.0507	0.1947
5,000	0.129	0.096	0.122	0.091	0.0848	0.0633	0.2503
6,000	0.155	0.116	0.166	0.124	0.1018	0.0760	0.3160
7,000	0.181	0.135	0.227	0.170	0.1187	0.0887	0.3937
8,000	0.206	0.154	0.309	0.231	0.1357	0.1013	0.4863
9,000	0.232	0.173	0.421	0.314	0.1527	0.1140	0.6010
10,000	0.258	0.193	0.573	0.428	0.1696	0.1267	0.7477
12,000	0.310	0.232	1.063	0.794	0.2035	0.1520	1.1780

v) Assistance to Address Workforce Housing Need (For Construction and Post Construction Employees)

In fully exploring the need for workforce housing created by residential development, there is one final step that needs to be taken -- determining the amount of assistance (housing subsidy) that is needed to make housing in the community affordable for the construction, operations/maintenance, and critical employee households that build and service residential units. To adequately address the different types of households that need workforce housing assistance, three Workforce Housing Categories are developed in this Study. The intent of the categories is to recognize that households of varying income levels live in units of varying size and price. For example, it is logical that a household earning \$60,000 lives in a different and more expensive house than a household earning \$30,000. These three categories address this issue. They also address the fact that not all households earning the same income have the same housing needs. For example, two households may earn the median income, but have a different number of household members and require a different number of bedrooms in a unit. These categories are used to better assess

⁸ Note that the data shown in Table 1.7: *Housing Need Created by Residential Development*, are illustrative only. The precise formulae should be used for individual dwellings.

workforce housing mitigation at a level that is reflective of the different income categories and housing needs found in the community. These categories were developed using local costs to construct workforce units in Lee County.

The household incomes earned by construction, operations and maintenance employees/households, and critical employee households, were used to determine the subsidy needed to afford a workforce housing unit within the appropriate workforce housing category, based on the size of the unit. This was determined by subtracting the amount of housing that is affordable to the household from the price of the prototypical workforce housing unit. The housing assistance that is needed is based on the size of the residential unit being built. Examples of the housing assistance that needs to be provided by new residential development (of varying sizes) to address the workforce housing need it creates is outlined below in Table I.8: *Workforce Housing Need Created by Residential Development (Units and Assistance)*, and is based on the size of the units. The precise formulae provided within this report on page 63 should be used to calculate the actual number of workforce housing units and housing assistance need created by a given development.

Table I.8:
WORKFORCE HOUSING NEED CREATED BY RESIDENTIAL DEVELOPMENT

Unit Size (FT ²)	Construction		Operations & Maintenance		Critical Employees		Total Affordable Housing Units Needed	Total Housing Assistance for Employees in Need of Affordable Housing
	Affordable Housing Units Needed for Construction Employees	Housing Assistance for Construction Employees in Need of Affordable Housing	Affordable Housing Units Needed for O&M Employees	Housing Assistance for O&M Employees in Need of Affordable Housing	Affordable Housing Units Needed for Critical Employees	Housing Assistance for Critical Employees in Need of Affordable Housing		
500	0.010	\$0	0.022	\$543	0.0063	\$55	0.0383	\$598
1,000	0.019	\$0	0.027	\$667	0.0127	\$111	0.0587	\$777
2,000	0.039	\$0	0.036	\$889	0.0253	\$221	0.1003	\$1,110
3,000	0.058	\$0	0.049	\$1,210	0.0380	\$332	0.1450	\$1,541
4,000	0.077	\$0	0.067	\$1,654	0.0507	\$442	0.1947	\$2,096
5,000	0.096	\$0	0.091	\$2,247	0.0633	\$553	0.2503	\$2,799
6,000	0.116	\$0	0.124	\$3,061	0.0760	\$663	0.3160	\$3,724
7,000	0.135	\$0	0.170	\$4,197	0.0887	\$774	0.3937	\$4,970
8,000	0.154	\$0	0.231	\$5,703	0.1013	\$884	0.4863	\$6,587
9,000	0.173	\$0	0.314	\$7,752	0.1140	\$995	0.6010	\$8,746
10,000	0.193	\$0	0.428	\$10,566	0.1267	\$1,105	0.7477	\$11,671
12,000	0.232	\$0	0.794	\$19,602	0.1520	\$1,326	1.1780	\$20,928

b) Non-Residential Development

The other basic sector in Lee County that employs workers is nonresidential development. This includes offices, retail establishments, industrial businesses, tourist/recreational services, institutional uses, and government facilities. Non-residential development places a demand on labor (the workforce) in three ways: (1) demand for workers to construct the building, (2) demand for employees that will work at the new non-residential development, and (3) demand for critical employees to provide public services to the new non-residential development. Construction employees construct the nonresidential buildings. All different types of employees work at the structure after the building is complete, depending on the type of business/land use. These businesses also require public services (law enforcement and fire protection). These activities generate employment in Lee County, and because of the wage levels and existing housing prices, a number of these activities result in a need for affordable housing.

i) Construction Employees

As discussed previously, the construction, expansion, or renovation of buildings requires the employment of contractors and construction workers to do the work. The need for affordable housing created by construction employees for non-residential development was determined to be the same as residential development.

Table I.9: *Construction Employment and Need for Housing*, sets out the number of employees needed to construct different size non-residential buildings. Specifically, the table displays the number of employee years it takes to construct a building of a certain size, the number of employees needed over the course of a 40-year construction career to construct a certain size unit, and the number of housing units needed for these employees.

<i>Table I.9:</i> CONSTRUCTION EMPLOYMENT AND NEED FOR HOUSING IN LEE COUNTY			
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees
1,000	1.032	0.026	0.019
5,000	5.161	0.129	0.096
10,000	10.322	0.258	0.193
20,000	20.645	0.516	0.385
50,000	51.612	1.290	0.964
80,000	82.579	2.064	1.542
100,000	103.224	2.581	1.927
200,000	206.447	5.161	3.855

ii) *Post-Construction Employees*

The employment impacts on non-residential development, once the building is constructed, comes from the employees that work at the businesses/land uses that use the buildings. In determining the need for workforce housing created by non-residential development, the analysis includes 4 steps:

- Step 1.** Using Department of Revenue Codes for Industries, all non-residential development was categorized into ten land use categories (retail, office, industrial, tourist/recreational, institutional, governmental, residence, critical employees, other, and no location).
- Step 2.** The employment and average household earnings in Lee County for each industry were assigned to the ten land use categories to determine employment and household earnings by land use category.
- Step 3.** The amount of building space (in square feet) provided, on average, per employee, was determined for six of the ten land use categories.⁹
- Step 4.** The demand for affordable workforce housing units created by a specific amount (1,000 square feet) of net floor area of development was determined, by land use category.

The need created for workforce housing for post-construction employees is outlined in Table I.10: *Non-Residential Post-Construction Workforce Housing Needed per 1,000 Square Feet*.

⁹ The remaining four land use categories are not included for the following reasons. Residential land uses and critical employees are evaluated separately in terms of the demand for affordable housing they create. The “Other uses” land use category includes land uses that are identified as unknown. Employment identified as having “No Location” cannot be attributed to a specific land use category (such as construction or agricultural employment).

Table I.10: NON-RESIDENTIAL POST-CONSTRUCTION WORKFORCE HOUSING NEED PER 1,000 SQUARE FEET			
Land Use	Household Earnings	Employees / 1,000 Square Ft	Housing Units Needed for Employees/ 1,000 Square Ft
Governmental	\$55,581	0.662	0.494
Industrial	\$51,778	0.945	0.706
Institutional	\$55,997	0.836	0.624
Office	\$55,582	1.147	0.856
Retail	\$42,095	1.735	1.296
Tourist	\$37,243	1.280	0.956

iii) Critical Employees

Public employees that provide critical services to new residential development also demand affordable workforce housing. These Critical Employees include:

- Fire & Rescue Personnel
 - Firefighters
 - Emergency Medical Technicians
 - Paramedics
- Law Enforcement
 - Police officers and Sheriff's deputies
 - Corrections (jail) deputies

These critical employees are important to the overall functioning of the community. In allocating the need for workforce housing for Fire and Rescue personnel and Law Enforcement personnel created by new development, need is attributed to both residential and nonresidential development based on the amount (square feet) of development being served (residential versus nonresidential development). Using current data on critical employees and the amount of existing residential and non-residential development in Lee County, the demand for critical employees and workforce housing units needed for these critical employee households was determined. Table I.11 presents the number of critical employees needed and the number of workforce housing units needed per 1,000 square feet of new non-residential development built in Lee County.

Table I.11: NON-RESIDENTIAL CRITICAL EMPLOYEES – ALL CATEGORIES		
Per 1,000 Square Feet of Non-Residential Development	Employees	Units
Fire and Rescue Personnel Needed	0.0012	
Workforce Housing Unit Needs Needed for Fire and Rescue Personnel Households		0.0009
Law Enforcement Personnel Needed	0.0003	
Workforce Housing Unit Needs Needed for Law Enforcement Personnel Households		0.0002
TOTAL CRITICAL EMPLOYEES NEEDED	0.0015	
TOTAL WORKFORCE HOUSING UNITS NEEDED FOR CRITICAL EMPLOYEES		0.0011

iv) Assistance to Address Workforce Housing Needs

As mentioned previously, to fully explore the need for workforce housing created by non-residential development, there is one final step -- determining the amount of assistance (housing subsidy) that is needed to make housing in the community affordable for the workforce employees that build and service non-residential development. As is discussed earlier, to adequately address the different types of households that need workforce housing assistance, three Workforce Housing Categories are developed in this Study. These categories are used to better assess workforce housing mitigation at a level that is reflective of the different income categories and household needs found in the community.

The household incomes earned by construction households, post-construction households, and critical employee households, were used to determine the subsidy needed to afford a workforce housing unit within the appropriate workforce housing category. This was determined by subtracting the amount of housing that is affordable to the household from the price of the appropriate prototypical workforce housing unit. The housing assistance that is needed is based on the size and type of the non-residential structure being built. Examples of the housing assistance and workforce housing units that need to be provided by new non-residential development (for varying land uses per 1,000 square feet) to address the workforce housing need it creates is outlined below in Table I.12: *Need for Workforce Housing Created by Non-Residential Development*. The precise formulae provided within this report on page 86 should be used to calculate the actual number of workforce housing units and housing assistance need created by a given development.

**Table I.12:
WORKFORCE HOUSING NEED CREATED BY NON-RESIDENTIAL DEVELOPMENT**

Land Use	Construction			Post-Construction			Critical Workers			Total Workforce Housing Units Needed	Total Workforce Housing Assistance Needed
	Employees	Workforce Housing Units Needed	Workforce Housing Assistance Needed	Employees	Workforce Housing Units Needed	Workforce Housing Assistance Needed	Employees	Workforce Housing Units Needed	Workforce Housing Assistance Needed		
Per 1,000 Square Feet											
Governmental	0.026	0.019	\$0	0.662	0.494	\$6,261	0.0015	0.0011	\$12.98	0.5141	\$6,274
Industrial	0.026	0.019	\$0	0.945	0.706	\$18,119	0.0015	0.0011	\$12.98	0.7261	\$18,132
Institutional	0.026	0.019	\$0	0.836	0.624	\$7,023	0.0015	0.0011	\$12.98	0.6441	\$7,036
Office	0.026	0.019	\$0	1.147	0.856	\$10,846	0.0015	0.0011	\$12.98	0.8761	\$10,859
Retail	0.026	0.019	\$0	1.735	1.296	\$28,167	0.0015	0.0011	\$12.98	1.3161	\$28,180
Tourist	0.026	0.019	\$0	1.280	0.956	\$36,620	0.0015	0.0011	\$12.98	0.9761	\$36,633

c) Summary of Workforce Housing Needs (Residential and Non-Residential)

A summary of the workforce housing needs generated by both residential and non-residential development is outlined below.

Table I.13: SUMMARY OF WORKFORCE HOUSING NEED CREATED BY RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT		
Land Use	Workforce Housing Units Needed	Workforce Housing Assistance Needed
Residential Development (Per Square Feet)		
500	0.0383	\$598
1,000	0.0587	\$777
2,000	0.1003	\$1,110
3,000	0.1450	\$1,541
4,000	0.1947	\$2,096
5,000	0.2503	\$2,799
6,000	0.3160	\$3,724
7,000	0.3937	\$4,970
8,000	0.4863	\$6,587
9,000	0.6010	\$8,746
10,000	0.7477	\$11,671
12,000	1.1780	\$20,928
Non-Residential Development (Per 1,000 Square Feet)		
Governmental	0.5141	\$6,274
Industrial	0.7261	\$18,132
Institutional	0.6441	\$7,036
Office	0.8761	\$10,859
Retail	1.3161	\$28,180
Tourist	0.9761	\$36,633

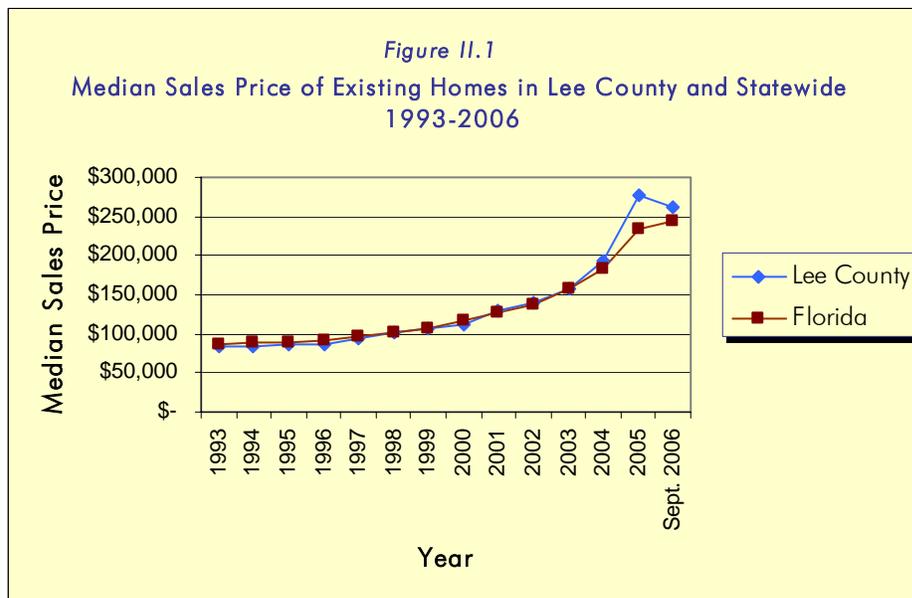
d) Policy Options/Mitigation Options

A number of policy options are available to Lee County to address this affordable housing need created by residential and non-residential development, once the methodology for determining need is developed and applied. They involve local and state funding, incentive zoning practices, as well as inclusionary or mandatory affordable housing requirements in the county’s land development code. These policy options will be discussed in the Policy Options Memorandum that will follow this Support Study. Beyond the broad policy options to address affordable housing need, it should be emphasized in this Support Study that if affordable housing need is going to be effectively addressed as development occurs, the policy options should address need in one of four ways. These mitigation options include:

- Payment of funds (or a housing assistance fee) to make up the difference between the cost of housing in the county for the employee(s) in need of affordable housing and what the employee(s) can reasonably afford;
- Construction of affordable housing units for the employee in need;
- Conversion of existing market units to affordable units for the employee in need; or
- Providing land for affordable housing that is of equal value to the funds (housing assistance fee) needed.

II. PROBLEM DESCRIPTION

Like many communities in south Florida, the price of housing in Lee County over the past six years increased dramatically, while incomes and wages remained relatively static. Figure II.1: *Median Sales Price of Existing Homes in Lee County and Statewide, 1993-2006*, illustrates the trend of median housing sales prices in Lee County in comparison to all of Florida between 1993 and 2006. In 2000, the median sales price of a home in the county was \$112,300 and by 2005 the median sales price increased by \$165,900 to \$278,200. Median housing prices in Lee County have declined slightly between 2005 and 2006. However, Lee County housing prices have consistently exceeded the state median price since 2003. This is a trend that is expected to continue.



Source: Florida Association of Realtors.

A. MEDIAN HOUSING PRICES AND MEDIAN HOUSEHOLD INCOMES

Normally, housing affordability is evaluated by comparing the price of housing for a local real estate market to prevailing wage and salary incomes. A national benchmark for evaluating affordability is whether median household incomes in a community are at the level where the household could afford a median priced home. Typically, affordability of owner-occupied housing is defined as 300 percent of median household income.

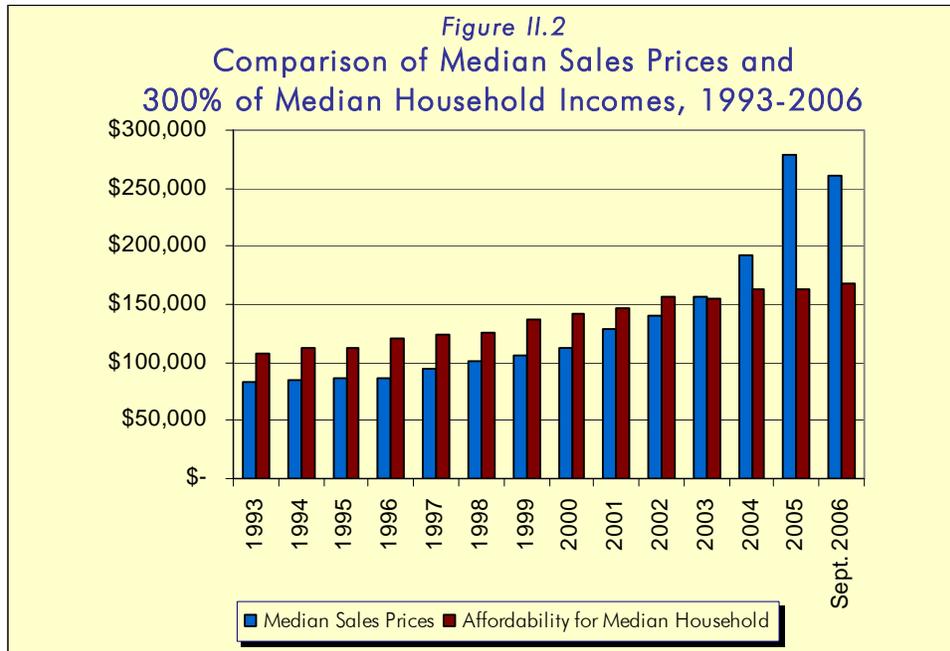
As Table II.1: *Lee County Median Household Income and Housing Prices, 1993-2006*, demonstrates, over the past 13 years in Lee County the gap between median household incomes and median housing costs increased to the point that over the past three years median priced housing is no longer

affordable to households earning the area median income.¹⁰ In 1993, the median income for a household of four in Lee County was \$36,100, and the median price of a single family home was \$83,300 – approximately 230 percent of median income levels. In 2000, the median income for a household of four in Lee County was \$47,300 and the median price of a single family home was \$112,300 – approximately 237 percent of median income levels. By 2003, the median income for a household of four in Lee County was \$51,700 and the median price of a single family home was \$156,600 – approximately 303 percent of median income levels. In 2005, the median income for a household of four in Lee County was \$54,100 and the median price of a single family home was \$278,200 – approximately 514 percent of median income levels. Even though median sales prices moderately decreased in 2006 to \$261,400, the median price of housing in September 2006 still exceeds the price that is affordable to median income households. (The median income for a household of four in 2006 is \$56,000. This is 466% of the median price of a single-family home.) Over this period, housing prices continue to increase, and even wage earners with higher incomes were priced out of the market. See Figure II.2: *Comparison of Median Sales Prices and 300% of Median Household Incomes, 1993-2006*.

Table II.1 LEE COUNTY MEDIAN HOUSEHOLD INCOME AND HOUSING PRICES, 1993-2006			
Year	Median Price of Existing Housing	Median Price of Housing as % of Median Income	Median Household Income
1993	\$ 83,300	231%	\$ 36,100
1994	\$ 85,000	227%	\$ 37,500
1995	\$ 86,800	231%	\$ 37,500
1996	\$ 86,600	216%	\$ 40,100
1997	\$ 94,000	229%	\$ 41,100
1998	\$ 100,700	241%	\$ 41,800
1999	\$ 105,300	230%	\$ 45,700
2000	\$ 112,300	237%	\$ 47,300
2001	\$ 129,900	265%	\$ 49,000
2002	\$ 140,400	269%	\$ 52,100
2003	\$ 156,600	303%	\$ 51,700
2004	\$ 192,100	355%	\$ 54,100
2005	\$ 278,200	514%	\$ 54,100
Sept. 2006	\$261,400	466%	\$56,000

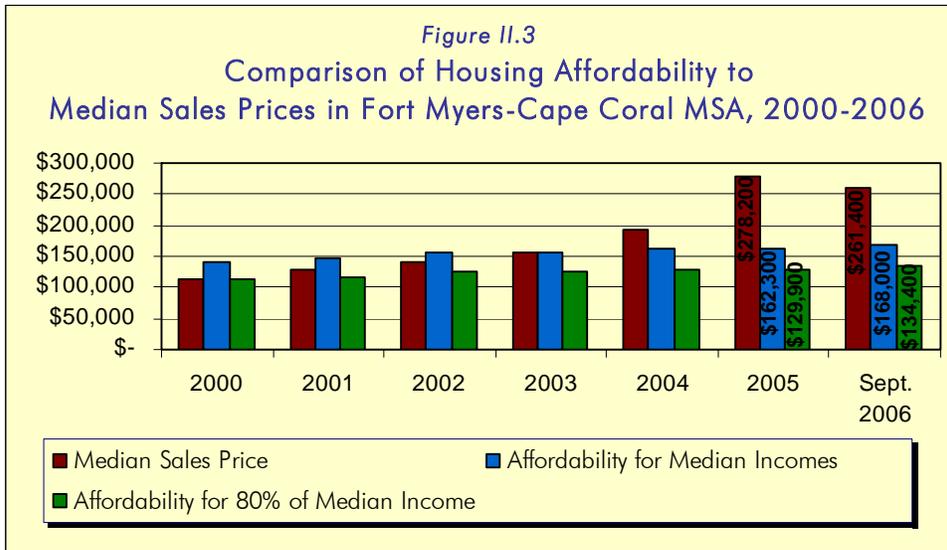
Source: U.S. Department of Housing and Urban Development and the Florida Association of Realtors.

¹⁰ A national benchmark for evaluating affordability is whether median household incomes in a community are at the level where the family is able to afford a median priced home; more specifically, affordability of owner-occupied housing is normally defined as 300 percent of median household income.



