

Study: The public costs of inadequate affordable housing in Lee County, Florida

Endorsed by: The Lee County Board of County Commissioners Management and Planning Committee September 9, 2002, and the Lee County Affordable Housing Committee on September 3, 2002.



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1 Executive Summary of Findings

The need for affordable housing costs Lee County citizenry over \$249 million each year.

The purpose of this study is to ascertain if there are public costs to Lee County