Source: U.S. Department of Housing and Urban Development and the Florida Association of Realtors.

Figure II.3: Comparison of Housing Affordability to Median Sales Prices in Fort Myers-Cape Coral MSA, 2000-2006, illustrates the comparison of median sales prices in Lee County with housing prices that are affordable to median income households and households with incomes at 80 percent of median household incomes. Beginning in 2003, the median sales price exceeded the price that was affordable to the median income household. In 2004, the sales price exceeded the housing price affordable to a median household income by almost \$30,000 and by more than \$62,000 for a household at 80 percent of area median household income levels. This trend continued in 2005 and 2006. In September 2006, the sales prices exceeded affordability for median household incomes by \$93,400 and exceeded affordability for households earning 80 percent of area median income by \$127,000.



Source: U.S. Department of Housing and Urban Development and the Florida Association of Realtors.

B. INCREASES IN LEE COUNTY HOUSING PRICES ARE FAR OUTPACING INCREASES IN WAGES/INCOME.

Review of Lee County employment and wage data over the past 15 years indicate housing in Lee County is no longer available at prices that much of the work force can reasonably afford. The data show that even with employment and wage growth, the Lee County workforce is finding it increasingly difficult to find housing in the marketplace they can afford. The data also indicate that a portion of the employment growth is occurring in sectors of the economy that increase the housing affordability problem because of the low wages earned by the new employees.¹¹

1. Employment and Wages

Table II.2: *Non-Agricultural Employment Growth by Industry, Lee County, 2001-2005*, presents Lee County employment by industry for 2001 and 2005. What this data demonstrates is that during this period, Lee County non-agricultural employment grew -- at an annual rate of approximately 5.58 percent, creating 41,716 new jobs. The data also shows several other phenomena. Two-thirds of all new jobs were in services. Tourism was the

¹¹ The data on Lee County employment growth and earnings over time included in this section provide data on annual employment and earnings, where it is available. Starting in 2001, the Federal Government changed its methods of reporting employment and earnings data to modernize the employment classifications and groupings of employment. This makes time series analysis and comparisons of industry growth and wage growth difficult; however, this data can provide a general understanding of Lee County's economy over time. Note that because of this change, the summing jobs for each industry does not necessarily result in the total for all Lee County non-agricultural employment.

greatest single source of new jobs. Business & professional services and retail trade are the next biggest source of new jobs. While any new jobs are welcomed, the nature of Lee County's employment growth presents a problem in that a large portion of new jobs are in low wage activities – tourism and retail trade. This further exacerbates the workforce housing problem.

<i>Table II.2:</i> NON-AGRICULTURAL EMPLOYMENT GROWTH BY INDUSTRY LEE COUNTY, 2001-2005					
	Employment 2001	Employment 2005	Growth Rate	New Jobs	% of Total New Jobs
Total, All Industries	171,929	213,645	5.58%	41,716	100.0%
Goods-Producing	27,801	41,467	10.51%	13,666	32.8%
Agriculture, Forestry, Fishing and Hunting	1,556	1,609	0.84%	53	0.1%
Construction	19,701	32,853	13.64%	13,152	31.5%
Manufacturing	6,328	6,780	1.74%	452	1.1%
Service-Providing	144,128	172,178	4.55%	28,050	67.2%
Trade, Transport & Utilities	39,990	46,468	3.82%	6,478	15.5%
Wholesale Trade	5,197	6,309	4.97%	1,112	2.7%
Retail Trade	29,973	34,342	3.46%	4,369	10.5%
Information	4,812	4,099	-3.93%	-713	-1.7%
Financial Activities	10,098	13,137	6.80%	3,039	7.3%
Finance & Insurance	5,210	6,646	6.27%	1,436	3.4%
Real Estate	4,888	6,491	7.35%	1,603	3.8%
Prof & Business Services	20,422	25,961	6.18%	5,539	13.3%
Ed. & Health Services	33,379	38,199	3.43%	4,820	11.6%
Educational Services	10,268	12,638	5.33%	2,370	5.7%
Health Care etc	23,112	25,562	2.55%	2,450	5.9%
Leisure and Hospitality	20,530	26,463	6.55%	5,933	14.2%
Other Services	5,626	6,910	5.27%	1,284	3.1%
Public Administration	9,122	10,674	4.01%	1,552	3.7%

Source: Florida Agency for Workforce Innovation, Employment Estimates, 2001-2005.

Table II.3: *Annual Wage Earnings by Industry, 2006*, shows that some of the growth industries in Lee County provide lower wage employment than others.¹² In 2005, retail trade pays \$27,771 (annually) on average;

¹² In Table II.3: *Employment and Earnings by Industry, Lee County, 2006*, earnings for year 2006 are projected by applying the 2004 to 2005 change in earnings to the 2005 earnings. The exception was where 2005 earnings were above 2004. In those cases 2005 earnings were maintained for 2006. Lee County workforce household earnings were projected by adding the expected income of the other employed member of the household to that of the primary individual. The other income is calculated on the basis of average earnings in Lee County.

transportation and manufacturing employment pays \$38,830 (annually) on average; and construction employment pays \$38,096 (annually) on average. This pattern of growth industries providing low average salaries to employees further exacerbates the problem of housing affordability, especially in a market where housing prices continue to increase at a rapid rate.

**Table II.3:
EMPLOYMENT AND EARNINGS BY INDUSTRY
LEE COUNTY, 2006**

Industry Title	NAICS Code	Average Employment	Annual Wage		Household Earnings
			2005	2006	
Total, All Industries	10	213,645	\$35,645	\$37,404	\$50,081
Goods-Producing	101	41,467	\$37,275	\$38,843	\$51,521
Agriculture, Fishing & Hunting	11	1,609	\$25,327	\$27,115	\$39,792
Construction	1012	32,853	\$37,728	\$38,096	\$50,773
Manufacturing	1013	6,780	\$37,414	\$38,830	\$51,507
Service-Providing	102	172,178	\$35,252	\$37,030	\$49,708
Trade, Transportation, and Utilities	1021	46,468	\$33,232	\$34,059	\$46,736
Wholesale Trade	42	6,309	\$47,240	\$48,622	\$61,300
Retail Trade	44-45	34,342	\$27,771	\$27,771	\$40,448
Transportation and Warehousing	48-49	4,993	\$48,653	\$58,418	\$71,096
Information	1022	4,099	\$45,242	\$45,242	\$57,919
Financial Activities	1023	13,137	\$46,224	\$50,793	\$63,470
Finance and Insurance	52	6,646	\$53,719	\$56,788	\$69,465
Real Estate and Rental and Leasing	53	6,491	\$38,549	\$45,776	\$58,453
Professional and Business Services	1024	25,961	\$40,029	\$43,300	\$55,977
Education and Health Services	1025	38,199	\$40,132	\$41,863	\$54,540
Educational Services	61	12,638	\$36,477	\$37,990	\$50,668
Health Care and Social Assistance	62	25,562	\$41,939	\$43,789	\$56,466
Leisure and Hospitality	1026	26,463	\$18,488	\$19,278	\$31,956
Accommodation and Food Services	72	20,606	\$16,683	\$17,781	\$30,458
Other Services	1027	6,910	\$29,345	\$30,653	\$43,330
Public Administration	1028	10,674	\$43,069	\$45,502	\$58,179

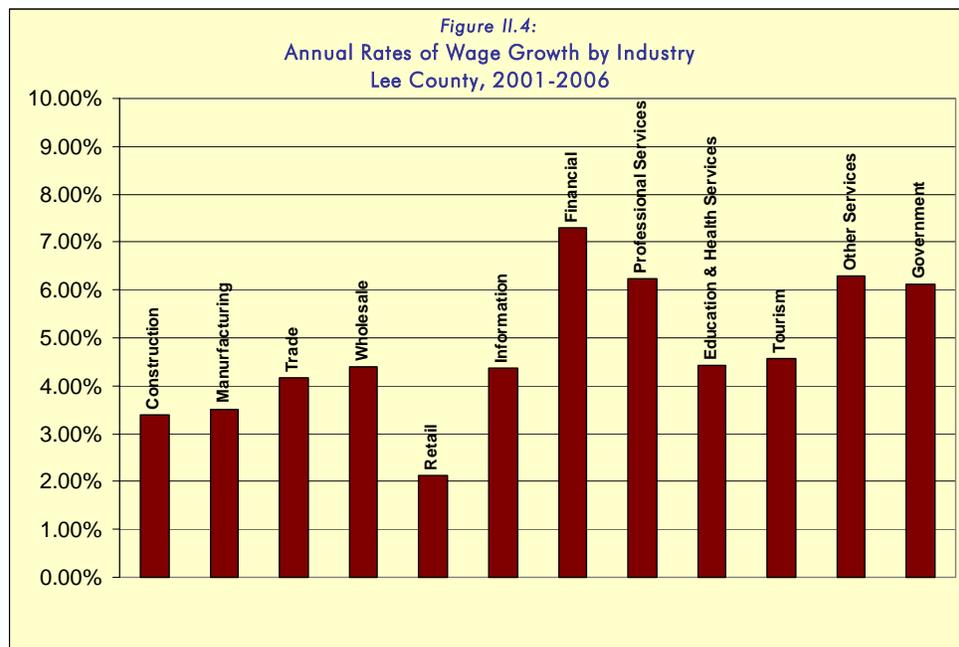
Source: Florida Labor Market Statistics, September 2006

This pattern is emphasized in Table II.4: *Annual Rates of Wage Growth by Industry, Lee County, 2001-2006* and Figure II.4: *Annual Rates of Wage Growth by Industry, Lee County, 2001-2006*. The table and figure illustrate the growth in employee wages between 2001 and 2006.

Table II.4:
ANNUAL RATES OF WAGE GROWTH BY INDUSTRY,
LEE COUNTY, 2001-2006

Industry	Annual Growth
All Wages	4.91%
Construction	3.39%
Manufacturing	3.50%
Trade	4.17%
Wholesale	4.41%
Retail	2.13%
Information	4.37%
Financial	7.31%
Professional Services	6.25%
Education & Health Services	4.42%
Tourism	4.56%
Other Services	6.30%
Government	6.11%

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.



Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.

Figure II.4 also reveals there are wide variations in levels of earnings. Average earnings grew at 4.91% from 2001 to 2006. During this period the Consumers' Price Index (CPI) grew at an annual rate of 2.66%, indicating some improvement in real (after inflation) earnings for Lee County employees. However, the average sales price of a home in Lee County went from \$129,900 in 2001 to \$261,400 in 2006. This is an annual rate of increase of 16.9% per year. While real wages increased, the rate of increase was approximately one-third what is necessary to maintain the degree of affordability observed in 2001.

C. THE SUPPLY OF HOUSING AFFORDABLE TO THE WORKFORCE IS SUBSTANTIALLY DECREASING.

The breadth of the housing affordability problem in Lee County in 2006 is further demonstrated by considering the income and housing cost data with multiple listing service (MLS) data on the sales price of all residential units listed and sold by MLS in Lee County between January 1, 1998 and May 1, 2006. The residential sales are categorized into four types of residential units: single-family detached; multi-family; manufactured units (which include mobile homes); and other, which includes duplex, triplex and similar type units. There have been a total of 63,815 residential sales listed by MLS in the county over this eight and a half year period.¹³ Of these units sold, the large majority are single-family detached units (68.17%) and multi-family units (23%). The balance is manufactured and other units. (See Table II.5: *Types of Residential Units Sold Through MLS, 1998-2006.*)

Table II.5 TYPES OF RESIDENTIAL UNITS SOLD THROUGH MLS LEE COUNTY, 1998-2005					
Year	Single-Family Detached	Multi-Family	Manufactured	Other	Total
1998	783	228	68	47	1,126
1999	2,797	894	262	163	4,116
2000	3,016	1,037	281	185	4,519
2001	3,580	926	356	188	5,050
2002	4,515	1,139	410	235	6,299
2003	6,882	1,732	419	348	9,381
2004	7,980	2,454	411	406	11,251
2005	10,982	5,188	555	967	17,692
January-May 2006	2,966	998	179	238	4,381
TOTAL	43,051	14,596	2,941	2,777	63,815
Percent of Total	68.17%	23%	4.61%	4.35%	100%

Source: Lee County Multiple Listing Service

Data in Table II.6: *Median Sales Price of Residential Units Sold, Lee County, 1998-2006*, demonstrates that there has been a sharp increase in the sales price of residential units in the county over the past eight and a half years, particularly since 2002. In addition, there has been a decline in the number of units that are available for sale at prices that are affordable to a large part of the workforce. Since 1998, the median sales price of single-family homes has increased 285 percent. In 1998, the median sales price of a single-family home in the county was \$96,500. By 2002, the median sales price of a single-family home increased to \$133,900. By 2004 it was \$185,000, and in 2005 and the first quarter of 2006 it was \$275,000.

Similar increases occurred for the other types of residential units. The median sales price for multi-family units increased 379 percent since 1998. In 1998, the median sales price for a multi-family unit in the county was \$77,750, in 2005, it was \$261,725, and in the first quarter of 2006 it was \$295,000.

¹³ See Appendix A: MLS Residential Sales, Lee County, 1998-2006.

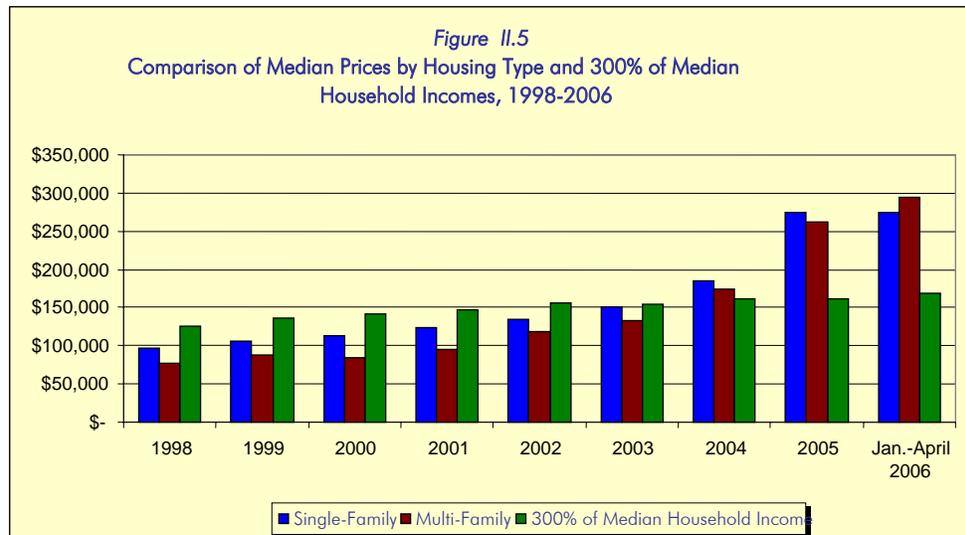
The median sales price for manufactured units increased 221 percent since 1998. In 1998, the median sales price for a manufactured unit in the county was \$42,000, in 2005 it was \$105,000, and in the first quarter of 2006 it was \$93,000.

Table II.6
**MEDIAN SALES PRICE OF RESIDENTIAL UNITS SOLD
LEE COUNTY, 1998-2005**

Year	Single-Family	Multi-Family	Manufactured	Other
1998	\$96,500	\$77,750	\$42,000	\$180,000
1999	\$106,000	\$87,700	\$49,000	\$97,250
2000	\$113,000	\$84,500	\$49,700	\$103,000
2001	\$123,800	\$95,000	\$52,000	\$116,430
2002	\$133,900	\$118,350	\$59,500	\$150,000
2003	\$150,000	\$133,000	\$69,000	\$164,950
2004	\$185,000	\$175,000	\$80,450	\$189,900
2005	\$275,000	\$261,725	\$105,000	\$273,250
Jan.-April 2006	\$275,000	\$295,000	\$93,000	\$318,500
Annual Growth Rate	20.55%	31.05%	13.49%	8.55%

Source: Lee County Multiple Listing Service

What this means is that by 2005, the median sales price for over 90 percent of the MLS residential units sold in the county (the single-family detached and multi-family units) were above levels that are considered affordable for persons and families with median incomes. (For a breakdown by type of housing, see Figure II.5: *Comparison of Median Prices by Housing Type and 300% of Median Household Incomes, 1998-2005.*)



Source: Lee County Multiple Listing Service and the U.S. Department of Housing and Urban Development

In 2006, the disparity continued. The median sales price for a single-family dwelling unit (approximately 62% of sales) is \$275,000, and the median sales price for a multi-family unit (approximately 29% of sales) is \$295,000. In 2006, the house price a household of four with a median income in Lee County considers affordable is \$168,000.

In addition, the MLS data shows the availability of housing within the price ranges that local workers and their families can afford are declining, especially since 2002. Table II.7: *Lee County Residential Sales by Sales Price, 1998-2006*, breaks down MLS residential sales during this period between single-family detached, multi-family, manufactured, and other units. The price ranges displayed are chosen based on the housing price that is affordable to a median income household in 2005 – approximately \$160,000. In other words, this data is arranged to show how median income families fare currently and historically in Lee County’s housing market.

Table II.7
LEE COUNTY RESIDENTIAL SALES BY SALES PRICE
1998-2006

Year	Single-Family Detached	Multi-Family	Manu-factured	Other	Total Sales By Price Category	Total Sales	Percent of Total Sales
< \$160,000							
1998	658	199	68	43	968	1,126	86%
1999	2,261	737	261	145	3,404	4,116	83%
2000	2,316	877	281	151	3,625	4,519	80%
2001	2,581	747	352	151	3,831	5,050	76%
2002	2,941	810	399	152	4,302	6,299	68%
2003	4,031	1,162	391	191	5,775	9,381	62%
2004	3,440	1,169	332	151	5,092	11,251	45%
2005	1,013	917	404	146	2,480	17,692	14%
Jan.-May 2006	144	104	144	27	419	4381	10%
\$160,001 TO \$300,000							
1998	102	24	0	3	129	1,126	11%
1999	421	133	1	13	568	4,116	14%
2000	536	123	0	21	680	4,519	15%
2001	736	119	4	28	887	5,050	18%
2002	1,074	205	9	72	1,360	6,299	22%
2003	1,881	408	23	127	2,439	9,381	26%
2004	2,726	820	74	205	3,825	11,251	34%
2005	5,292	2,312	127	450	8,181	17,692	46%
Jan.-May 2006	1,657	414	29	78	2,178	4,381	50%
\$300,001 TO \$500,000							
1998	13	4	0	0	17	1,126	2%
1999	89	18	0	3	110	4,116	3%
2000	111	33	0	10	154	4,519	3%
2001	192	48	0	5	245	5,050	5%
2002	350	87	1	5	443	6,299	7%
2003	686	93	5	22	806	9,381	9%
2004	1,242	278	5	26	1,551	11,251	14%
2005	2,761	1,309	24	268	4,362	17,692	25%
Jan.-May 2006	707	298	5	84	1,094	4,381	25%
> \$500,000							
1998	10	1	0	1	12	1,126	1%
1999	26	6	0	2	34	4,116	1%
2000	53	4	0	3	60	4,519	1%

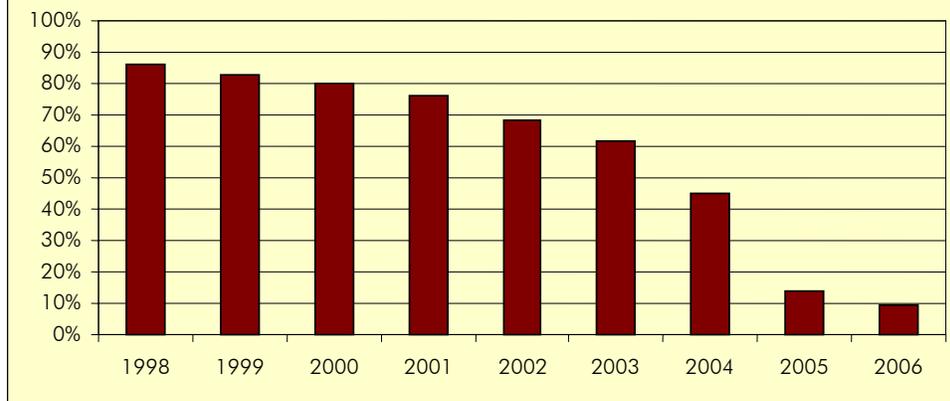
Table II.7
LEE COUNTY RESIDENTIAL SALES BY SALES PRICE
1998-2006

Year	Single-Family Detached	Multi-Family	Manu-factured	Other	Total Sales By Price Category	Total Sales	Percent of Total Sales
2001	71	12	0	4	87	5,050	2%
2002	150	37	1	6	194	6,229	3%
2003	284	69	0	8	361	9,381	4%
2004	572	187	0	24	783	11,251	7%
2005	1,916	650	0	103	2,669	17,692	15%
Jan.-May 2006	458	182	1	49	690	4,381	16%

Source: Lee County Multiple Listing Service

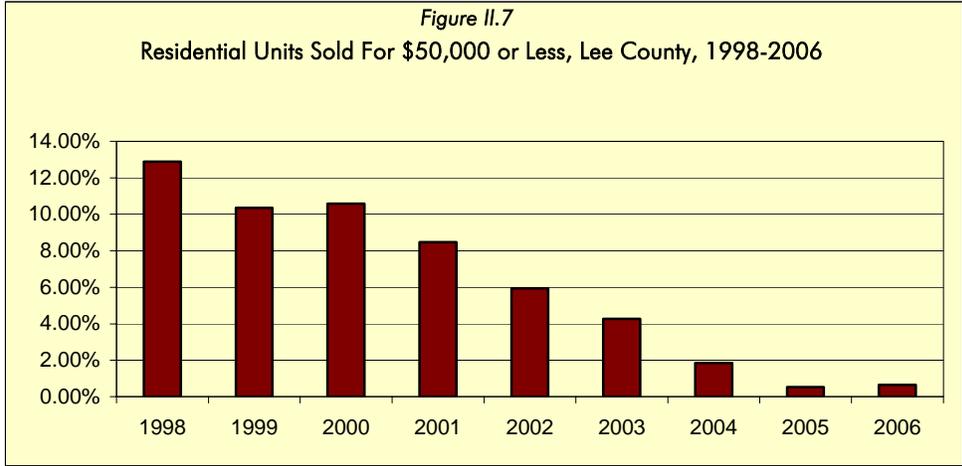
Specifically, what this data shows is the decrease in the amount of affordable housing units available to persons of median income between 1998 and 2006. In 1998, 86 percent of the MLS residential sales in the county were below \$160,000. By 2002, this percent decreased to 68 percent of MLS residential sales; in 2004, it decreased to 45 percent; in 2005, it decreased to 14 percent; and thus far in 2006, it decreased to 10 percent. (See Figure II.6: Residential Units Sold for \$160,000 or Less, Lee County, 1998-2006.)

Figure II.6
Residential Units Sold For \$160,000 or Less, Lee County, 1998-2006



Source: Lee County Multiple Listing Service

The same is true for housing at the most modest end of the economic ladder. In 1998, about 13 percent of all residential units sold in the county sold for \$50,000 or less. In 2000, just over 11 percent of the units sold in the county sold for \$50,000, or less. By 2003, this figure decreased to just over 4 percent. In 2005 and 2006, less than 1 percent of the residential units sold for \$50,000, or less. (See Figure II.7: Residential Units Sold for \$50,000 or Less, Lee County, 1998-2006.)



Source: Lee County Multiple Listing Service

Since 1998, housing prices in Lee County have risen dramatically. The result is an increase in the gap between the income of workers in the county and housing prices – to the point that approximately 10 percent of homes now being sold in the county are affordable to those with median incomes or less.

III. THE NEED FOR AFFORDABLE WORKFORCE HOUSING CREATED BY NEW DEVELOPMENT

The need to provide affordable housing for the workforce in Lee County comes from all new development that demands labor (employees). Both residential and non-residential development demand labor (employees).

A. BACKGROUND

As employment increases in a community, the demand for local housing also increases. Because some of the larger employers in Lee County, such as construction and retail service businesses typically hire more lower wage employees than other industries, a significant percentage of new employees in Lee County earn modest wages and cannot afford a majority of the houses for sale in the local real estate market. Of course, the situation worsened in recent years throughout the county as housing prices escalated beyond the reach of school teachers, firefighters, policemen, and other service workers.

For the purposes of evaluating where affordable housing demands originate, it is tempting to think that a community may be divided neatly into an economic sector and a residential sector. The economic sector provides the employment and incomes for the residents and the residential sector provides for the needs of the local employees and their families. In a place like Lee County, however, this distinction between an economic sector and residential sector is misleading. Instead, it is more useful to conceive of an economy that is divided into two general sectors: the basic sector and the local sector.

The basic sector is that part of the economy that brings income into the county and distributes that income as wages and salaries within the region – such as construction and retail services in Lee County. The local sector is that part of the economy that produces goods and services for sale to residents of the region. The basic sector is active while the local sector is reactive. The essential reason for using this model is that the economic health of the region is dependent upon the economic success of the basic sector.

Both residential and non-residential development in Lee County is very much a part of the basic sector because of the strong tourist/second home component of Lee County's economy, which helps fuel the construction and retail services businesses. The incomes earned from this demand leads to spending in the local sector. As such, residential development shares many of the characteristics of other and more typical components of the economic base, including its demand for labor.

Residential and non-residential development in Lee County places a demand on labor (the workforce) in four ways:

- The first is the construction of the building (i.e., construction employees for both residential and non-residential development);

- The second is the operation and maintenance of the building (i.e., employees for residential development); and
- The third is the use of the structure as designed by the builders (i.e., employees for non-residential development).
- The fourth is the critical workers (Public School Teachers, Fire and Rescue Personnel, and Law Enforcement Personnel) that support the development (both residential and non-residential to varying degrees).

All four activities generate employment in Lee County, and because of the wage levels and existing housing prices, these activities consequently result in a need for affordable housing. The demand for labor (employees) that both residential and non-residential development create, and the demand these employees place on the need for affordable housing is outlined below.

B. RESIDENTIAL DEVELOPMENT

1. Background

As is discussed above, residential development in Lee County has three employment needs:

- The first is for the construction of the residence;
- The second is for the operation and maintenance of that residence, post-construction; and
- The third is for the critical employees that provide critical public services to the unit (Public School Teachers, Fire and Rescue Personnel, and Law Enforcement Personnel).

As discussed below, construction, post-construction and public service activities generate employment in Lee County, and many of these workers typically earn wages and salaries that put them in a position of economic stress in terms of their ability to purchase or rent housing.

2. Demand for Workforce Housing Units

a) Construction Impacts

The construction, expansion, or renovation of buildings requires the employment of contractors and construction workers to do the work. The wages of many of these workers are within a range such that they can not afford housing in Lee County. The method used to assess the demand for affordable housing created by construction activities involves the following. First, the amount of construction authorized and built in Lee County over the past 5 years (measured in square feet) was determined from annual Lee

County Property Appraiser data. Second, the number of construction workers involved in the construction of these buildings was determined using ES-202¹⁴ data on local construction workers. Third, and based upon the amount of square footage built and the number of construction workers needed to construct these buildings, the actual amount of a building (in square feet) a construction employee builds in a year was determined.¹⁵ Table III.1: *Residential and Non-Residential Construction (square feet), Lee County, 2000 -2005* and Table III.2: *Total Construction, Total Employment, and Square Feet of Construction Built per Employee per Year, Lee County, 2000-2005*, summarize this analysis. These data illustrate that, on average, one construction employee directly involved in construction builds an average of 968.77 square feet of space in a year. Put another way, it takes an estimated 1.032 employee-years to construct 1,000 square feet of floor area.¹⁶ Larger construction projects require more construction time (either more people working over the same period of time, or the same number of people working for a longer time) to complete.

¹⁴ ES-202 data (also known as the “Covered Employment and Wages Program”) is available through the U.S. Bureau of Labor Statistics. ES-202 data provides employment and wage data, by industry, at the national, state, and county levels.

¹⁵ For purposes of this calculation, the analysis only includes employees that actually work in construction (rather than in related trades, such as cabinetry or electricians), since the related trades often work on repair jobs unrelated to the construction of new space. Those types of repairs are more accurately treated as the costs of operating and maintaining units once they have been built, and are addressed in section III.B.2., *Operations and Maintenance Impacts*, on page 39.

¹⁶ This construction analysis aggregates residential and non-residential construction because the average wages and average number of employees needed to construct 1,000 square feet of a structure for both residential and non-residential development is not significantly different.

**Table III.1:
RESIDENTIAL AND NON-RESIDENTIAL CONSTRUCTION (SQURE FEET), LEE COUNTY, 2000-2005**

Type of Development	2000	2001	2002	2003	2004	2005	Total Change ('00-'05)
Total Residential Construction	244,609,333	251,848,340	268,898,753	286,274,894	305,870,098	326,149,366	
Change from Previous Year		7,239,007	17,050,413	17,376,141	19,595,204	20,279,268	81,540,033
Total Non-Residential Construction¹⁷	96,397,759	105,949,030	111,964,072	119,059,464	124,719,150	133,361,587	
Change from Previous Year		9,551,271	6,015,042	7,095,392	5,659,686	8,642,437	36,963,828
Office Construction	17,126,177	17,418,543	18,108,766	18,859,258	19,141,785	19,791,794	
Change from Previous Year		292,366	690,223	750,492	282,527	650,009	2,665,617
Retail/Commercial Construction	21,314,717	21,097,848	21,563,970	22,687,970	22,801,124	23,970,458	
Change from Previous Year		-216,869	466,122	1,124,000	113,154	1,169,334	2,655,741
Tourist Construction	6,885,790	7,033,921	7,907,413	7,904,751	7,933,956	8,124,856	
Change from Previous Year		148,131	873,492	(2,662)	29,205	190,900	1,239,066
Industrial Construction	19,310,047	20,322,192	21,939,044	23,489,707	24,592,109	25,247,499	
Change from Previous Year		1,012,145	1,616,852	1,550,663	1,102,402	655,390	5,937,452
Institutional Construction	10,457,421	11,787,083	12,285,324	13,082,071	13,508,989	14,953,763	
Change from Previous Year		1,329,662	498,241	796,747	426,918	1,444,774	4,496,342
Governmental Construction	14,911,163	15,701,292	16,530,959	17,814,928	19,173,939	19,683,359	
Change from Previous Year		790,129	829,667	1,283,969	1,359,011	509,420	4,772,196
Miscellaneous Construction	6,392,444	12,588,151	13,628,596	15,220,779	17,567,248	21,589,858	
Change from Previous Year		6,195,707	1,040,445	1,592,183	2,346,469	4,022,610	15,197,414
Total New Construction (Residential and Non-Residential)		16,790,278	23,065,455	24,471,533	25,254,890	28,921,705	118,503,861

SOURCE: Lee County Property Appraiser, May 2006

¹⁷ Non-residential construction does not include agricultural buildings.

Table III.2: SQUARE FEET OF CONSTRUCTION BUILT PER CONSTRUCTION EMPLOYEE PER YEAR, LEE COUNTY, 2001-2005			
Year	Total Construction	Total Employment	Square Feet Built per Year/Employee
2001	16,790,278	19,701	852.26
2002	23,065,455	21,092	1,093.56
2003	24,471,533	22,427	1,091.16
2004	25,254,890	26,251	962.05
2005	28,921,705	32,853	880.34
Average for '01-05	--	--	968.77

Source: Lee County Property Appraiser, May 2006 and Florida Agency for Workforce Innovation, Labor Market Statistics, <http://www.labormarketinfo.com/library/ces.htm>, downloaded May 5, 2006.

Over the 5 year period, an average of 968.77 square feet of floor area per construction worker was built annually (See Table III.2: *Square Feet of Construction Built per Construction Employee per Year, Lee County, 2000-2005*). This amount fluctuates between individual years, but the pattern is relatively constant. See Figure III.1: *Square Footage Constructed Annually by Construction Worker*, which illustrates that only a slight variation of square footage constructed occurs between 2000 and 2005. Variations are due primarily because of the differing time dimensions of the data series. Permitting must precede construction. It is very common for a residential unit or non-residential development to be permitted in one year and constructed, either in whole or in part, in another year. Because of this phenomenon, there is no reason to expect the amount of square feet constructed from year to year to be consistent. However, over the 5 year period, the problem of timing becomes irrelevant. Consequently, by estimating the amount of space a construction employee builds over a year based on 5 years of development activity, it is possible to derive a reasonable estimate of floor area built by the average construction worker.



Source: Lee County Property Appraiser, May 2006 and Florida Agency for Workforce Innovation, Labor Market Statistics, <http://www.labormarketinfo.com/library/ces.htm>, downloaded May 5, 2006.

Table III.3: *Construction Employment and Need for Workforce Housing*, sets out the number of employees needed to construct different size residential units based on the fact that one construction employee builds 968.77 square feet of space annually (See the column in Table III.3 labeled “Employee Years to Construct Units”). Specifically, the table displays the number of employee years it takes to construct a building of a certain size.

Construction employment is measured in employee years (employee years to construct units). Housing has no such time dimension. Employees will have a definable career and dwellings an expected life. In estimating the demand construction employees place on a residential unit, it is recognized that construction employees require housing only during the period of actual construction of the home (even though they live in the community over their career). This is accounted for in the analysis. The average construction worker career is 40 years. To account for this circumstance, the calculation of construction employee years to construct the unit is therefore divided by 40 to convert to the needed housing over the work career of the employee (See column in Table III.3 labeled “Employees Needed (Over Career of Employee)).

Next, to determine the needed number of residential units these construction employees demand in Lee County, the employee equivalent is divided by the average number of employees per dwelling unit that exist today in Lee County (1.339¹⁸) to estimate the fraction of a dwelling unit needed to house the employees engaged in residential construction of

¹⁸ See Appendix B: *Employees Per Household, Lee County*.

homes (See column labeled “Housing Units Needed for Employees”). As shown in Table III.3: *Construction Employment and Need for Workforce Housing in Lee County*, this calculation results in a little over 0.019 of a dwelling unit demanded for construction employees for every 1,000 square feet of construction.

<p style="text-align: center;"><i>Table III.3:</i> CONSTRUCTION EMPLOYMENT AND NEED FOR WORKFORCE HOUSING IN LEE COUNTY</p>			
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees
500	0.516	0.013	0.010
1,000	1.032	0.026	0.019
2,000	2.064	0.052	0.039
3,000	3.097	0.077	0.058
4,000	4.129	0.103	0.077
5,000	5.161	0.129	0.096
6,000	6.193	0.155	0.116
7,000	7.226	0.181	0.135
8,000	8.258	0.206	0.154
9,000	9.290	0.232	0.173
10,000	10.322	0.258	0.193
12,000	12.387	0.310	0.232

b) Operations & Maintenance Impacts

In the Spring of 2006, RRC Associates, Inc., conducted a survey of homeowners in Lee County, the results of which are summarized in a report titled *Lee County Residential Job Generation Study (May 2006)* (hereinafter referred to as “*Residential Job Study*”). One of the primary objectives of the *Residential Job Study* was to acquire data on the employment associated with the operations and maintenance of residential units in Lee County. The *Residential Job Study* asked homeowners questions about the use, both directly and indirectly, of five primary categories of employees that are hired to assist in the operation and maintenance of residential units. They include:

- Direct hires by home owners;
- Hires by property management firms retained by home owners to operate and maintain residential properties;
- Hires by homeowners associations responsible for operating and maintaining residential properties;
- On-sight caretakers; and
- Other local service firms.

The operations and maintenance services asked about include exterior maintenance and upkeep (i.e., gardeners, mowers, and other exterior maintenance), housekeepers, kitchen help, child care/nannies, caretakers, butlers, personal trainers, and administrative assistants for the residential unit. The survey also gathered extensive data about selected operational characteristics of residential homes, as well as the use patterns and demographics of homeowners, which is useful for other policy, planning and research purposes.

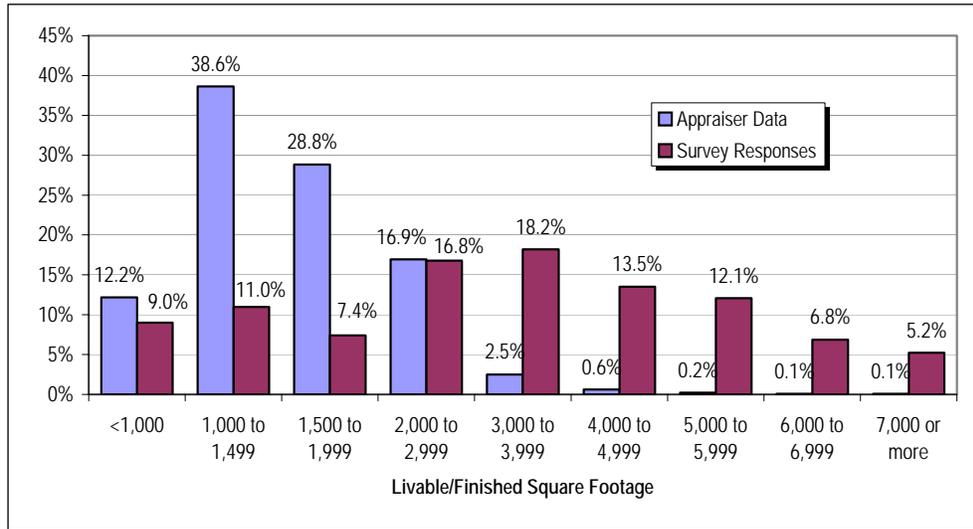
The survey was mailed to a sample of 3,000 homeowners in Lee County. This includes the population of owners of units in excess of 5,000 square feet, as identified through Lee County Property Appraiser records (785 total households); a random sample¹⁹ of 31 percent of owners of homes sized between 4,000 and 5,000 square feet (442 total); and a random sample of homes smaller than 4,000 square feet (1,773 total, about 1 percent of these homes). A total of 555 surveys were returned by the response cutoff date, for an average response rate of 18.7 percent. Of these 555 survey responses, 317 were responded to in full, whereas the remaining surveys lacked responses to some of the survey questions. In conducting analysis on the survey responses, only those surveys that have a response to the related questions in the analysis were used. Table III.4: *Number of Completed Survey Cases by Home Size*, shows the distribution of returned surveys by home size. Figure III.2: *Size Distribution of Owned Residences*, compares returned surveys to the actual distribution of houses in Lee County by house size.

Table III.4: NUMBER OF SURVEY CASES BY HOME SIZE	
Home Size	Survey Cases
< 1,000 sf	50
1,000 - 1,999 sf	102
2,000 - 2,999 sf	93
3,000 - 3,999 sf	101
4,000 - 4,999 sf	75
5,000 - 5,999 sf	67
6,000 - 6,999 sf	38
7,000 - 7,999 sf	7
8,000 - 8,999 sf	8
9,000 - 9,999 sf	3
10,000 SF +	11
Total	555

Source: RRC Residential Survey (2006)

¹⁹ The random sample was conducted using SPSS statistical software.

**Figure III.2:
SIZE DISTRIBUTION OF OWNED RESIDENCES**



Source: RRC Residential Survey (2006) and Lee County Property Appraiser Database (Feb. 2006)

This analysis required testing of several hypotheses through regression analysis to determine the best equation that explains the relationship between operations and maintenance employees and the units they service. Because each hypothesis used a different set of variables, each regression analysis that tested a hypothesis required the use of survey responses that had completed answers to the questions related to the variables used in the hypothesis. The initial hypothesis included multiple variables, and required the use of completed surveys, of which there were 317 survey responses. The final hypothesis that was tested required the use of surveys that had information on the size of the house and the number of operations and maintenance employees that serviced the house, of which there were 447 responses. See Table III.5: *Number of Survey Responses Used in Analysis of Operations and Maintenance Employees*.

Table III.5: NUMBER OF SURVEY CASES USED IN ANALYSIS OF OPERATIONS AND MAINTENANCE EMPLOYEES	
Survey Cases	Number of Responses
All returned responses	555
Responses with house size and number of operations and maintenance employees questions answered	447
Responses completed in entirety	317

In interpreting the results of the surveys, it is important to remember that the survey sampling and responses are not representative of the actual distribution of home sizes in Lee County. Rather, the sample was structured in such a way as to insure adequate representation of larger homes within Lee County. This representation of larger homes was done to best examine the relationship between employment and home square footage across the

full spectrum of home sizes, including very large homes. Regression analysis is used to analyze these data and this statistical technique will not be biased due to the forced representation of larger homes.²⁰

For each type of home service the owner uses (homeowners associations, property management companies, independent contractors, on-site caretakers and other directly hired employees), owners were asked to report how much they spend per year on each service and, if known, approximately how many hours employees spent serving their home each year. Annual spending amounts were converted into “employee equivalents” using a combination of wage data and assumptions regarding non-labor costs. Wage data was based on annualized wage rates for Lee County for specified industry sectors, as extrapolated from 2004 Quarterly Census of Employment and Wages (QCEW) data.²¹ (See Appendix C: “Employee Equivalent” Conversion Ratio, for a more complete discussion of the methodology used to estimate “employee equivalents”.) Specific assumptions for individual service providers are as follows:

- Homeowners associations (HOA): A conversion ratio of \$111,795 in homeowners’ dues per direct job was assumed. This is based on an assumption of a \$26,165 average wage for HOA employees (Lee County inflation adjusted 2004 QCEW data – NAICS code 813990) and an assumption that 23 percent of HOA costs are used for wages (based on the ratio of wages paid to revenue received for HOA’s from the 2002 Economic Census for the state of Florida).
- Property management firms (PMF): A conversion ratio of \$82,390 in property management fees per direct job was assumed. This is based on an assumption of a \$30,940 average wage for residential property management employees (Lee County inflation adjusted 2004 QCEW data – NAICS code 531311) and an assumption that 38 percent of property management costs are used for wages (based on the ratio of wages paid to revenue received for PMF’s from the 2002 Economic Census for Lee County).
- Other contracted services: A conversion ratio of \$90,400 in contracted service fees per direct job was assumed for other contracted services. This is based on an assumption of a \$27,840 average wage for buildings and dwellings services employees (Lee County inflation adjusted 2004 QCEW data – NAICS codes 5616 & 5617) and an assumption that 31 percent of service costs are used for wages (based on the ratio of wages paid to revenue received for contract services from the 2002 Economic Census for Lee County).

²⁰ Note should be taken of the fact that the survey is not a random sampling of all Lee County dwellings in interpreting these results.

²¹ The QCEW data is provided by the U.S. Census Bureau of Labor Statistics, and is available at <http://data.bls.gov/PDQ/outside.jsp?survey=en>

- Direct employees and caretakers: A conversion ratio of \$24,800 in employment costs per direct job was assumed. This is based on the average wage paid by these industries in Lee County as reported by the 2004 QCEW data (NAICS code 814110) and adjusted for inflation (i.e., \$24,800).

The employment estimates resulting from this analysis are similar to, although not quite precisely the same as, “full-time equivalents” (FTE’s). The employment estimates represent “employee equivalents” for the respective service occupations. Employee equivalents represent the number of persons that are typically employed to complete the work, based on existing employment patterns in the respective industries, which presumably includes a blended hybrid of full-time and part-time employees.

In addition to questions regarding home services employment, survey respondents that were not full-time residents of Lee County were also asked to describe the tenancy of their Lee County unit. Data about tenancy (how the unit is used or occupied) was broken into six (6) categories:

- Secondary residence: units owned by the respondent and used as a secondary residence by the owner;
- Vacation rental: units owned by the respondent and leased on a short-term basis, usually as a vacation or seasonal rental;
- Business/corporate rental: units owned by the respondent and leased on a short-term basis to business or corporate entities for retreats and conferences;
- Long-term rental residences: units owned by the respondent and leased on a long-term basis (typically for 6 months to a year), usually to full-time residents of the County;
- Other (for the respondent to specify): uses other than those listed above for which the unit is occupied; and
- Vacant: amount of time in which the residence is not occupied.

Generally, the extent of operation and maintenance services provided by residents are a function of several factors: unit size, type of dwelling unit structure, tenancy, the age of the occupant, the income of the occupant, the amount of time a person occupies the unit, and the owner’s interest in personally providing operation and maintenance services.

As part of the preparation of this section of the analysis, several hypotheses were tested using regression analysis to evaluate the survey results from the *Residential Job Survey* about the use of operations and maintenance employees by homeowners. (See Appendix D: *Statistical Analysis of Operations and Maintenance Employees Serving Residential Dwelling Units, Lee County.*)

The initial hypothesis evaluated whether the number of operations and maintenance workers employed by an individual residential unit is a function of (1) unit size, (2) type of dwelling, (3) age, (4) income, and (5) whether the unit is occupied full-time (even though only unit size and the type of the dwelling are factors that can be regulated). The statistical results of this analysis in their logarithmic form yielded good results, except that the residency of the household (i.e., whether the unit is occupied full-time) was statistically insignificant. A multiple regression analysis was then conducted without using residency as an explanatory variable. This analysis, which was the final form of the equation used, yielded an R^2 (coefficient of determination) of 0.375, meaning that 37.5 per cent of all variations of full-time operations and maintenance employees is explained by unit size, type of dwelling (single-family detached versus all others), age, and income. More specifically, the interpretation of these results shows that:

- Employee equivalents increase with the size of the residential unit, but at a diminishing rate;
- Owners hire more operational and maintenance services as they age, but also at a diminishing rate;
- The higher income owners tend to rely more on operational and maintenance services, also at a diminishing rate;
- Single-family detached owners tend to rely less on operational and maintenance services than those residing in other types of dwellings.

This analysis indicates that while significant determinates of the relationship between residential units and the use of operation and maintenance employees are explained, there are other determinates that have not been included in the analysis. Perhaps the most important of these are preferences, situations where some persons enjoy performing operations and maintenance services themselves, while others do not. The analysis also emphasizes the importance that unit size has in determining the amount of the use of operations and maintenance employees.

Because age and income cannot be regulated, further regression analysis was conducted excluding these explanatory variables from the equation. In addition, because so few residential units in the sample were larger than 10,000 square feet, the analysis is also directed at units no greater than

10,000 square feet.²² Finally, because residency (whether the unit is occupied full-time) is determined not to be a strong explanatory variable, it too was excluded from the equation, resulting in residential unit size²³ as the explanatory variable for the number of FEEs (full-time “employee equivalents”) that service the unit. This hypothesis is explained as follows:

FEE = f (Size of Unit)

As is explained above, it was expected that the basic relationship between the size of a dwelling unit and the number of operations and maintenance employees hired to serve the unit would be logarithmic in nature, meaning the number of FEEs are quite small for the smallest residential units, and increase at a greater rate as the size of the residence increases. The multiple regression analysis of the data demonstrates that the relationship is in fact logarithmic in nature. The results are:

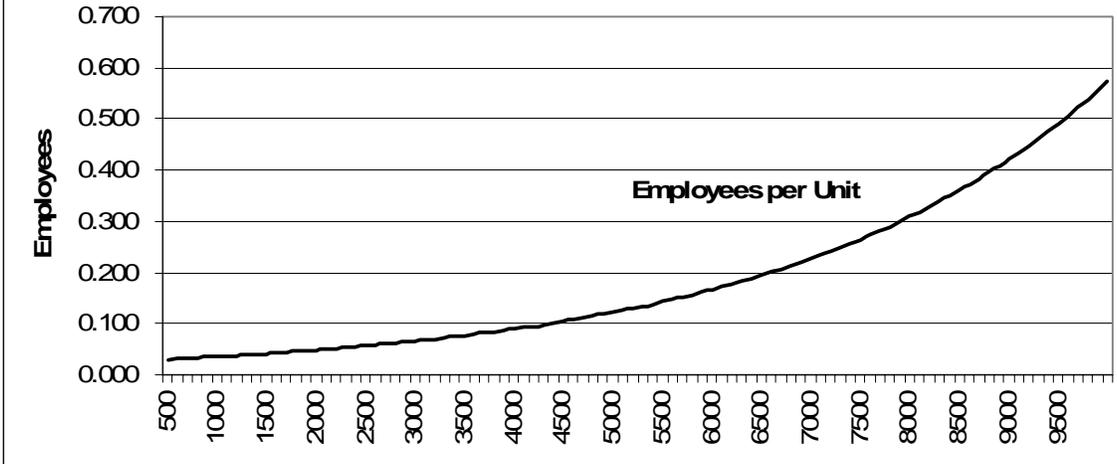
Ln (Employment) = -3.6468 + (0.000309*Size)
R²_{adjusted} = 0.28
F = 176.4
t-Intercept = 38.2
t-Size = 13.3
Permanent Employment = e^[-3.5614 + (0.000309 * FT²)]

The T-Ratios for the regression coefficients all have a 99% level of significance or greater. The F-Statistics also have significance of 99%. The results of this analysis indicate that there might be several reasons that explain the number of persons employed (FEEs) to provide operation and maintenance services to a residential unit, and that the size of a unit is significant in explaining this relationship. The differences in these impacts are graphically portrayed in Figure III.3: *Residential Employment by Size of Unit*. (See also Appendix D: *Statistical Analysis of Operations and Maintenance Employees Servicing Residential Dwelling Units, Lee County*.)

²² The sample size included five cases of 10,000 square foot houses, and two cases of houses larger than 10,000 square feet.

²³ Unit size is measured in square feet of habitable area.

Figure III.3:
RESIDENTIAL EMPLOYMENT BY SIZE OF UNIT



The exponential relationship identified above effectively describes post construction (operations and maintenance) employment as a function of home size for units of 10,000 square feet and under. For units larger than 10,000 square feet, it is recommended that the ratios for the 10,000 square foot unit be applied on a proportional basis per 1,000 feet above 10,000 square feet. The result of applying the formula to homes of varying sizes is shown below in Table III.6: *Operations and Maintenance Employment by Home Size, Lee County*. To determine the needed number of residential units these operations and maintenance employees demand in Lee County, the employee equivalent is divided by the average number of employees per dwelling unit that exist today in Lee County (1.339²⁴) to estimate the fraction of a dwelling unit needed to house the employees engaged in residential construction of homes of different sizes.

Table III.6:
OPERATIONS AND MAINTENANCE EMPLOYMENT
BY HOME SIZE, LEE COUNTY

Unit Size	Employees	Housing Units Needed for Employees
500	0.030	0.022
1,000	0.036	0.027
2,000	0.048	0.036
3,000	0.066	0.049
4,000	0.090	0.067
5,000	0.122	0.091
6,000	0.166	0.124
7,000	0.227	0.170
8,000	0.309	0.231
9,000	0.421	0.314
10,000	0.573	0.428
12,000	1.063	0.794

²⁴ See Appendix B: *Employees per Household, Lee County*.

c) Impacts on Critical Employees

As is discussed earlier in this section, the final group of workforce members for which new residential development creates the need for affordable workforce housing units are critical employees. Critical employees include:

- Public School Teachers²⁵
- Fire & Rescue Personnel²⁶
 - Firefighters
 - Emergency Medical Technicians
 - Paramedics
- Law Enforcement²⁷
 - Police officers and Sheriff's deputies
 - Corrections (jail) deputies

These critical employees are important to the overall functioning of the community. In determining the need for workforce housing for Public School Teachers created by new residential development, the need is attributed solely to residential development because it is residential development where school age children live. In allocating the need for workforce housing for Fire and Rescue personnel and Law Enforcement personnel created by new development, need is attributed to both residential and nonresidential development based on the amount (square feet) of development being served (residential versus nonresidential development).

In the analysis, the number of critical employees included does not include personnel who support or supervise. School principals, fire chiefs and police captains are not included; the focus is on those providing direct services to the citizens of Lee County.

²⁵ Public school teachers consist of all public school teachers employed by the School District of Lee County. This includes only full-time teachers, and does not include personnel serving in administrative or supervisory capacities.

²⁶ Fire and rescue personnel include the firefighters, emergency medical technicians, and paramedics employed by 17 of the 21 fire districts located in Lee County. This includes only full-time fire and rescue personnel, and does not include personnel serving in administrative or supervisory capacities. The 17 fire districts include: Cape Coral, Lee County, Alva, Fort Myers, Pine Island, North Fort Myers, San Carlos Park, Estero, Boca, Caloosahatchee, Fort Myers Shores, Fort Myers Beach, South Trail, Bonita Springs, Sanibel, Useppa, and Lehigh Fire Districts. Data was not available for the remaining four fire districts in Lee County.

²⁷ Law enforcement personnel consist of all police officers, sheriff's deputies, and correctional deputies employed by the four law enforcement jurisdictions in Lee County. This includes only full-time law enforcement officers, and does not include personnel serving in administrative or supervisory capacities. The four law enforcement jurisdictions include: Cape Coral, Lee County, Fort Myers and Sanibel.

Tables III.7, III.8, III.9 and III.10 present the critical employee data used to determine the demand or need created for workforce housing for Teachers, Fire and Rescue personnel, and Law Enforcement personnel from residential development. Table III.7: *Residential Critical Employees – Teachers*, shows that the demand created for workforce housing units for teachers by residential development is 0.0099 of a unit per 1,000 square feet. This is based on the fact that the 2006 estimated residential development²⁸ is served by 4,605 teachers. To determine the number of workforce housing units needed for teachers per 1,000 square feet of residential development, the teachers per 1,000 square feet of residential development is divided by the employees per household factor (1.339)²⁹. This results in the need for 0.0099 of a workforce housing unit for teachers per 1,000 square feet of residential development.

Table III.7: RESIDENTIAL CRITICAL EMPLOYEES – TEACHERS	
School Teachers	
Total Number of Teachers (2006)	4,605
Percent of Teachers Attributable to Residential Development	100%
Total Residential Floor Area (estimated for 2006)	346,428,634
Teachers per 1,000 FT ²	0.0133
Workforce Housing Units Needed per 1,000 FT ²	0.0099

Table III.8: *Residential Critical Employees – Fire and Rescue*, shows that the demand created for workforce housing for Fire and Rescue personnel by new residential development. This is calculated by first applying the percent of personnel attributable to residential development to the total number of Fire and Rescue personnel, then dividing the product by the total residential floor area estimated for 2006. This results in 0.0012 Fire and Rescue personnel per 1,000 square feet of residential development. To determine the number of workforce housing units for Fire and Rescue personnel needed per 1,000 square feet of residential development, the Fire and Rescue personnel per 1,000 square feet of residential development is divided by the employees per household factor (1.339)³⁰. This results in the need for 0.0009 of a workforce housing unit for Fire and Rescue personnel per 1,000 square feet of residential development.

²⁸ Teachers per 1,000 square feet of residential development is calculated by dividing the total residential floor area estimated for 2006 into the total number of teachers, and then multiplying that number by 1,000. This is also done for Fire and Rescue and Law Enforcement personnel.

²⁹ See Appendix B: *Employees Per Household, Lee County*.

³⁰ See Appendix B: *Employees Per Household, Lee County*.

<i>Table III.8:</i> RESIDENTIAL CRITICAL EMPLOYEES – FIRE AND RESCUE	
Fire and Rescue Personnel	
Total Number of Fire and Rescue Personnel (2006)	975
Percent of Personnel Attributable to Residential Development	41% ³¹
Total Residential Floor Area (estimated for 2006)	346,428,634
Fire/Rescue Personnel per 1,000 FT ²	0.0012
Workforce Housing Units Needed per 1,000 FT ²	0.0009

Table III.9: *Residential Critical Employees – Law Enforcement*, shows that the demand created for workforce housing for Law Enforcement personnel by new residential development. This is calculated by first applying the percent of personnel attributable to residential development to the total number of law enforcement personnel, then dividing the product by the total residential floor area estimated for 2006. This results in 0.0022 Law Enforcement personnel per 1,000 square feet of residential development. To determine the number of workforce housing units for Law Enforcement personnel needed per 1,000 square feet of residential development, the Law Enforcement personnel per 1,000 square feet of residential development is divided by the employees per household factor (1.339)³². This results in the need for 0.0017 of a workforce housing unit for Law Enforcement personnel per 1,000 square feet of residential development.

<i>Table III.9:</i> RESIDENTIAL CRITICAL EMPLOYEES – LAW ENFORCEMENT	
Law Enforcement Personnel	
Total Number of Personnel (2006)	1,026
Percent of Personnel Attributable to Residential Development	84% ³³
Total Residential Floor Area (estimated for 2006)	346,428,634
Law Enforcement Personnel per 1,000 FT ²	0.0025
Workforce Housing Units Needed per 1,000 FT ²	0.0019

A summary of workforce housing need created by residential development for Public School Teachers, Fire and Rescue personnel and Law Enforcement personnel is outlined in Table III.10: *Residential Critical Employees – All Categories*. In total, critical employees demand 0.00125 workforce housing units per 1,000 square feet of residential development.

³¹ The 41% attribution of fire personnel to residential development is derived from 41% of all floor area in Lee County being identified as a residential land use.

³² See Appendix B: *Employees Per Household, Lee County*.

³³ The 84% attribution of law enforcement to residential development results from a Lee County survey of law enforcement call for service data conducted by Duncan Associates that identifies calls for service based on land use distributions. These data can be found online at <http://www.impactfees.com>

<i>Table III.10:</i> RESIDENTIAL CRITICAL EMPLOYEES – ALL CATEGORIES		
Per 1,000 Square Feet of Residential Development	Employees	Workforce Units
Teachers Needed	0.0133	
Workforce Housing Unit Needs for Teacher Households		0.0099
Fire and Rescue Personnel Needed	0.0012	
Workforce Housing Unit Needs for Fire and Rescue Personnel Households		0.0009
Law Enforcement Personnel Needed	0.0025	
Workforce Housing Unit Needs for Law Enforcement Personnel Households		0.0019
TOTAL CRITICAL EMPLOYEES NEEDED	0.0170	
TOTAL WORKFORCE HOUSING UNITS NEEDED FOR CRITICAL EMPLOYEES		0.0127

d) Summary of Needs for Workforce Housing Units from Residential Development

Table III.11: *Workforce Housing Need Created by Residential Development*, summarizes the total workforce housing unit need created by new residential development, for construction, operation/maintenance employees, and critical employees.

**Table III.11:
WORKFORCE HOUSING NEED CREATED BY RESIDENTIAL DEVELOPMENT³⁴**

Unit Size (FT ²)	Employees						Total Affordable Housing Units Needed (Construction and Operation and Maintenance Employees)
	Construction		Operations & Maintenance		Critical Employees		
	Employees	Affordable Housing Units Needed for Construction Employees	Employees	Affordable Housing Units Needed for Operation and Maintenance Employees	Employees	Affordable Housing Units Needed for Critical Employees	
500	0.013	0.010	0.030	0.022	0.0085	0.0063	0.0383
1,000	0.026	0.019	0.036	0.027	0.0170	0.0127	0.0587
2,000	0.052	0.039	0.048	0.036	0.0339	0.0253	0.1003
3,000	0.077	0.058	0.066	0.049	0.0509	0.0380	0.1450
4,000	0.103	0.077	0.090	0.067	0.0678	0.0507	0.1947
5,000	0.129	0.096	0.122	0.091	0.0848	0.0633	0.2503
6,000	0.155	0.116	0.166	0.124	0.1018	0.0760	0.3160
7,000	0.181	0.135	0.227	0.170	0.1187	0.0887	0.3937
8,000	0.206	0.154	0.309	0.231	0.1357	0.1013	0.4863
9,000	0.232	0.173	0.421	0.314	0.1527	0.1140	0.6010
10,000	0.258	0.193	0.573	0.428	0.1696	0.1267	0.7477
12,000	0.310	0.232	1.063	0.794	0.2035	0.1520	1.1780

³⁴ Note that the data shown in Table III.11: *Workforce Housing Need Created by Residential Development*, are illustrative only. The precise formulae should be used for individual dwellings.

3. Assistance to Address Workforce Housing Need

In fully exploring the need for workforce housing created by residential development, there is one final step. It involves determining the amount of assistance (housing subsidy) that is needed to make housing in the community affordable for the construction, operations/maintenance, and critical employee households that build and service residential units.

As is discussed in Section II: *Problem Description*, housing in Lee County has become unaffordable to not only low-wage earning households, but also to households earning the median household income, and higher. Consequently, the income range of households that need workforce housing assistance in the county is fairly broad. To adequately address the different types of households that need workforce housing assistance, three Workforce Housing Categories are developed in this Study. The intent of the categories is to recognize that households of varying income levels live in units of varying size and price. For example, it is logical that a household earning \$60,000 lives in a different and more expensive house than a household earning \$30,000. These three categories address this issue. They also address the fact that not all households earning the same income have the same housing needs. For example, two households may earn the median income, but have a different number of household members and require a different number of bedrooms in a unit. These categories are used to better assess workforce housing mitigation at a level that is reflective of the different income categories and housing needs found in the community.

The first step in determining the three Workforce Housing Categories is to determine the type of housing that will be provided. Three prototypical housing types were developed using local cost and square footage data on existing affordable units built in the county, other communities in Florida, and other resort communities across the nation. These three Workforce Housing Types identify the size of an appropriate workforce housing unit for various income categories, the type of construction, and the cost per square foot to construct the unit based upon local construction costs. Table III.12: *Workforce Housing Types, Lee County*, shows the size, type, and cost to construct these prototypical units. The three units differ from each other primarily in terms of the size of the units. The size of the prototypical units includes all areas of a home that are air conditioned. The cost per square foot is the same for all units. The cost shown is a turn-key cost of production under prevailing market conditions.

TABLE III.12: WORKFORCE HOUSING TYPES, LEE COUNTY ³⁵			
	Type A	Type B	Type C
Unit Size (square footage)	740	1,025	1,250
Construction Type	Traditional	Traditional	Traditional
Cost per FT	\$200	\$200	\$200
Construction Cost	\$150,000	\$205,000	\$250,000

Because there are factors other than housing cost that determine an appropriate type of housing for a given household (such as number of household members, location, and other personal preferences), the three Workforce Housing Types (Type A, Type B, and Type C) are distributed to three Workforce Housing Categories (Categories 1, 2, and 3). These categories reflect the fact that while a lower income household will likely purchase or rent a house that costs less, the household will also need to provide adequate space for all household members. As shown below in Table III.13: *Distribution of Workforce Housing Categories, Lee County*, each category is a weighted average of a distribution of the three types of housing identified in Table III.11. This assumes that there is a mix of the three unit types, at varying degrees, in each of the three categories. The average price of housing and the income needed to afford each category of housing reflect the mix of housing types included within each category. Table III.13: *Distribution of Workforce Housing Categories, Lee County*, outlines the mix of housing types in each category.

TABLE III.13: DISTRIBUTION OF WORKFORCE HOUSING CATEGORIES, LEE COUNTY			
	Category 1	Category 2	Category 3
Type A	80%	25%	10%
Type B	10%	50%	10%
Type C	10%	25%	80%
Average Cost/Price	\$165,500	\$202,500	\$235,500
Household Income Needed	\$48,459	\$59,632	\$69,598

These Workforce Housing Categories are then assigned to income ranges. As shown in Table III.14: *Workforce Housing Categories by Income Range*, Category 1 housing is appropriate for households earning 90 percent of area median income or below. Category 2 housing is appropriate for households earning between 90 percent and 125 percent of area median income. Category 3 housing is appropriate for households earning between 125 and 140 percent of area median income.

³⁵ Each of the three Workforce Housing Categories were developed under the assumption that workforce housing units created as a result of a mitigation program that utilizes this workforce housing methodology would develop traditional (versus modular) residential housing units. Therefore, the cost to develop these units factors in the housing type and housing construction assumptions.

Table III.14:
WORKFORCE HOUSING CATEGORIES BY INCOME RANGE

	Percent of Median Income	From	To
Category 1	90% of Median & Under	--	to \$50,400
Category 2	90% - 125% of Median	\$50,401	to \$61,600
Category 3	125% - 140% of Median	\$61,601	to \$78,400

Next, and for the purposes of measuring the assistance needed to make units affordable to members of the workforce at different income levels, the household income levels were evaluated for the different members of the workforce, and then matched to the appropriate Workforce Housing Categories. The household income levels were matched with the Workforce Housing Categories that most closely aligned with the incomes levels. For example, given that the average household income for operations and maintenance workers is \$52,064, and the income needed to afford Category 2 housing is \$50,401 to \$61,600, operations and maintenance workers are aligned with the Category 2 Workforce Housing Category.

a) Workforce Housing Assistance for Construction Employee Households

Once the reasonable cost for a prototypical workforce housing unit is determined, the next step is to identify the amount of assistance that an employee household requires to afford a prototypical unit within their income category. For new residential units, this requires evaluating the subsidy needed for construction employees and operations and maintenance employees.

According to the employment and household earnings for the construction industry in Lee County, individual annual construction employee earnings are \$38,096, and annual household earnings are \$50,773. Based on these earnings, a construction employee household could reasonably afford to spend \$173,404 for housing. Based upon their income, construction employee households qualify for Category 1 workforce housing that is estimated to cost \$165,500.³⁶ Given the construction employee household earnings and the maximum housing cost that a construction employee household could afford (\$173,404), Category 1 level of housing requires \$0 of workforce housing assistance per worker household to afford a unit. In other words, the difference between the cost of a Category 1 house (\$165,500) and the maximum

³⁶ For those incomes that are within a modest range above or below the maximum cut off of a Workforce Housing Category, professional judgment has been used to determine the appropriate Workforce Housing Category for the employee household. For example, while the household earnings for construction workers (\$50,773) is slightly higher than the maximum household earnings for a Category 1 unit (\$50,400), it is deemed close enough that construction workers are assigned to Category 1.

housing cost that a construction employee household can reasonably afford (\$173,404) is the workforce housing assistance needed for a construction employee household to afford a unit (\$0). See Table III.15: *Workforce Housing Affordability for Construction Employees* shown below.

Table III.15: WORKFORCE HOUSING AFFORDABILITY FOR CONSTRUCTION EMPLOYEES	
Construction Employee Earnings	\$38,096
Construction Employee Household Earnings	\$50,773
Maximum Housing Cost for Construction Employee Household ³⁷	\$173,404
Available Housing Cost (Category 1)	\$165,500
Assistance (Subsidy) per Units Needed for Construction Employee Household	\$0

The housing assistance needed by unit size is shown in Table III.16: *Construction Employment and Need for Workforce Housing in Lee County*.

Table III.16: CONSTRUCTION EMPLOYMENT AND NEED FOR WORKFORCE HOUSING, LEE COUNTY				
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees	Housing Assistance Needed per Unit
500	0.516	0.013	0.010	\$0
1,000	1.032	0.026	0.019	\$0
2,000	2.064	0.052	0.039	\$0
3,000	3.097	0.077	0.058	\$0
4,000	4.129	0.103	0.077	\$0
5,000	5.161	0.129	0.096	\$0
6,000	6.193	0.155	0.116	\$0
7,000	7.226	0.181	0.135	\$0
8,000	8.258	0.206	0.154	\$0
9,000	9.290	0.232	0.173	\$0
10,000	10.322	0.258	0.193	\$0
12,000	12.387	0.310	0.232	\$0

b) Workforce Housing Assistance for Operations and Maintenance Employee Households

The residential survey conducted by RRC Associates, Inc., found that there are 0.048 persons employed in the operations and maintenance of a 2,000 square foot residential unit in Lee County (see Table III.6). This amounts to 96 employee hours of service work by operation and

³⁷ The maximum housing cost for a construction employee household is calculated by dividing the construction employee household earnings (\$50,773) by the income ratio (29.28%) to determine the cost of housing that is affordable to a construction employee household.

maintenance employees per dwelling unit per year, or just under two hours per week, annually. Based on industry definitions, the earnings of operational and maintenance employees are identified as a weighted average of the individual components of residential operational and maintenance employment. The number and distribution of these employees is shown in Table III.17: *Residential Operational and Maintenance Employment, Lee County*.

Table III.17: RESIDENTIAL OPERATIONAL & MAINTENANCE EMPLOYMENT, LEE COUNTY				
Industry	Employees		Hours per Year	Distribution
	Total	per Unit		
Construction				
Building Finishing	1,173	0.004	7.2	7.5%
Other Contractors	1,565	0.005	9.6	10.0%
Financial Activities				
Property Management	391	0.001	2.4	2.5%
Misc Real Estate & Finance	391	0.001	2.4	2.5%
Professional & Business Services				
Services to Buildings & Dwellings (cleaning & Landscaping)	4,694	0.014	28.8	30.0%
Waste Collection	1,173	0.004	7.2	7.5%
Education & Health Services				
Health Services	1,173	0.004	7.2	7.5%
Social Services	1,173	0.004	7.2	7.5%
Other Services				
Repair & Maintenance	782	0.002	4.8	5.0%
Personal & Laundry Services	1,173	0.004	7.2	7.5%
Private Household Services	1,565	0.005	9.6	10.0%
Other	391	0.001	2.4	2.5%
TOTAL OPERATIONS & MAINTENANCE	15,646	0.048	96	100.0%

Source: RRC Household Survey and U.S. Government Printing Office, North American Industrial Classification System Manual.

Table III.18: *Workforce Housing Affordable for Operational and Maintenance Employees, Lee County*, identifies the individual incomes for each of the operation and maintenance employment industries and the weighted distribution of these incomes. The weighted average income for operational and maintenance employees is \$39,386, meaning they can reasonably afford housing that costs \$177,813. These two values are used to calculate the weighted average of individual incomes for all operation and maintenance employees, and employee household earnings for operation and maintenance employee households.

Based upon their income, operations and maintenance employee households qualify for Category 2 workforce housing that is estimated to cost \$202,500. Given that operations and maintenance employee households earn \$52,064 and the maximum housing cost that an employee household could afford is \$177,813 Category 2 level of

housing would require \$24,687 of workforce housing assistance per operations and maintenance worker household to afford a unit. In other words, the difference between the cost of a Category 2 house (\$202,500) and the maximum housing cost that a construction employee household can afford (\$177,813) is the workforce housing assistance needed for an operations and maintenance employee household to afford a unit (\$24,687). See Table III.18: *Workforce Housing Affordable for Operational and Maintenance Employees, Lee County*, shown below.

Table III.18: WORKFORCE HOUSING AFFORDABLE FOR OPERATIONAL AND MAINTENANCE EMPLOYEES, LEE COUNTY		
Operation and Maintenance Industries	Individual Income	Income Weight
Construction	\$38,096	18%
Financial Activities	\$50,793	5%
Prof & Business Services	\$43,300	38%
Education & Health Services	\$41,863	15%
Other Services	\$30,653	25%
Weighted Average of Individual Incomes	\$39,386	
Employee Household Earnings	\$52,064	
Upper Affordability Limit	\$177,813	
Available Housing Cost	\$202,500	
Assistance Gap	\$24,687	

The workforce housing assistance needed by unit size is shown in Table III.19: *Operations and Maintenance Employees Assistance Needed by Unit Size, Lee County*.

Table III.19 OPERATION AND MAINTENANCE EMPLOYEES ASSISTANCE NEEDED BY UNIT SIZE, LEE COUNTY			
Building Size	Operation & Maintenance Employees	Housing Units Needed for Employees	Housing Assistance Needed per Unit
500	0.030	0.022	\$543
1,000	0.036	0.027	\$667
2,000	0.048	0.036	\$889
3,000	0.066	0.049	\$1,210
4,000	0.090	0.067	\$1,654
5,000	0.122	0.091	\$2,247
6,000	0.166	0.124	\$3,061
7,000	0.227	0.170	\$4,197
8,000	0.309	0.231	\$5,703
9,000	0.421	0.314	\$7,752
10,000	0.573	0.428	\$10,566
12,000	1.063	0.794	\$19,602

c) Workforce Housing Assistance for Critical Employees

Tables III.20, III.21, III.22 and III.23 present the critical employee salaries and workforce housing assistance analysis. This information presents the average salaries and amount of workforce housing that each type of critical employee can afford and compares that to the appropriate category of workforce housing to determine the affordability gap, or housing assistance needed, for each type of critical employee.

Table III.20: *Teachers Workforce Housing Assistance*, presents the workforce housing assistance data for public school teachers. Based upon 2006 data taken from the Lee County school district, the average school teacher earns \$44,057 annually. This equates to a household income of \$56,734, which is approximately equal to the median family income. With this income, teacher households can afford to purchase a home priced at \$193,764. Based on their income, teachers qualify for Category 2 workforce housing that is estimated to cost \$202,500. The difference between what these teachers can afford (\$193,764) and the cost of Category 2 workforce housing (\$202,500) creates an affordability gap, or housing assistance need, of \$8,736. Because there is a need for 0.0099 workforce housing units for teachers per 1,000 square feet of residential development built in Lee County, the assistance needed for teachers to be able to afford a Category 2 workforce home is equal to \$0.09 per foot of residential floor area built. See Table III.20.

<i>Table III.20</i> TEACHERS WORKFORCE HOUSING ASSISTANCE	
School Teachers	
Teacher Salary - Individual	\$44,057
Teacher Salary - Household	\$56,734
Household Affordability Limit	\$193,764
Category 2 Housing Cost	\$202,500
Affordability Gap	\$8,736
Number of Teachers in Lee County	4,605
Percent of Teachers Attributable to Residential Development	100%
Total Residential Floor Area (estimated for 2006)	346,428,634
Teachers per 1,000 FT ² of Residential Floor Area	0.0133
Teacher Households per 1,000 FT ² of Residential Floor Area	0.0099
Housing Affordability Gap per Residential FT ²	\$0.09

Table III.21: *Fire and Rescue Workforce Housing Assistance*, presents the workforce housing assistance data for Fire and Rescue personnel. Based upon 2006 data taken from 17 of the 21 fire districts in Lee County, the average fire and rescue worker earns \$52,463 annually. This equates to a household income of \$65,140. With this income, fire and rescue employee households can afford to purchase a home priced at \$222,471. Based on their income, fire and rescue employee

households qualify for Category 3 workforce housing that is estimated to cost \$235,500. The difference between what these fire and rescue employee households can afford (\$222,471) and the cost of Category 3 workforce housing (\$235,500) creates an affordability gap, or housing assistance need, of \$13,029. Because there is a need for 0.0009 of a workforce housing unit for Fire and Rescue personnel per 1,000 square feet of residential floor area built in Lee County, the assistance needed for Fire and Rescue personnel households to be able to afford a Category 3 workforce home is equal to \$0.01 per foot of residential floor area built. See Table III.21.

Table III.21 FIRE AND RESCUE PERSONNEL WORKFORCE HOUSING ASSISTANCE	
Fire and Rescue Personnel	
Fire and Rescue Salary - Individual	\$52,463
Fire and Rescue Salary - Household	\$65,140
Household Affordability Limit	\$222,471
Category 3 Housing Cost	\$235,500
Affordability Gap	\$13,029
Estimated Number of Fire and Rescue Personnel in Lee County	975
Percent of Fire and Rescue Personnel Attributable to Residential Development	41% ³⁸
Total Residential Floor Area (estimated for 2006)	346,428,634
Fire and Rescue Personnel per 1,000 FT ² of Residential Floor Area	0.0012
Fire and Rescue Personnel Households per 1,000 FT ² of Residential Floor Area	0.0009
Housing Affordability Gap per Residential FT ²	\$0.01

Table III.22: *Law Enforcement Workforce Housing Assistance*, presents the workforce housing assistance data for Law Enforcement personnel. Based upon 2006 data taken from the four Law Enforcement entities in Lee County, the average Law Enforcement worker earns \$44,667 annually. This equates to a household income of \$57,345. With this income, law enforcement employee households can afford to purchase a home priced at \$195,849. Based on their income, law enforcement employee households qualify for Category 2 workforce housing that is estimated to cost \$202,500. The difference between what these law enforcement employee households can afford (\$195,849) and the cost of Category 2 workforce housing (\$202,500) creates an affordability gap of \$6,651. Because there is a need for 0.0019 of a workforce housing unit for Law Enforcement personnel per 1,000 square feet of residential floor area built in Lee County, the assistance needed for Law Enforcement personnel households to be able to afford a Category 2 workforce home is equal to \$0.01 per foot of residential floor area built. See Table III.22.

³⁸ The 41% attribution of fire personnel to residential development is derived from 41% of all floor area in Lee County being identified as a residential land use.

Table III.22 LAW ENFORCEMENT PERSONNEL WORKFORCE HOUSING ASSISTANCE	
Law Enforcement Personnel	
Law Enforcement Salary - Individual	\$44,667
Law Enforcement Salary - Household	\$57,345
Household Affordability Limit	\$195,849
Category 2 Housing Cost	\$202,500
Affordability Gap	\$6,651
Estimated Number of Law Enforcement Personnel in Lee County	1,026
Percent of Law Enforcement Personnel Attributable to Residential Development	84% ³⁹
Total Residential Floor Area (estimated for 2006)	346,428,634
Law Enforcement Personnel per 1,000 FT ² of Residential Floor Area	0.0025
Law Enforcement Personnel Households per 1,000 FT ² of Residential Floor Area	0.0019
Housing Affordability Gap per Residential FT ²	\$0.01

Table III.23: *Total Critical Employees Workforce Housing Assistance*, provides a summary of the total housing assistance needed for Lee County's critical employees per square foot of residential floor area built. The total need for critical employee assistance is \$0.11 per foot of residential development.

Table III.23 TOTAL CRITICAL EMPLOYEES WORKFORCE HOUSING ASSISTANCE	
Teachers – Housing Affordability Gap per Residential FT ²	\$0.09
Fire and Rescue Personnel – Housing Affordability Gap per Residential FT ²	\$0.01
Law Enforcement Personnel – Housing Affordability Gap per Residential FT ²	\$0.01
TOTAL CRITICAL EMPLOYEES HOUSING AFFORDABILITY GAP PER RESIDENTIAL FT²	\$0.11

4. Residential Mitigation

As is outlined above, the wages and salaries earned by a significant portion of Lee County's workforce that provides services to residential development (construction and operation and maintenance employees) are insufficient to allow these employees to obtain market housing. After determining the number and type of employees that provide service to residential development (construction employees and operations and maintenance employees), and how many of these employees cannot reasonably afford housing in Lee County, the next step is to identify the degree of affordable housing need created by residential development, and then outline mitigation options.

³⁹ The 84% attribution of law enforcement to residential development results from a Lee County survey of law enforcement call for service data conducted by Duncan Associates that identifies calls for service based on land use distributions. These data can be found online at <http://www.impactfees.com>

Table III.16: *Workforce Housing Need for Residential Development*, provides examples of affordable housing need for varying sized residential units, both in terms of actual affordable housing units (or a fraction thereof), and housing assistance. For example, the analysis demonstrates that a 10 lot subdivision of homes that are 3,000 square feet create a need for approximately 1.45 workforce housing units. The subsidy to address this need is \$15,410. Because affordable housing need is based on the size of the home, the formula will need to be applied to each residential unit, individually, based on its size (square footage).

**Table III.24:
WORKFORCE HOUSING NEED FOR RESIDENTIAL DEVELOPMENT⁴⁰**

Unit Size (FT ²)	Construction			Operations & Maintenance			Critical Employees			Total Affordable Housing Units Needed	Total Housing Assistance for Employees in Need of Affordable Housing
	Employees	Affordable Housing Units Needed for Constructio n Employees	Housing Assistance for Construction Employees in Need of Affordable Housing	Employees	Affordable Housing Units Needed for O&M Employees	Housing Assistance for O&M Employees in Need of Affordable Housing	Employees	Affordable Housing Units Needed for Critical Employees	Housing Assistance for Critical Employees in Need of Affordable Housing		
500	0.013	0.010	\$0	0.030	0.022	\$543	0.0085	0.0063	\$55	0.0383	\$598
1,000	0.026	0.019	\$0	0.036	0.027	\$667	0.0170	0.0127	\$111	0.0587	\$777
2,000	0.052	0.039	\$0	0.048	0.036	\$889	0.0339	0.0253	\$221	0.1003	\$1,110
3,000	0.077	0.058	\$0	0.066	0.049	\$1,210	0.0509	0.0380	\$332	0.1450	\$1,541
4,000	0.103	0.077	\$0	0.090	0.067	\$1,654	0.0678	0.0507	\$442	0.1947	\$2,096
5,000	0.129	0.096	\$0	0.122	0.091	\$2,247	0.0848	0.0633	\$553	0.2503	\$2,799
6,000	0.155	0.116	\$0	0.166	0.124	\$3,061	0.1018	0.0760	\$663	0.3160	\$3,724
7,000	0.181	0.135	\$0	0.227	0.170	\$4,197	0.1187	0.0887	\$774	0.3937	\$4,970
8,000	0.206	0.154	\$0	0.309	0.231	\$5,703	0.1357	0.1013	\$884	0.4863	\$6,587
9,000	0.232	0.173	\$0	0.421	0.314	\$7,752	0.1527	0.1140	\$995	0.6010	\$8,746
10,000	0.258	0.193	\$0	0.573	0.428	\$10,566	0.1696	0.1267	\$1,105	0.7477	\$11,671
12,000	0.310	0.232	\$0	1.063	0.794	\$19,602	0.2035	0.1520	\$1,326	1.1780	\$20,928

⁴⁰ Note that the data shown in Table III.24: *Workforce Housing for Residential Development*, are illustrative only. The precise formula shown on page 63 should be used to evaluate the demand created by individual dwellings.

a) Measuring Need

Based on the previous analysis outlined in this section, the degree of affordable housing need for residential development in Lee County is determined using the following formula.

Residential Construction Employees' Affordable Housing Need

$$\text{Construction Employees} = 0.026 * \text{Habitable Square Feet of Residential Unit} \div 1,000$$

$$\text{Needed Units for Construction Employee Household} = \text{Construction Employees} \div 1.339$$

$$\text{Construction Assistance Needed} = \text{Construction Employee Households} * \$0$$

Residential Operations and Maintenance (O&M) Employees' Affordable Housing Need

$$\text{Ln(O\&M Employees)} = -3.6468 + (0.000309 * \text{Unit Size})$$

$$\text{O\&M Employees} = \text{EXP}^{41}[\text{Ln(O\&M Employees)}]$$

$$\text{Units Needed for O\&M Employee Households} = \text{O\&M Employees} \div 1.339$$

$$\text{O\&M Assistance Needed} = \text{O\&M Employee Households Needing Assistance} * \$24,687$$

Residential Critical Employees' Affordable Housing Need

$$\text{Needed Units for Critical Employees Households} = \text{Habitable Square Feet of Residential Unit} * .01244$$

$$\text{Critical Employees Assistance Needed} = \text{Habitable Square Feet of Residential Unit} * \$0.11$$

TOTAL UNITS NEEDED = Units Needed for Construction Employee Household + Units Needed for O&M Employee Households + Needed Units for Critical Employees Households

TOTAL ASSISTANCE NEEDED = Construction Assistance Needed + Operations and Maintenance Assistance Needed + Critical Employees Assistance Needed

What this formula shows is that the degree of need for affordable housing can be determined either by an affordable housing unit (or fraction thereof) that needs to be built for residential development, or a housing assistance amount that needs to be paid to provide a sufficient amount of funds for those employees (or fraction thereof) in need of affordable housing.

⁴¹ The expression EXP stands for exponentiation. It is a spreadsheet command that converts natural logs (Ln) into linear integers. Mathematically, the numbers following the = expression EXP are powers of the constant e, which has a value of 2.71806. Thus, the number of O & M employees for this equation would be equal to:

$$\text{O\&M Employees} = -e \text{Ln(O\&M Employees)}$$

For a 3,000 square foot home, the number of O&M Employees would be equal to:

$$-3.6468 + (0.000309) * 3,000 = -2.719869$$

$$\text{O\&M Employees} = e^{-2.719869} = 0.06588 \text{ Employees}$$

b) Policy Options/Mitigation Options

A number of policy options are available to Lee County to address this affordable housing need created by residential development, once the methodology for determining need is developed and applied. They involve local and state funding, incentive zoning practices, as well as inclusionary or mandatory affordable housing requirements in the county's land development code. These policy options will be discussed in the Policy Options Memo that will follow this Support Study. Beyond the broad policy options to address affordable housing need, it should be emphasized in this Support Study that if affordable housing need is going to be effectively addressed as development occurs, the policy options should address need in one of four ways. These mitigation options include:

- Payment of funds (or a housing assistance fee) to make up the difference between the cost of housing in the county for the employee(s) in need of affordable housing and what the employee(s) can reasonably afford;
- Construction of affordable housing units for the employee in need;
- Conversion of existing market units to affordable units for the employee in need; or
- Providing land for affordable housing that is of equal value to the funds (housing assistance fee) needed.

C. NON-RESIDENTIAL DEVELOPMENT

The other basic sector in Lee County that employs workers is nonresidential development. This includes offices, retail establishments, industrial businesses, tourist/recreational services, institutional uses, and government facilities. Non-residential development places a demand on labor (the workforce) in three ways:

- The first is the construction of the building (i.e., construction employees for both residential and non-residential development).
- The second is the employees who work at the structure constructed by the builders (i.e., employees of the non-residential activity in the building).
- The third is the critical employees (Fire and Rescue Personnel and Law Enforcement Personnel) that provide public services to the non-residential development.

Construction employees construct the nonresidential buildings. All different types of employees work at the structure after the building is complete. Fire fighters, and police officers provide critical public services to the buildings and its employees. All three activities generate employment in Lee County, and because of the wage levels and existing housing prices, a number of these activities create a need for affordable housing. The demand for labor (employees) that non-residential development creates, and the demand these employees place on the need for affordable housing is outlined below.

1. Construction Employee Impacts

As is discussed in Section III.B.1: *Construction Impacts*, the construction, expansion, or renovation of buildings requires the employment of contractors and construction workers to do the work. The method used to assess the demand for affordable housing created by construction activities involves the following. First, the amount of construction authorized and built in Lee County over the past 5 years (measured in square feet) was determined from annual Lee County Property Appraiser data. Second, the number of construction workers involved in the construction of these buildings was determined using ES-202 data on local construction workers. Third, and based upon the amount of square footage built and the number of construction workers needed to construct these buildings, the actual amount of a building (in square feet) a construction employee builds in a year was determined.⁴² Tables summarizing this analysis are set out in

⁴² For purposes of this calculation, the analysis only includes employees that actually work in construction (rather than in related trades, such as cabinetry or electricians), since the related trades often work on repair jobs unrelated to the construction of new space. Those types of repairs are more accurately treated as the costs of operating and

Section III.B.1 (see Table III.1: *Residential and Non-Residential Construction (square feet), Lee County, 2000-2005* and Table III.2: *Total Construction, Total Employment, and Square Feet of Construction Built per Employee per Year, Lee County, 2001-2005*, which summarize this analysis.) These data illustrate that, on average, one construction employee directly involved in construction builds an average of 968.77 square feet of space in a year. Put another way, it takes an estimated 1.032 employee-years to construct 1,000 square feet of floor area.⁴³ Larger construction projects require more construction time (either more people working over the same period of time, or the same number of people working for a longer time) to complete. See Table III.25: *Square Feet of Construction Employee Per Year, Lee County, 2001-2005*.

Table III.25: SQUARE FEET OF CONSTRUCTION BUILT PER CONSTRUCTION EMPLOYEE PER YEAR, LEE COUNTY, 2001-2005			
Year	Total Construction	Total Employment	Square Feet Built per Year/Employee
2001	16,790,278	19,701	852.26
2002	23,065,455	21,092	1,093.56
2003	24,471,533	22,427	1,091.16
2004	25,254,890	26,251	962.05
2005	28,921,705	32,853	880.34
Average for '01-05	--	--	968.77

Source: Lee County Property Appraiser, May 2006 and Florida Agency for Workforce Innovation, Labor Market Statistics, <http://www.labormarketinfo.com/library/ces.htm>, downloaded May 5, 2006.

Based on this analysis of prior construction activities in Lee County, the actual amount of building space built by a construction employee annually is what is used to determine the amount of construction employee housing need created by a construction worker, annually.

Table III.26: *Construction Employment and Need for Housing*, sets out the number of employees needed to construct different size non-residential developments based on the fact that one construction employee builds 968.77 square feet of space annually (See the column in Table III.26 labeled "Employee Years to Construct Units"). Specifically, the table displays the number of employee years it takes to construct a building of a certain size. Construction employment is measured in employee years (employee years to construct units). Housing has no such time dimension. Employees will have a definable career and dwellings have an expected life. In estimating the demand construction employees place on a residential unit, it must be recognized that construction employees require

maintaining units once they are built, and are addressed in section III.B.2., *Operations and Maintenance Impacts*, on page 39.

⁴³ As is discussed earlier, this construction analysis aggregates residential and non-residential construction because the average wages and average number of employees needed to construct 1,000 square feet of a structure for both residential and non-residential development is not significantly different.

housing only during the period of actual construction of the home (even though they live in the community over their career). This must be accounted for in the analysis. The average construction worker career is 40 years. To account for this circumstance, the calculation of construction employee years to construct the unit is therefore divided by 40 to convert to the needed housing over the work career of the employee (See column in Table III.26 labeled “Employees Needed (Over Career of Employee)).

Next, to determine the needed number of residential units these construction employees demand in Lee County, the employee equivalent is then divided by the average number of employees per dwelling unit that exist today in Lee County (1.339⁴⁴) to estimate the fraction of a dwelling unit needed to house the employees engaged in residential construction of homes (See column labeled “Housing Units Needed for Employees”). As shown in Table III.26: *Construction Employment and Need for Housing in Lee County*, this calculation results in a little over 0.019 of an affordable workforce dwelling unit demanded for construction employees for every 1,000 square feet of construction.

<p style="text-align: center;"><i>Table III.26:</i> CONSTRUCTION EMPLOYMENT AND NEED FOR WORKFORCE HOUSING IN LEE COUNTY</p>			
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees
500	0.516	0.013	0.010
1,000	1.032	0.026	0.019
2,000	2.064	0.052	0.039
3,000	3.097	0.077	0.058
4,000	4.129	0.103	0.077
5,000	5.161	0.129	0.096
6,000	6.193	0.155	0.116
7,000	7.226	0.181	0.135
8,000	8.258	0.206	0.154
9,000	9.290	0.232	0.173
10,000	10.322	0.258	0.193
12,000	12.387	0.310	0.232

2. Post Construction Employee Impacts

The employment impacts on non-residential development, once the building is constructed, comes from the employees that work at the businesses/land uses that use the buildings. In determining the need for workforce housing created by nonresidential development, post-construction, the analysis went through four steps.

⁴⁴ See Appendix B: *Employees Per Household, Lee County*.

First, all nonresidential development was categorized into 10 land use categories, as defined by the Florida Department of Revenue codes. Each of the 10 land use categories, and the general uses included in the definition of each category are set out below.

Retail uses includes stores, department stores, supermarkets, shopping centers, restaurants, financial institutions, repair service shops, service stations, auto sales and repair, parking lots, and wholesale outlets.

Office uses includes professional and non-professional office buildings, professional services buildings, and insurance company offices.

Industrial uses include light manufacturing; lumber yards; warehousing and distribution terminals; equipment and materials storage facilities; and other similar uses.

Tourist/Recreational uses include theatres, auditoriums, nightclubs, bowling alleys, tourist attractions, camps, race tracks, golf courses, hotels, motels.

Institutional uses include churches; private schools; colleges; daycares; privately owned hospitals; homes for the aged; orphanages; clubs; cultural organizations; and similar uses.

Governmental uses include military facilities; parks and recreational areas; governmental office buildings; and other publicly owned facilities.

Other uses include utility, gas, and electric uses, mining, sewage disposal facilities, and other unknown uses.

Residential uses include all household living type uses, including but not limited to single family units, multi-family units, townhouses, and mobile homes.⁴⁵

Critical Employee uses includes uses that serve non-supervisory personnel that provide critical services to Lee County. These critical employees include public school teachers, firefighters, emergency medical technicians, paramedics, and police officers.

⁴⁵ Residential land uses are evaluated separately in Section III.B: *Residential Development* to determine the demand they create for workforce housing. Residential land uses are classified here in Steps 1 and 2 of the non-residential analysis to identify these land uses and ensure that they are not counted in the non-residential analysis. To keep from double counting the demand they create for workforce housing, residential land uses are not evaluated in Steps 3 and 4 of the non-residential analysis.

No Location includes employment for which there is not a specific location of work. For example, construction employment has no specific land use location.

Second, the employment and average household earnings in the county was assigned to one of the ten land use categories. This is done because the employment and wage data is categorized into the following industrial sectors: Natural Resources and Construction; Manufacturing; Wholesale Trade; Retail Trade; Trade, Transportation and Utilities; Information (e.g., printing, publishing, TV, etc.); Financial Activities; Professional and Business Services; Education and Health Services; Leisure and Hospitality; Other Services (which includes operation and maintenance employees); and Government.

The industrial sectors are assigned to the ten land use categories, based on the description of employment activities related to land uses and related principles found in the *Standard Industrial Classification Manual* (published by the US Government Printing Office); the classic *Land Use Information Systems* (Clawson and Stewart, by Resources for the Future, 1965); *Planner’s Estimating Guide: Projecting Land-Use and Facility Needs* (A. C. Nelson, Chicago: Planners Press, 2004); and *Standard Land Use Coding Manual*, (Urban Renewal Administration and Bureau of Public Roads, Government Printing Office, 1965). The percentage assignment of employment for each industry to the corresponding land use categories is set out in Table III.27: *Percentage Assignment of Industries to Land Use Categories, Lee County.*

Table III.27: PERCENTAGE ASSIGNMENT OF INDUSTRIES TO LAND USE CATEGORIES, LEE COUNTY										
	Government	Industrial	Institutional	Office	Other	Retail	Tourist	Residential	Critical Employee	No Location
Construction		15.0%		8.0%				8.33%		68.7%
Manufacturing		75.0%		15.0%	10.0%					
Wholesale Trade		70.0%		10.0%		20.0%				
Retail Trade						90.0%	10.0%			
T, T & U	15.0%	50.0%		15.0%	10.0%	10.0%				
Information		35.0%		45.0%	10.0%	10.0%				
Financial Activities		10.0%	21.1%	50.4%		12.5%		5.95%		
Prof. & Bus Services		10.0%	7.4%	20.0%	10.0%	10.0%	10.0%	22.60%		10.0%
Ed. & Health Services	17.2%	5.0%	17.5%	10.0%	10.0%		5.0%	18.20%	12.06%	5.0%
Leisure & Hospitality					10.0%	20.0%	70.0%			
Other Services		12.5%	12.5%	9.0%			12.5%	50.95%		2.6%
Government	52.5%			10.0%				18.75%	18.75%	
Mining, Agricultural & Other										100.0%

Then, using the percentage assignments of industry employment to land use classifications, the number of employees for each industry is translated into employees per land use categories. See Table III.28: *Estimated Industry Employment by Land Use Categories, Lee County*. Average household earnings were then calculated for each land use by multiplying the number of employees per land use times the 2006 estimated household earnings based upon the industry in which the employee is working, and then dividing the product by the number of workers estimated for that land use. (See Table III.28.)

**Table III.28:
ESTIMATED INDUSTRY EMPLOYMENT BY LAND USE CATEGORIES, LEE COUNTY**

	Government	Industrial	Institutional	Office	Other	Retail	Tourist	Residence	Critical Employees	No Location	TOTALS
Construction	0	4,928	0	2,628	0	0	0	2,738	0	22,570	32,864
Manufacturing	0	5,085	0	1,017	678	0	0	0	0	0	6,780
Wholesale Trade	0	4,416	0	631	0	1,262	0	0	0	0	6,309
Retail Trade	0	0	0	0	0	30,908	3,434	0	0	0	34,342
Trade, Transportation, and Utilities	873	2,909	0	873	582	582	0	0	0	0	5,817
Information	0	1,435	0	1,845	410	410	0	0	0	0	4,099
Financial Activities	0	1,314	2,772	6,621	0	1,642	0	782	0	0	13,131
Professional & Business Services	0	2,596	1,921	5,192	2,596	2,596	2,596	5,867	0	2,596	25,961
Education & Health Services	6,570	1,910	6,685	3,820	3,820	0	1,910	6,952	4,605	1,910	38,182
Leisure & Hospitality	0	0	0	0	2,646	5,293	18,524	0	0	0	26,463
Other Services	0	864	864	622	0	0	864	3,520	0	180	6,913
Government	5,604	0	0	1,067	0	0	0	2,001	2,001	0	10,673
Mining, Agricultural, & Other	0	0	0	0	0	0	0	0	0	1,873	1,873
TOTAL	13,047	25,456	12,242	24,316	10,732	42,692	27,328	21,861	6,606	29,129	213,407
Average Individual Earnings	\$42,904	\$39,100	\$43,319	\$42,905	\$36,156	\$29,418	\$24,566	\$39,249	\$42,965	\$29,546	\$34,893
Average Household Earnings	\$55,581	\$51,778	\$55,997	\$55,582	\$48,833	\$42,095	\$37,243	\$51,926	\$55,642	\$42,224	\$47,570

Source: Standard Industrial Classification Manual by the U.S. Government Printing Office. Land Use Information Systems by Clawson and Stewart, published by Resources for the Future in 1964. Planner's Estimating Guide: Projecting Land-Use and Facility by A.C. Nelson

Third, the amount of building space (in square feet) provided, on average, per employee, was determined for each land use category. Using data obtained from the Lee County Property Appraiser on the amount of development built (in square feet) within each land use category, the aggregate square feet of space in the county for each land use category was determined, from 2001-2005. This data was then compared over time to the

number of employees in each land use category (See Table III.29: *Estimated Industry Employment by Land Use Categories, Lee County*) to determine the amount of floor area (in square feet), on average, provided for each employee by each land use category. This analysis is outlined in Table III.29: *Floor Area and Employment by Land Use Category; Floor Area per Employee, Lee County, 2001-2005*.⁴⁶

⁴⁶ The remaining four land use categories are not included for the following reasons. Residential land uses and critical employees are evaluated separately in terms of the demand for affordable housing they create. The “Other uses” land use category includes unknown land uses. Employment identified as having “No Location” cannot be attributed to a specific land use category (such as construction or agricultural employment).

**Table III.29:
FLOOR AREA AND EMPLOYMENT BY LAND USE TYPE, FLOOR AREA PER EMPLOYEE,
LEE COUNTY, 2001 - 2006**

	2001	2002	2003	2004	2005	Typical
Government						
Floor Area	15,701,292	16,530,959	17,814,928	19,173,939	19,683,359	
Employment	11,253	11,021	11,181	12,356	13,047	
FT ² per Employee	1,395.27	1,499.88	1,593.25	1,551.82	1,508.69	1,510.48
Industrial						
Floor Area	20,322,192	21,939,044	23,489,707	24,592,109	25,247,499	
Employment	20,857	20,522	19,648	22,783	25,456	
FT ² per Employee	974.34	1,069.06	1,195.52	1,079.42	991.81	1,057.88
Institutional						
Floor Area	11,787,083	12,285,324	13,082,071	13,508,989	14,953,763	
Employment	10,186	10,223	10,863	11,326	12,242	
FT ² per Employee	1,157.13	1,201.78	1,204.30	1,192.71	1,221.55	1,196.53
Office						
Floor Area	17,418,543	18,108,766	18,859,258	19,141,785	19,791,794	
Employment	19,864	20,071	20,757	21,991	24,316	
FT ² per Employee	876.91	902.24	908.55	870.44	813.95	872.16
Retail						
Floor Area	21,097,848	21,563,970	22,687,970	22,801,124	23,970,458	
Employment	36,389	37,057	38,147	40,293	42,692	
FT ² per Employee	579.79	581.92	594.76	565.89	561.47	576.23
Tourist						
Floor Area	7,033,921	7,907,413	7,904,751	7,933,956	8,124,856	
Employment	21,783	23,296	24,523	25,726	27,328	
FT ² per Employee	322.91	339.44	322.35	308.40	297.31	317.19
Total						
Floor Area	105,949,030	111,964,072	119,059,464	124,719,150	133,361,587	
Employment	171,731	175,288	183,621	197,054	213,407	
FT ² per Employee	616.95	638.74	648.40	632.92	624.92	632.29
Employees per 1,000 FT ²	1.621	1.566	1.542	1.580	1.600	1.582

SOURCE: Lee County Property Appraiser and Table III.28, Assignment of Industries to Land Use Categories.

This data reveals time trends for employment space within some of the land use categories. The amount of floor area provided per employee for the Government, Industrial and Institutional land use categories show a slight increase in space per employee over time. Governmental space per employee increased approximately 23 square feet per year. Industrial floor area increased approximately 17 square feet per employee per year; and Institutional floor area grew approximately by 8 feet per employee per year. Office, retail, and tourist floor areas per employee remained stable over the five year period. In summary, the analysis shows that the square feet per employee ratios are generally stable or increased over the time period for each land use category, with some fluctuations. The typical square footage

per employee for each land use category is identified in the last column, and provides a good estimate in 2006 for the amount of square feet provided per employee, by land use category.

There have been a number of employer surveys undertaken in Florida to project employees per 1,000 square feet of floor area. These surveys present a check for the employment based estimates shown above. Table III.30: *Employment Per 1,000 Square Feet Survey Results and Estimate*, contrasts the two sets of estimates. This analysis will use the employment based estimates or survey estimates, whichever is less in order to project employment within Lee County.

<i>Table III.30</i> EMPLOYMENT PER 1,000 FT² SURVEY RESULTS AND ESTIMATE			
Land Use	Employer Surveys	Lee County Estimates	Use
Bar/restaurant	12.600	1.735	1.735
Education	1.300	0.836	0.836
Finance/banking	7.100	1.147	1.147
Government/Transportation/Public utilities	1.100	0.662	0.662
Lodging/Hotel - 0.7 per Room	1.280	3.153	1.280
Professional Services	2.700	2.700	2.700
Personal/Commercial Services	5.200	1.147	1.147
Real Estate/Property Management	2.100	2.100	2.100
Retail Sales	1.900	1.735	1.735
Recreation/Entertainment	3.300	3.153	3.153
Other	0.600	0.600	0.600
Manufacturing	2.300	0.945	0.945
Overall	2.500	1.582	1.582

SOURCE: RRC, Incorporated, 2006.

Finally, and based on the previous analyses, the demand for workforce housing units created by a specific amount (1,000 square feet) of net floor area of development was determined, by land use category. This was done in the following way, which is set out in Table III.31: *Non-Residential Post-Construction Housing Need per 1,000 Square Feet*. First, the number of employees employed per 1,000 square feet of space was determined, by land use category, based on the analysis conducted in Table III.28. Then, based on the fact that each household in the county includes 1.339 employees, the actual number of workforce housing units needed per 1,000 square feet of development was determined (“Housing Units Needed for Employees” column in Table III.31).⁴⁷

⁴⁷ See Appendix B: *Employees per Household, Lee County*, for the calculation of employees per household.

Table III.31: NON-RESIDENTIAL POST-CONSTRUCTION WORKFORCE HOUSING NEED PER 1,000 SQUARE FEET			
Land Use	Household Earnings	Employees / 1,000 Square Ft	Housing Units Needed for Employees/ 1,000 Square Ft
Governmental	\$55,581	0.662	0.494
Industrial	\$51,778	0.945	0.706
Institutional	\$55,997	0.836	0.624
Office	\$55,582	1.147	0.856
Retail	\$42,095	1.735	1.296
Tourist	\$37,243	1.280	0.956

3. Impacts on Critical Employees

As is discussed earlier, the final group of workforce members for which non-residential development creates the need for affordable workforce housing are critical employees. Critical employees for non-residential development include:

- Fire & Rescue Personnel⁴⁸
 - Firefighters
 - Emergency Medical Technicians
 - Paramedics
- Law Enforcement⁴⁹
 - Police officers and Sheriff’s deputies
 - Corrections (jail) deputies

These critical employees are important to the overall functioning of the community. As is discussed earlier in this Study on the impact of residential development on workforce housing needs, in allocating the need for workforce housing for Fire and Rescue personnel and Law

⁴⁸ Fire and rescue personnel include the firefighters, emergency medical technicians, and paramedics employed by 17 of the 21 fire districts located in Lee County. This includes only full-time fire and rescue personnel, and does not include personnel serving in administrative or supervisory capacities. The 17 fire districts include: Cape Coral, Lee County, Alva, Fort Myers, Pine Island, North Fort Myers, San Carlos Park, Estero, Boca, Caloosahatchee, Fort Myers Shores, Fort Myers Beach, South Trail, Bonita Springs, Sanibel, Useppa, and Lehigh Fire Districts. Data was not available for the remaining four fire districts in Lee County.

⁴⁹ Law enforcement personnel consist of all police officers, sheriff’s deputies, and correctional deputies employed by the four law enforcement jurisdictions in Lee County. This includes only full-time law enforcement officers, and does not include personnel serving in administrative or supervisory capacities. The four law enforcement jurisdictions include: Cape Coral, Lee County, Fort Myers and Sanibel.

Enforcement personnel created by new development, need is attributed to both residential and nonresidential development based on the amount (square feet) of development being served (residential versus nonresidential development).

In the analysis, the number of critical employees included does not include personnel who support or supervise. Fire chiefs and police captains are not included; the focus is on those providing direct services to the citizens of Lee County.

Tables III.32, III.33, and III.34 present the critical employee data used to determine the demand or need created for workforce housing for Fire and Rescue personnel and Law Enforcement personnel from non-residential development. Table III.32: *Non-Residential Critical Employees – Fire and Rescue*, shows the demand created for workforce housing for Fire and Rescue personnel by new non-residential development. This is calculated by first applying the percent of personnel attributable to non-residential development to the total number of Fire and Rescue personnel, then dividing the product by the total non-residential floor area estimated for 2006. This results in 0.0012 Fire and Rescue personnel per 1,000 square feet of non-residential development. To determine the number of workforce housing units for Fire and Rescue personnel needed per 1,000 square feet of non-residential development, the Fire and Rescue personnel per 1,000 square feet of non-residential development is divided by the employees per household factor (1.339)⁵⁰. This results in the need for 0.0009 of a workforce housing unit for Fire and Rescue personnel per 1,000 square feet of non-residential development. See Table III.32.

<i>Table III.32:</i> NON-RESIDENTIAL CRITICAL EMPLOYEES – FIRE AND RESCUE	
Fire and Rescue Personnel	
Total Number of Fire and Rescue Personnel (2006)	975
Percent of Personnel Attributable to Non-Residential Development	59% ⁵¹
Total Non-Residential Floor Area (estimated for 2006)	488,432,658
Fire/Rescue Personnel per 1,000 FT ²	0.0012
Workforce Housing Units Needed per 1,000 FT ²	0.0009

Table III.33: *Non-Residential Critical Employees – Law Enforcement*, shows that the demand created for workforce housing for Law Enforcement personnel by new non-residential development. This is

⁵⁰ See Appendix B: *Employees Per Household, Lee County*.

⁵¹ The 59% attribution of fire personnel to non-residential development is derived from 59% of all floor area in Lee County being identified as a non-residential land use.

calculated by first applying the percent of personnel attributable to non-residential development to the total number of law enforcement personnel, then dividing the product by the total non-residential floor area estimated for 2006. This results in 0.0005 Law Enforcement personnel per 1,000 square feet of residential development built. To determine the number of workforce housing units for Law Enforcement personnel needed per 1,000 square feet of non-residential development, the Law Enforcement personnel per 1,000 square feet of residential development is divided by the employees per household factor (1.339)⁵². This results in the need for 0.0004 of a workforce housing unit for Law Enforcement personnel per 1,000 square feet of non-residential development built. See Table III.33.

Table III.33: NON-RESIDENTIAL CRITICAL EMPLOYEES – LAW ENFORCEMENT	
Law Enforcement Personnel	
Total Number of Personnel (2006)	1,026
Percent of Personnel Attributable to Non-Residential Development	16% ⁵³
Total Non-Residential Floor Area (estimated for 2006)	488,432,658
Law Enforcement Personnel per 1,000 FT ²	0.0003
Workforce Housing Units Needed per 1,000 FT ²	0.0002

A summary of workforce housing need created by non-residential development for Fire and Rescue Personnel and Law Enforcement personnel is outlined in Table III.34: *Non-Residential Critical Employees – All Categories*. In total, critical employees demand 0.0013 workforce housing units per 1,000 square feet of new non-residential development built.

Table III.34 NON-RESIDENTIAL CRITICAL EMPLOYEES – ALL CATEGORIES		
Per 1, 000 Square Feet of Non-Residential Development	Employees	Units
Fire and Rescue Personnel Needed	0.0012	
Workforce Housing Unit Needs for Fire and Rescue Personnel Households		0.0009
Law Enforcement Personnel Needed	0.0003	
Workforce Housing Unit Needs for Law Enforcement Personnel Households		0.0002
TOTAL CRITICAL EMPLOYEES NEEDED	0.0015	
TOTAL WORKFORCE HOUSING UNITS NEEDED FOR CRITICAL EMPLOYEES		0.0011

⁵² See Appendix B: *Employees Per Household, Lee County*.

⁵³ The 16% attribution of law enforcement to non-residential development results from a Lee County survey of law enforcement call for service data conducted by Duncan Associates that identifies calls for service based on land use distributions. These data can be found online at <http://www.impactfees.com>

4. Assistance to Address Workforce Housing Need

As outlined in the residential mitigation fee section (III.B.3: *Assistance to Address Workforce Housing Need*), housing in Lee County has become unaffordable to not only low-wage earning households, but also to households earning the median household income and higher. To adequately address the different types of households that will need workforce housing assistance in the county, three Workforce Housing Categories are developed in this Study (see discussion in Section III.B.3, *Assistance to Address Workforce Housing Need*). The intent of the categories is to identify the type of unit that is appropriate for the level of income identified in each of the three categories. For example, it is logical that a household earning \$60,000 lives in a different and more expensive house than a household earning \$30,000. These three categories address this issue. They also address the fact that not all households earning the same income have the same housing needs. For example, two households may earn the median income, but have a different number of household members and require a different number of bedrooms in a unit. These categories are used to better assess workforce housing mitigation at a level that is reflective of the different income categories and housing needs found in the community.

The first step in determining the three Workforce Housing Categories is to determine the type of housing that will be provided. Three prototypical housing types were developed using local cost and square footage data on existing affordable units built in the county, other communities in Florida, and other resort communities across the nation. These three Workforce Housing Types identify the size of an appropriate workforce housing unit for various income categories, the type of construction, and the cost per square foot to construct the unit based upon local construction costs. Table III.35: *Workforce Housing Types, Lee County*, shows the size, type, and cost to construct these prototypical units. The three units differ from each other primarily in terms of the size of the units. The size of the prototypical units includes all areas of a home that are air conditioned. The cost per square foot is the same for all units. The cost shown is a turn-key cost of production under prevailing market conditions.

TABLE III.35: WORKFORCE HOUSING TYPES, LEE COUNTY ⁵⁴			
	Type A	Type B	Type C
Unit Size (square footage)	750	1,025	1,250
Construction Type	Traditional	Traditional	Traditional
Cost per FT	\$200	\$200	\$200
Construction Cost	\$150,000	\$205,000	\$250,000

Because there are factors other than housing cost that determine an appropriate type of housing for a given household (such as number of household members, location, and other personal preferences), the three Workforce Housing Types (Type A, Type B, and Type C) are distributed to three Workforce Housing Categories (Categories 1, 2, and 3). These categories reflect the fact that while a lower income household will likely purchase or rent a house that costs less, the household will also need to provide adequate space for all household members. As shown below in Table III.36: *Distribution of Workforce Housing Categories, Lee County*, each category is a weighted average of a distribution of the three types of housing identified in Table III.35. This assumes that there is a mix of the three unit types, at varying degrees, in each of the three categories. The average price of housing and the income needed to afford each category of housing reflect the mix of housing types included within each category. Table III.36: *Distribution of Workforce Housing Categories, Lee County*, outlines the mix of housing types in each category.

TABLE III.36: DISTRIBUTION OF WORKFORCE HOUSING CATEGORIES, LEE COUNTY			
	Category 1	Category 2	Category 3
Type A	80%	25%	10%
Type B	10%	50%	10%
Type C	10%	25%	80%
Average Cost/Price	\$165,500	\$202,500	\$235,500
Household Income Needed	\$48,459	\$59,632	\$69,598

These Workforce Housing Categories are then assigned to income ranges. As shown in Table III.37: *Workforce Housing Categories by Income Range*, Category 1 housing is appropriate for households earning 90 percent of area median income or below. Category 2 housing is appropriate for households earning between 90 percent and 125 percent

⁵⁴ Each of the three Workforce Housing Categories were developed under the assumption that workforce housing units created as a result of a mitigation program that utilizes this workforce housing methodology would develop traditional (versus modular) residential housing units. Therefore, the cost to develop these units factors in the housing type and housing construction assumptions.

of area median income. Category 3 housing is appropriate for households earning between 125 and 140 percent of area median income.

Table III.37:
WORKFORCE HOUSING CATEGORIES BY INCOME RANGE

	Percent of Median Income	From	To
Category 1	90% of Median & Under	--	to \$50,400
Category 2	90% - 125% of Median	\$50,401	to \$61,600
Category 3	125% - 140% of Median	\$61,601	to \$78,400

Next, and for the purposes of measuring the assistance needed to make units affordable to members of the workforce at different income levels, the household income levels were evaluated for the different members of the workforce, and then matched to the appropriate Workforce Housing Categories. The household income levels were matched with the Workforce Housing Categories that most closely aligned with the incomes levels. For example, given that the average household income for governmental workers is \$55,581, and the income needed to afford Category 2 housing is \$50,401 to \$61,600, governmental workers are aligned with the Category 2 Workforce Housing Category. The results of this analysis area are shown in Table III.38: *Workforce Housing Categories for Non-Residential Land Uses*.

Table III.38:
WORKFORCE HOUSING CATEGORIES FOR NON-RESIDENTIAL LAND USES

	Household Earnings	Workforce Housing Category
Construction ⁵⁵	\$50,773	Category 1
Governmental	\$55,581	Category 2
Industrial	\$51,778	Category 2
Institutional	\$55,997	Category 2
Office	\$55,582	Category 2
Retail	\$42,095	Category 1
Tourist	\$37,243	Category 1

a) Workforce Housing Assistance for Construction Employee Households

Once the cost for each of the categories of workforce housing are determined, the next step is to identify the amount of assistance that an employee household requires to afford a prototypical unit within their income category. As is discussed previously, according to the employment and household earnings for the construction industry in Lee County, individual annual employee earnings are \$38,096, and annual

⁵⁵ While the household earnings for construction workers (\$50,773) is slightly higher than the maximum household earnings for a Category 1 unit (\$50,400), it is close enough in comparison that construction workers are assigned to Category 1.

household earnings are \$50,773. Based on these earnings, a construction employee household could afford to spend \$173,404 for housing. As mentioned in the previous section and based upon their income, construction employee households qualify for Category 1 workforce housing that is estimated to cost \$165,500. Given the construction employee household earnings and the maximum housing cost that a construction employee household could afford (\$173,404), Category 1 level of workforce housing requires \$0 of workforce housing assistance per worker household to afford a unit. In other words, the difference between the cost of a Category 1 house (\$165,500) and the maximum housing cost that a construction employee household can afford (\$173,404) is the workforce housing assistance needed for a construction employee household to afford a unit (\$0). See Table III.39: *Housing Affordability for Construction Employees* shown below.

Table III.39: HOUSING AFFORDABILITY FOR CONSTRUCTION EMPLOYEES	
Construction Earnings	\$38,096
Employees per Household ⁵⁶	1.339
Construction Employee Household Earnings	\$50,773
Maximum Housing Cost for Construction Employee Household ⁵⁷	\$173,404
Available Housing Cost (Category 1)	\$165,500
Assistance (Subsidy) per Units Needed for Construction Employee Household	\$0

The housing assistance for construction employees, by unit size, is shown in Table III.40: *Construction Employment and Need for Workforce Housing in Lee County*.

Table III.40: CONSTRUCTION EMPLOYMENT AND NEED FOR WORKFORCE HOUSING, LEE COUNTY				
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees	Housing Assistance Needed per Unit
500	0.516	0.013	0.010	\$0
1,000	1.032	0.026	0.019	\$0
2,000	2.064	0.052	0.039	\$0
3,000	3.097	0.077	0.058	\$0

⁵⁶ See Appendix B: *Employees per Household, Lee County*, for an explanation of the calculation used to result in this figure.

⁵⁷ The maximum housing cost for a construction employee household is calculated by dividing the construction employee household earnings (\$50,773) by the income ratio for determining housing affordability (29.28%).

Table III.40: CONSTRUCTION EMPLOYMENT AND NEED FOR WORKFORCE HOUSING, LEE COUNTY				
Building Size	Employee Years to Construct Units	Employees Needed (Over Career of Employee)	Housing Units Needed for Employees	Housing Assistance Needed per Unit
4,000	4.129	0.103	0.077	\$0
5,000	5.161	0.129	0.096	\$0
6,000	6.193	0.155	0.116	\$0
7,000	7.226	0.181	0.135	\$0
8,000	8.258	0.206	0.154	\$0
9,000	9.290	0.232	0.173	\$0
10,000	10.322	0.258	0.193	\$0

b) Workforce Housing Assistance for Post-Construction Employee Households

As is outlined earlier, based on the household earnings identified in Table III.28, the employees in the post-construction land use categories were aligned with the Workforce Housing Categories. This alignment is identified in Table III.41: *Workforce Housing Categories for Non-Residential Land Uses*.

Table III.41: WORKFORCE HOUSING CATEGORIES FOR NON-RESIDENTIAL LAND USES		
	Household Earnings	Workforce Housing Category
Governmental	\$55,581	Category 2
Industrial	\$51,778	Category 2
Institutional	\$55,997	Category 2
Office	\$55,582	Category 2
Retail	\$42,095	Category 1
Tourist	\$37,243	Category 1

According to this data, the household earnings for each non-residential post-construction employment in Lee County are \$55,581 for governmental land uses, \$51,778 for industrial land uses, \$55,997 for institutional land uses, \$55,582 for office land uses, \$42,095 for retail land uses, and \$37,243 for tourist land uses. Based on these earnings, Table III.42: *Post-Construction Housing Affordability Gap by Land Use, Lee County*, outlines the amount each employee household could afford to spend for housing (see the row labeled "Affordability Limit"), by land use categories, and the shortage, or housing assistance needed to address the shortage, per square feet of development.

Table III.42: POST-CONSTRUCTION HOUSING AFFORDABILITY GAP BY LAND USE, LEE COUNTY						
	Non-Residential FT ² per Employee	Income per Household	Affordability Limit ⁵⁸	Housing Cost for Prototypical Unit	Housing Assistance Needed	Assistance Needed per FT ² of Non-Residential Development
Government	1,510	\$55,581	\$189,826	\$202,500	\$12,674	\$6.27
Industrial	1,058	\$51,778	\$176,836	\$202,500	\$25,664	\$18.12
Institutional	1,197	\$55,997	\$191,245	\$202,500	\$11,255	\$7.03
Office	872	\$55,582	\$189,830	\$202,500	\$12,670	\$10.85
Retail	576	\$42,095	\$143,767	\$165,500	\$21,733	\$28.17
Tourist	781	\$37,243	\$127,195	\$165,500	\$38,305	\$36.61

The difference between the cost to develop the prototypical unit (based on the Workforce Housing Unit Category) and the amount a household could reasonably afford to pay for housing is the shortage, or assistance needed to acquire housing (see “Housing Assistance Needed” in Table III.42). For example, tourist employees qualify for Category 1 workforce housing, which costs \$165,500. Tourism employee households earn on average \$37,243 and can afford to purchase a house priced at \$127,195. The difference between these categories is the shortage or assistance needed to afford a unit -- \$38,305. If this workforce housing assistance were to be put into terms of the housing assistance needed per square foot of new tourist development built, it results in \$36.61 per square foot of development (see “Assistance Needed Per FT² of Non-Residential Development” in Table III.42). Table III.43: *Post Construction Housing Affordability Gap by Land Use, Lee County*, shows the employees, employee households, and housing assistance needed based on 1,000 square feet of development for each non-residential land use.

Table III.43: POST CONSTRUCTION HOUSING AFFORDABILITY GAP BY LAND USE, LEE COUNTY			
	per 1,000 FT ²		Gap per 1,000 FT ²
	Employees	Households	
Government	0.662	0.494	\$6,261
Industrial	0.945	0.706	\$18,119
Institutional	0.836	0.624	\$7,023
Office	1.147	0.856	\$10,846
Retail	1.735	1.296	\$28,167
Tourist	1.280	0.956	\$36,620

⁵⁸ The maximum housing cost for an employee household is calculated by dividing the employee household earnings by the income ratio for determining housing affordability (29.28%).

c) Workforce Housing Assistance for Critical Employees

Tables III.44, III.45, and III.46 present the critical employee salaries and workforce housing assistance analysis. This information presents the average salaries and amount of housing that each type of critical employee can afford and compares that to the appropriate category of workforce housing to determine the affordability gap for each type of critical employee.

Table III.44: *Non-Residential Fire and Rescue Workforce Housing Assistance*, presents the workforce housing assistance data for Fire and Rescue personnel. Based upon 2006 data taken from 17 of the 21 fire districts in Lee County, the average fire and rescue worker earns \$52,463 annually. This equates to a household income of \$65,140. With this income, fire and rescue employee households can afford to purchase a home priced at \$222,471. Based on their income, fire and rescue employee households qualify for Category 3 workforce housing that is estimated to cost \$235,500. The difference between what these fire and rescue employee households can afford (\$222,471) and the cost of Category 3 workforce housing (\$235,500) creates an affordability gap of \$13,029. Because there is a need for 0.0009 workforce housing units for Fire and Rescue personnel per 1,000 square feet of non-residential floor area built in Lee County, the assistance needed for fire and rescue personnel households to be able to afford a Category 3 workforce home is equal to \$0.01 per foot of residential floor area built. See Table III.44.

<i>Table III.44</i> NON-RESIDENTIAL FIRE AND RESCUE PERSONNEL WORKFORCE HOUSING ASSISTANCE	
Fire and Rescue Personnel	
Fire and Rescue Salary - Individual	\$52,463
Fire and Rescue Salary - Household	\$65,140
Household Affordability Limit	\$222,471
Category 3 Housing Cost	\$235,500
Affordability Gap	\$13,029
Estimated Number of Fire and Rescue Personnel in Lee County	975
Percent of Fire and Rescue Personnel Attributable to Non-Residential Development	59%
Total Non-Residential Floor Area (estimated for 2006)	488,432,658
Fire and Rescue Personnel per 1,000 FT ² of Non-Residential Floor Area	0.0012
Fire and Rescue Personnel Households per 1,000 FT ² of Non-Residential Floor Area	0.0009
Housing Affordability Gap per Non-Residential FT ²	\$0.01

Table III.45: *Non-Residential Law Enforcement Workforce Housing Assistance*, presents the workforce housing assistance data for Law Enforcement personnel. Based upon 2006 data taken from the four Law Enforcement entities in Lee County, the average Law Enforcement worker earns \$44,667 annually. This equates to a household income of \$57,345. With this income, law enforcement employee households can afford to purchase a home priced at \$195,849. Based on their income, law enforcement employee households qualify for Category 2 workforce housing that is estimated to cost \$202,500. The difference between what these law enforcement employee households can afford (\$195,849) and the cost of Category 2 workforce housing (\$202,500) creates an affordability gap of \$6,651. Because there is a need for 0.0004 workforce housing units for Law Enforcement personnel per 1,000 square feet of non-residential floor area built in Lee County, the assistance needed for Law Enforcement personnel households to be able to afford a Category 2 workforce home is equal to \$0.00 per foot of residential floor area built. See Table III.45.

<i>Table III.45</i> NON-RESIDENTIAL LAW ENFORCEMENT PERSONNEL WORKFORCE HOUSING ASSISTANCE	
Law Enforcement Personnel	
Law Enforcement Salary - Individual	\$44,667
Law Enforcement Salary - Household	\$57,345
Household Affordability Limit	\$195,849
Category 2 Housing Cost	\$202,500
Affordability Gap	\$6,651
Estimated Number of Law Enforcement Personnel in Lee County	1,026
Percent of Law Enforcement Personnel Attributable to Non-Residential Development	16%
Total Non-Residential Floor Area (estimated for 2006)	488,432,658
Law Enforcement Personnel per 1,000 FT ² of Non-Residential Floor Area	0.0003
Law Enforcement Personnel Households per 1,000 FT ² of Non-Residential Floor Area	0.0002
Housing Affordability Gap per Non-Residential FT ²	\$0.002

Table III.46: *Total Non-Residential Critical Employees Workforce Housing Assistance*, provides a summary of the total housing assistance needed for Lee County’s critical employees per square foot of non-residential floor area built. The total need for critical employee assistance is \$0.012 per foot of non-residential development.

<i>Table III.46</i> TOTAL NON-RESIDENTIAL CRITICAL EMPLOYEES WORKFORCE HOUSING ASSISTANCE	
Fire and Rescue Personnel – Housing Affordability Gap per Non-Residential FT ²	\$0.01
Law Enforcement Personnel – Housing Affordability Gap per Non-Residential FT ²	\$0.002
TOTAL CRITICAL EMPLOYEES HOUSING AFFORDABILITY GAP PER NON-RESIDENTIAL FT²	\$0.012

5. Mitigation for Non-Residential development

As is outlined above, the wages and salaries earned by a significant portion of Lee County’s workforce that works in the businesses and related entities that make up non-residential development are insufficient to allow these employees to obtain market housing at a price they can reasonably afford. After determining the number and type of employees that serve non-residential development (construction, post-construction, and critical services employees), and how many of these employees cannot reasonably afford housing in Lee County, the next step is to identify the degree of workforce housing need created by non-residential development, and then outline mitigation options.

Based on the previous analysis, Table III.47: *Need for Workforce Housing Created by Non-Residential Development*, provides examples of workforce housing need for varying sized non-residential buildings, both in terms of the need for workforce housing units (or a fraction thereof), and workforce housing assistance. Because the workforce housing need for non-residential development is based on the size and type of the non-residential development, the formula for the appropriate land use will need to be applied to each non-residential development, individually, based on its size (square footage).

Table III.47: NEED FOR WORKFORCE HOUSING CREATED BY NON-RESIDENTIAL DEVELOPMENT								
Land Use	Construction		Post-Construction		Critical Workers		Total Workforce Housing Units Needed	Total Workforce Housing Assistance Needed
	Workforce Housing Units Needed	Workforce Housing Assistance Needed	Workforce Housing Units Needed	Workforce Housing Assistance Needed	Workforce Housing Units Needed	Workforce Housing Assistance Needed		
Per 1,000 Square Feet								
Governmental	0.019	\$0	0.494	\$6,261	0.0011	\$12.98	0.5141	\$6,274
Industrial	0.019	\$0	0.706	\$18,119	0.0011	\$12.98	0.7261	\$18,132
Institutional	0.019	\$0	0.624	\$7,023	0.0011	\$12.98	0.6441	\$7,036
Office	0.019	\$0	0.856	\$10,846	0.0011	\$12.98	0.8761	\$10,859
Retail	0.019	\$0	1.296	\$28,167	0.0011	\$12.98	1.3161	\$28,180
Tourist	0.019	\$0	0.956	\$36,620	0.0011	\$12.98	0.9761	\$36,633

a) Measuring Need

Based on the previous analysis outlined in this section, the degree of workforce housing need for non-residential development in Lee County is determined using the following formulae, by land use category.

Non-Residential Construction Employees' Workforce Housing Need

Construction Employees = 0.026 * Square Feet of Non-Residential Development ÷ 1,000
Needed Units (Construction Employee Households) = Construction Employees ÷ 1.339
Construction Assistance Needed = Needed Units (Construction Employee Households) * \$0

Governmental Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Governmental Employees =
(0.494 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$6.27 + \$0.012)

Industrial Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Industrial Employees =
(0.706 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$18.12 + \$0.012)

Institutional Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Institutional Employees =
(0.624 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$7.03 + \$0.012)

Office Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Office Employees =
(0.856 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$10.85 + \$0.012)

Retail Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Retail Employees =
(1.296 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$28.17 + \$0.012)

Tourist Land Use Employees' Workforce Housing Need

Workforce Housing Units Needed for Industrial Employees =
(0.956 * Square Feet of Development) ÷ 1,000
Assistance Needed = Square Feet of Development * (\$36.61 + \$0.012)

TOTAL UNITS NEEDED = Units Needed for Construction Employee Households + Units Needed for Employees (by Appropriate Land Use Category)

TOTAL ASSISTANCE NEEDED = Construction Assistance Needed + Assistance Needed for Units by Appropriate Land Use Category

What these formulae show is that the degree of need for workforce housing from non-residential development is determined either by workforce housing unit(s) (or a fraction thereof), or a workforce housing assistance amount that is paid to provide funds for those employees (or fraction thereof) in need of workforce housing.

b) Policy Options/Mitigation Options

A number of policy options are available to Lee County to address this affordable housing need created by non-residential development, once the methodology for determining need is developed and applied. They

involve local and state funding, incentive zoning practices, as well as mandatory affordable housing requirements in the county's land development code. These policy options will be discussed in the Policy Options Memo that will follow this Support Study. Beyond the broad policy options to address affordable housing need, it should be emphasized in this Support Study that if affordable housing need is going to be effectively addressed as development occurs, the policy options should address need in one of four ways. These mitigation options include:

- Payment of funds (or a housing assistance fee) to make up the difference between the cost of housing in the county for the employee(s) in need of affordable housing and what the employee(s) can reasonably afford;
- Construction of affordable housing units for the employee in need;
- Conversion of existing market units to affordable units for the employee in need; or
- Providing land for affordable housing that is of equal value to the funds (housing assistance fee) needed.

APPENDIX A: MLS RESIDENTIAL SALES, LEE COUNTY, 1998-2006

Table A.1
MLS RESIDENTIAL SALES
LEE COUNTY, 1998-2006

Selling Price	Single Family		Multi Family		Manufactured		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Under \$50,000										
1998	40	5.11%	53	23.25%	44	64.71%	8	17.02%	145	12.88%
1999	118	4.22%	152	17.00%	143	54.58%	13	7.98%	426	10.35%
2000	137	4.54%	164	15.81%	150	53.38%	27	14.59%	478	10.58%
2001	114	3.18%	132	14.25%	169	47.47%	13	6.91%	428	8.48%
2002	140	3.10%	76	6.67%	153	37.32%	5	2.13%	374	5.94%
2003	187	2.72%	82	4.73%	117	27.92%	15	4.31%	401	4.27%
2004	77	0.96%	35	1.43%	92	22.38%	4	0.99%	208	1.85%
2005	29	0.16%	4	0.02%	57	0.32%	3	0.02%	93	0.53%
Jan. – May 2006	5	0.11%	1	0.02%	22	0.50%	0	0.00%	28	0.64%
\$50,001 - \$80,000										
1998	228	29.12%	66	28.95%	19	27.94%	15	31.91%	328	29.13%
1999	657	23.49%	237	26.51%	81	30.92%	38	23.31%	1,013	24.61%
2000	613	20.32%	319	30.76%	110	39.15%	25	13.51%	1,067	23.61%
2001	555	15.50%	231	24.95%	125	35.11%	37	19.68%	948	18.77%
2002	475	10.52%	219	19.23%	149	36.34%	22	9.36%	865	13.73%
2003	492	7.15%	251	14.49%	146	34.84%	26	7.47%	915	9.75%
2004	274	3.43%	176	7.17%	113	27.49%	12	2.96%	575	5.11%
2005	92	0.52%	53	0.30%	109	0.62%	32	0.18%	286	1.61%
Jan. – May 2006	10	0.23%	1	0.02%	45	1.02%	3	0.07%	59	1.34%
\$80,001 - \$110,000										
1998	197	25.16%	29	12.72%	3	4.41%	12	25.53%	241	21.40%
1999	711	25.42%	170	19.02%	24	9.16%	46	28.22%	951	23.10%
2000	707	23.44%	192	18.51%	16	5.69%	60	32.43%	975	21.58%
2001	839	23.44%	182	19.65%	32	8.99%	30	15.96%	1,083	21.45%
2002	920	20.38%	222	19.49%	51	12.44%	26	11.06%	1,219	19.35%
2003	914	13.28%	337	19.46%	54	12.89%	29	8.33%	1,334	14.22%
2004	516	6.47%	285	11.61%	62	15.09%	34	8.37%	897	7.97%
2005	155	0.88%	172	0.97%	127	0.72%	35	0.20%	489	2.76%
Jan. – May 2006	34	0.77%	15	0.34%	45	1.02%	12	0.27%	106	2.41%
\$110,001 - \$130,000										
1998	122	15.58%	32	14.04%	1	1.47%	2	4.26%	157	13.94%
1999	515	18.41%	121	13.53%	12	4.58%	38	23.31%	686	16.67%
2000	515	17.08%	112	10.80%	4	1.42%	22	11.89%	653	14.45%
2001	650	18.16%	116	12.53%	20	5.62%	48	25.53%	834	16.51%
2002	898	19.89%	186	16.33%	22	5.37%	47	20.00%	1,153	18.30%

Table A.1
MLS RESIDENTIAL SALES
LEE COUNTY, 1998-2006

Selling Price	Single Family		Multi Family		Manufactured		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
2003	1,458	21.19%	265	15.30%	40	9.55%	43	12.36%	1,806	19.25%
2004	1,135	14.22%	332	13.53%	34	8.27%	19	4.68%	1,520	13.51%
2005	232	1.31%	214	1.21%	60	0.34%	32	0.18%	538	3.04%
Jan. – May 2006	31	0.70%	21	0.48%	17	0.39%	6	0.14%	75	1.70%
\$130,001 - \$160,000										
1998	71	9.07%	19	8.33%	1	1.47%	6	12.77%	97	8.61%
1999	260	9.30%	57	6.38%	1	0.38%	10	6.13%	328	7.97%
2000	344	11.41%	90	8.68%	1	0.36%	17	9.19%	452	10.00%
2001	423	11.82%	86	9.29%	6	1.69%	23	12.23%	538	10.65%
2002	508	11.25%	107	9.39%	24	5.85%	52	22.13%	691	10.97%
2003	980	14.24%	227	13.11%	34	8.11%	78	22.41%	1,319	14.06%
2004	1,438	18.02%	341	13.90%	31	7.54%	82	20.20%	1,892	16.82%
2005	526	2.97%	474	2.68%	51	0.29%	44	0.25%	1,095	6.18%
Jan. – May 2006	76	1.73%	73	1.66%	15	0.34%	6	0.14%	170	3.86%
\$160,001 - \$190,000										
1998	35	4.47%	10	4.39%	0	0.00%	2	4.26%	47	4.17%
1999	158	5.65%	36	4.03%	1	0.38%	7	4.29%	202	4.91%
2000	183	6.07%	37	3.57%	0	0.00%	6	3.24%	226	5.00%
2001	256	7.15%	51	5.51%	2	0.56%	13	6.91%	322	6.38%
2002	347	7.69%	90	7.90%	7	1.71%	32	13.62%	476	7.56%
2003	628	9.13%	147	8.49%	15	3.58%	68	19.54%	858	9.15%
2004	923	11.57%	261	10.64%	33	8.03%	90	22.17%	1,307	11.62%
2005	905	5.11%	461	2.60%	30	0.17%	89	0.50%	1,485	8.38%
Jan. – May 2006	179	4.07%	89	2.02%	8	0.18%	19	0.43%	295	6.70%
\$190,001 - \$210,000										
1998	23	2.94%	7	3.07%	0	0.00%	0	0.00%	30	2.66%
1999	96	3.43%	39	4.36%	0	0.00%	2	1.23%	137	3.33%
2000	140	4.64%	20	1.93%	0	0.00%	4	2.16%	164	3.63%
2001	177	4.94%	16	1.73%	1	0.28%	4	2.13%	198	3.92%
2002	222	4.92%	43	3.78%	0	0.00%	12	5.11%	277	4.40%
2003	387	5.62%	107	6.18%	4	0.95%	34	9.77%	532	5.67%
2004	580	7.27%	219	8.92%	22	5.35%	49	12.07%	870	7.73%
2005	707	3.99%	311	1.76%	20	0.11%	58	0.33%	1,096	6.19%
Jan. – May 2006	124	2.82%	50	1.14%	7	0.16%	4	0.09%	185	4.20%
\$210,001 - \$240,000										
1998	23	2.94%	6	2.63%	0	0.00%	0	0.00%	29	2.58%
1999	83	2.97%	27	3.02%	0	0.00%	2	1.23%	112	2.72%
2000	116	3.85%	23	2.22%	0	0.00%	5	2.70%	144	3.19%
2001	133	3.72%	18	1.94%	1	0.28%	7	3.72%	159	3.15%
2002	221	4.89%	34	2.99%	1	0.24%	14	5.96%	270	4.29%

Table A.1
MLS RESIDENTIAL SALES
LEE COUNTY, 1998-2006

Selling Price	Single Family		Multi Family		Manufactured		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
2003	332	4.82%	66	3.81%	3	0.72%	9	2.59%	410	4.37%
2004	475	5.95%	162	6.60%	10	2.43%	37	9.11%	684	6.08%
2005	1,327	7.49%	508	2.87%	21	0.12%	99	0.56%	1,955	11.04%
Jan. – May 2006	411	9.34%	92	2.09%	6	0.14%	13	0.30%	522	11.86%
\$240,001 - \$270,000										
1998	11	1.40%	1	0.44%	0	0.00%	1	2.13%	13	1.15%
1999	52	1.86%	21	2.35%	0	0.00%	2	1.23%	75	1.82%
2000	60	1.99%	21	2.03%	0	0.00%	3	1.62%	84	1.86%
2001	112	3.13%	13	1.40%	0	0.00%	3	1.60%	128	2.53%
2002	173	3.83%	26	2.28%	1	0.24%	6	2.55%	206	3.27%
2003	324	4.71%	62	3.58%	1	0.24%	9	2.59%	396	4.22%
2004	411	5.15%	115	4.69%	5	1.22%	15	3.69%	546	4.85%
2005	1,432	8.08%	545	3.08%	32	0.18%	91	0.51%	2,100	11.86%
Jan. – May 2006	576	13.09%	77	1.75%	5	0.11%	14	0.32%	672	15.27%
\$270,001 - \$300,000										
1998	10	1.28%	0	0.00%	0	0.00%	0	0.00%	10	0.89%
1999	32	1.14%	10	1.12%	0	0.00%	0	0.00%	42	1.02%
2000	37	1.23%	22	2.12%	0	0.00%	3	1.62%	62	1.37%
2001	58	1.62%	21	2.27%	0	0.00%	1	0.53%	80	1.58%
2002	111	2.46%	12	1.05%	0	0.00%	8	3.40%	131	2.08%
2003	210	3.05%	26	1.50%	0	0.00%	7	2.01%	243	2.59%
2004	337	4.22%	63	2.57%	4	0.97%	14	3.45%	418	3.72%
2005	921	5.20%	487	2.75%	24	0.14%	113	0.64%	1,545	8.72%
Jan. – May 2006	367	8.34%	106	2.41%	3	0.07%	28	0.64%	504	11.45%
\$300,001 - \$330,000										
1998	7	0.89%	1	0.44%	0	0.00%	0	0.00%	8	0.71%
1999	21	0.75%	5	0.56%	0	0.00%	1	0.61%	27	0.66%
2000	39	1.29%	8	0.77%	0	0.00%	3	1.62%	50	1.11%
2001	51	1.42%	9	0.97%	0	0.00%	1	0.53%	61	1.21%
2002	86	1.90%	17	1.49%	0	0.00%	2	0.85%	105	1.67%
2003	187	2.72%	19	1.10%	0	0.00%	8	2.30%	214	2.28%
2004	325	4.07%	50	2.04%	2	0.49%	12	2.96%	389	3.46%
2005	553	3.12%	350	1.98%	8	0.05%	73	0.41%	984	5.56%
Jan. – May 2006	205	4.66%	57	1.30%	1	0.02%	25	0.57%	288	6.55%
\$330,001 - \$360,000										
1998	5	0.64%	0	0.00%	0	0.00%	0	0.00%	5	0.44%
1999	24	0.86%	3	0.34%	0	0.00%	0	0.00%	27	0.66%
2000	17	0.56%	4	0.39%	0	0.00%	2	1.08%	23	0.51%
2001	41	1.15%	10	1.08%	0	0.00%	0	0.00%	51	1.01%
2002	73	1.62%	9	0.79%	1	0.24%	1	0.43%	84	1.33%

Table A.1
MLS RESIDENTIAL SALES
LEE COUNTY, 1998-2006

Selling Price	Single Family		Multi Family		Manufactured		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
2003	126	1.83%	11	0.64%	3	0.72%	2	0.57%	142	1.51%
2004	248	3.11%	60	2.44%	1	0.24%	9	2.22%	318	2.83%
2005	573	3.23%	285	1.61%	7	0.04%	69	0.39%	934	5.27%
Jan. – May 2006	145	3.30%	67	1.52%	2	0.05%	13	0.30%	227	5.16%
\$360,001 - \$390,000										
1998	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
1999	14	0.50%	4	0.45%	0	0.00%	0	0.00%	18	0.44%
2000	11	0.36%	11	1.06%	0	0.00%	2	1.08%	24	0.53%
2001	27	0.75%	13	1.40%	0	0.00%	1	0.53%	41	0.81%
2002	50	1.11%	11	0.97%	0	0.00%	1	0.43%	62	0.98%
2003	99	1.44%	15	0.87%	0	0.00%	2	0.57%	116	1.24%
2004	206	2.58%	50	2.04%	1	0.24%	1	0.25%	258	2.29%
2005	410	2.31%	193	1.09%	5	0.03%	30	0.17%	638	3.60%
Jan. – May 2006	89	2.02%	57	1.30%	1	0.02%	13	0.30%	160	3.64%
\$390,001 - \$410,000										
1998	0	0.00%	1	0.44%	0	0.00%	0	0.00%	1	0.09%
1999	12	0.43%	0	0.00%	0	0.00%	0	0.00%	12	0.29%
2000	14	0.46%	5	0.48%	0	0.00%	1	0.54%	20	0.44%
2001	36	1.01%	7	0.76%	0	0.00%	0	0.00%	43	0.85%
2002	53	1.17%	11	0.97%	0	0.00%	1	0.43%	65	1.03%
2003	72	1.05%	8	0.46%	0	0.00%	2	0.57%	82	0.87%
2004	160	2.01%	18	0.73%	1	0.24%	0	0.00%	179	1.59%
2005	286	1.61%	110	0.62%	3	0.02%	32	0.18%	431	2.43%
Jan. – May 2006	61	1.39%	32	0.73%	0	0.00%	7	0.16%	100	2.27%
\$410,001 - \$440,000										
1998	1	0.13%	2	0.88%	0	0.00%	0	0.00%	3	0.27%
1999	10	0.36%	0	0.00%	0	0.00%	0	0.00%	10	0.24%
2000	10	0.33%	1	0.10%	0	0.00%	0	0.00%	11	0.24%
2001	17	0.47%	5	0.54%	0	0.00%	1	0.53%	23	0.46%
2002	30	0.66%	13	1.14%	0	0.00%	0	0.00%	43	0.68%
2003	70	1.02%	10	0.58%	0	0.00%	0	0.00%	80	0.85%
2004	105	1.32%	28	1.14%	0	0.00%	2	0.49%	135	1.20%
2005	332	1.87%	181	1.02%	0	0.00%	26	0.15%	539	3.04%
Jan. – May 2006	81	1.84%	30	0.68%	1	0.02%	8	0.18%	120	2.73%
\$440,001 - \$470,000										
1998	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
1999	4	0.14%	3	0.34%	0	0.00%	1	0.61%	8	0.19%
2000	10	0.33%	2	0.19%	0	0.00%	1	0.54%	13	0.29%
2001	10	0.28%	2	0.22%	0	0.00%	1	0.53%	13	0.26%
2002	29	0.64%	13	1.14%	0	0.00%	0	0.00%	42	0.67%

Table A.1
MLS RESIDENTIAL SALES
LEE COUNTY, 1998-2006

Selling Price	Single Family		Multi Family		Manufactured		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
2003	66	0.96%	15	0.87%	1	0.24%	4	1.15%	86	0.92%
2004	99	1.24%	36	1.47%	0	0.00%	1	0.25%	136	1.21%
2005	306	1.73%	92	0.52%	0	0.00%	15	0.08%	413	2.33%
Jan. – May 2006	71	1.61%	31	0.70%	0	0.00%	9	0.20%	111	2.52%
\$470,001 - \$500,000										
1998	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
1999	4	0.14%	3	0.34%	0	0.00%	1	0.61%	8	0.19%
2000	10	0.33%	2	0.19%	0	0.00%	1	0.54%	13	0.29%
2001	10	0.28%	2	0.22%	0	0.00%	1	0.53%	13	0.26%
2002	29	0.64%	13	1.14%	0	0.00%	0	0.00%	42	0.67%
2003	66	0.96%	15	0.87%	1	0.24%	4	1.15%	86	0.92%
2004	99	1.24%	36	1.47%	0	0.00%	1	0.25%	136	1.21%
2005	301	1.70%	98	0.55%	1	0.01%	23	0.13%	423	2.39%
Jan. – May 2006	55	1.25%	24	0.55%	0	0.00%	9	0.20%	88	2.00%
More than \$500,000										
1998	10	1.28%	1	0.44%	0	0.00%	1	2.13%	12	1.07%
1999	26	0.93%	6	0.67%	0	0.00%	2	1.23%	34	0.83%
2000	53	1.76%	4	0.39%	0	0.00%	3	1.62%	60	1.33%
2001	71	1.98%	12	1.30%	0	0.00%	4	2.13%	87	1.72%
2002	150	3.32%	37	3.25%	1	0.24%	6	2.55%	194	3.08%
2003	284	4.13%	69	3.98%	0	0.00%	8	2.30%	361	3.85%
2004	572	7.17%	187	7.62%	0	0.00%	24	5.91%	783	6.96%
2005	1,916	10.82%	650	3.67%	0	0.00%	103	0.58%	2,669	15.07%
Jan. – May 2006	458	10.41%	182	4.14%	1	0.02%	49	1.11%	690	15.68%
Total of Year										
1998	783	100.00%	228	100.00%	68	100.00%	47	100.00%	1,126	
1999	2,797	100.00%	894	100.00%	262	100.00%	163	100.00%	4,116	
2000	3,016	100.00%	1,037	100.00%	281	100.00%	185	100.00%	4,519	
2001	3,580	100.00%	926	100.00%	356	100.00%	188	100.00%	5,050	
2002	4,515	100.00%	1,139	100.00%	410	100.00%	235	100.00%	6,299	
2003	6,882	100.00%	1,732	100.00%	419	100.00%	348	100.00%	9,381	
2004	7,980	100.00%	2,454	100.00%	411	100.00%	406	100.00%	11,251	
2005	10,982	100.00%	5,188	100.00%	555	100.00%	967	100.00%	17,692	
Jan. – May 2006	2,966	100.00%	998	100.00%	179	100.00%	238	100.00%	4,381	
Grand Total	43,051		14,596		2,941		2,777		63,815	

Source: Lee County Multiple Listing Service

APPENDIX B: EMPLOYEES PER HOUSEHOLD, LEE COUNTY

Table B.1: EMPLOYED PERSONS PER HOUSEHOLD ⁵⁹	
Total Households	188,755
Households with Earnings (may have multiple workers)	126,220
Households without Earnings	62,535
Employed Persons	169,000
Employed Per Household	1.339
Earned Income per Household	\$34,515
Earned Income per Household with Earned Income	\$51,615

SOURCE: US Bureau of the Census, <http://factfinder.census.gov>

The focus of the support study is to determine the need created for affordable housing for the workforce by residential and non-residential development. In order to determine employed workers per household, recent census data was reviewed related to the number of households and employees in Lee County. (See Table B.1: *Employed Persons per Household*.) To determine the average number of employed workers per household from this data, the number of persons employed was divided by households with earnings to get the average employed persons per household with earned income. (Employed Persons ÷ Households with Earnings = Employed Workers per Household), $(169,000 \div 126,220 = 1.339)$.

⁵⁹ Employment data shown in Table B.1 above includes all non-agricultural employment.

APPENDIX C: “FULL-TIME EMPLOYEE EQUIVALENT” CONVERSION RATIO, LEE COUNTY RESIDENTIAL JOB STUDY

The employment estimates of residential operation and maintenance employees derived from the survey results from the *Residential Job Survey* for homeowners associations (HOA), property management firms, direct hires, on-site caretakers, and other local service firms are similar to, although not quite precisely the same as, “full-time equivalents” (FTE’s). “Employee equivalents,” which are used in the *Residential Job Survey* represent the number of persons that would typically be employed to complete the work, based on the responses to the survey questions asked about the number of employees hired, or the monies spent by the homeowner for HOAs or property management firms. “Employee equivalents” include a blended hybrid of full-time and part-time employees. The specific steps for calculating employment estimate conversion ratios for “employee equivalents” are identified below. Homeowner’s association employment estimates are used as an example.

1. Calculation – Wages as % of Total Revenues⁶⁰

- a. Total wages paid to employees is identified for each service type by NAICS code using economic census (2002) data.
- b. Total revenues paid by households to each type of service firm are identified by NAICS code using economic census (2002) data.
- c. Total wages are divided by total revenues to result in wages as % of total revenue

HOA Example: Wages for employees constitute 23% of total HOA revenues.

2. Calculation – Average Wages of Employees

- a. Average number of employees for each service provider in 2004 was identified via NAICS codes using 2004 QCEW data⁶¹.
- b. Total wages paid in 2004 by service provider were identified via NAICS codes using QCEW (2004).
- c. Total wages was divided by average number of employees to determine 2004 average wages for each service provider.
- d. An inflation factor was calculated to convert 2004 wages to 2006 wages. The rate of wage increase between 2002 and 2004 was used to determine the inflation factor to be applied to 2004 averages wages to estimate 2006 wages for each type of employment.
- e. The 2004 average wage was multiplied by the inflation factor to result in estimated 2006 average wages.

HOA Example: 1.11 inflation factor, \$26,165 average wage ('06).

3. Determine - Average Annual Expenditures per Household

The Average annual expenditure per household for operations and maintenance services is derived from residential survey responses.

⁶⁰ All service provider data is identified using the 2002 economic census data at the County level, except for HOAs. For HOAs, the state level data is used to determine the ratio of wages to revenues.

⁶¹ The Quarterly Census of Employment and Wages (QCEW) is provided by the U.S. Census Bureau of Labor Statistics, and is available at <http://data.bls.gov/PDQ/outside.jsp?survey=en>

HOA Example: \$3,544 average annual expenditures per household

4. Calculation – Total Revenue Required for 1 Employee Equivalent (Conversion Ratio)

Total Revenue Required for 1 Employee Equivalent =

$$2006 \text{ Average wage} \div \text{Wages as \% of Total Revenue}$$

HOA Example.

$$\$26,165 \div 23\% = \$111,795$$

“Employee equivalents” can then be determined by dividing the conversion ratio into the average annual expenditures paid to a service provider.

HOA Example.

$$\$3,544 \div \$111,795 = 0.03 \text{ employee equivalents}$$

APPENDIX D: STATISTICAL ANALYSIS OF OPERATIONS AND MAINTENANCE EMPLOYEES SERVICING RESIDENTIAL DWELLING UNITS, LEE COUNTY

The initial hypothesis used to evaluate the survey results from the Residential Job Study about residential development's employment of operations and maintenance persons in Lee County is that the number of persons employed in the operation and maintenance of a dwelling unit is a function of:

1. The size of the structure,
2. The type of structure – single family detached or all others,
3. The age of the householder,
4. The income of the householder, and
5. Whether the dwelling is occupied full time by the householder.

Only the first two items, the size of the unit and its type, are matters that can be regulated, but all five of the factors are expected to be relevant to explaining the number of persons employed. The mathematical expression of this hypothesis is:

$$FTE = f(FT^2, Type, Age, Income, Residence)$$

Multiple regression analysis was used to test the validity of the hypothesis. The linear regression analysis results in the following linear relationship:⁶²

$$FTE = -0.4161 + (0.544 * kFT^2) + (.00227 * Age) + (.000117 * kIncome) + (-.051 * SFD) + (-.0039 * Resident)$$

$$R_{Adj}^2 = .2596$$

$$F = 23.2$$

The logic of this equation is consistent with the hypothesis, but the statistical results are poor. The t Statistic (shown above for each of the independent variables) for the intercept, Age, Unit Type and Residency are below 95% and thus are unacceptable. The coefficient of

⁶² In the equation, FTE = full time equivalent employee, FT² = square footage of home, Age = age of homeowner, Income = income of the homeowner, SFD = single-family detached structure, and Resident = tenancy of owner.

determination (r^2_{Adj}) is low at .2596, while the F Statistic is significant at 23.2, thus indicating that there is some co-variation among the data. This equation shows that employment increases with size, age, and income and that there are fewer operations and maintenance employees for single family units than any other unit type and fewer employees for full time residents than for part time residents. However, the test statistics indicate that these results are not significant.

The equation was re-run assuming a logarithmic relationship, as opposed to the original linear relationship. The resulting regression equation is as follows:

$$Ln(FTE) = -14.22 + [(0.790 * Ln(FT^2))] + [(0.674 * Ln(Age))] + [(0.355 * Ln(Income))] + (-.428 * SFD) + (-.108 * Resident)$$

$$r^2_{Adj} = .374$$

$$F = 36.8$$

The statistical results of the logarithmic equation are much better than in the linear form. This is expected because most, if not all, of the independent variables are subject to diminishing returns. Similar to the results of the linear regression analysis, the interpretation of the log results is:

1. That full time employees increase with the size of the dwelling unit, but at a diminishing rate;
2. That householders hire more operational and maintenance services as they age, but also at a diminishing rate;
3. That higher income householders tend to rely more on hired operational and maintenance services, also at a diminishing rate;
4. That single family detached householders tend to rely less upon hired operational and maintenance services than those residing in other types of dwellings; and
5. Full time residents tend to rely less upon hired operational and maintenance services than part time residents (but this is not statistically significant).

Because the residency of the householder was statistically insignificant, the equation was re-run without residency with the following results:

$$\ln(FTE) = -14.33^{15.9} + [(0.824 * \ln(FT^2))^{2.11}] + [(.675 * \ln(Age))^{3.55}] + [(.336 * \ln(Income))^{5.50}] + (-.407 * SFD)^{2.35}$$

$$r^2_{Adj} = .375$$

$$F = 48.3$$

This is the final form of the equation. The coefficient of determination, (r^2_{Adj}), is equal to .375. This means that 37.5% of all variation in full time operational and maintenance employees is explained by the variation in the independent variables. It follows that there are important determinants to the number of hired operational and maintenance services that are not incorporated into these independent variables. Perhaps the most important of these are individual preferences, where some individuals like to perform operational and maintenance services while others do not. However, the role of the size of the dwelling in determining the magnitude of operational and maintenance services employment is evident.

Because factors such as a homeowner's age and income are not valid bases for land development regulations, these explanatory factors are excluded from the equation. Additionally, there are so few dwellings units in the sample larger than 10,000 square feet (5 equal to 10,000 and 2 larger) attention is directed at units no greater than 10,000 square feet. This means that the linear form of the unit size variable will be used.

$$\ln(FTE) = -0.018^{0.64} + (0.0649 * kFT^2)^{10.6} + (-.060 * SFD)^{1.94} + (-.0026 * Resident)^{0.115}$$

$$r^2_{Adj} = .225$$

$$F = 44.1$$

In this form the Residency variable is again insignificant and the unit type variable is, at best, marginally significant. Re-running the regression without the Residency variable yields:

$$\ln(FTE) = -3.561^{32.7} + (0.000332 * FT^2)^{12.1} + (-.219 * SFD)^{1.62}$$

$$r^2_{Adj} = .285$$

$$F = 89.8$$

Now the unit type variable becomes clearly insignificant leading to an employment equation with a single independent variable:

$$\ln(FTE) = -3.47^{38.2} + (0.000309 * FT^2)^{13.3}$$

$$r^2_{Adj} = .282$$

$$F = 176.7$$

This latter expression is the one used to project the post-construction employment impacts of a residential dwelling in Lee County for units up to 10,000 square feet. For units greater than 10,000 square feet, it is recommended that the ratio of employees to floor area for a 10,000 foot unit be used to estimate the employment impact for larger than 10,000 feet units.

This truncated equation, as would be expected, has less explanatory power. However, it focuses on the single characteristic that is most commonly associated with operational and maintenance employment, the size of the dwelling. Figure C.1: *Residential Employment by Size of Unit* illustrates both the scatter plot of the actual data and the fitted equation from the final regression equation listed above.

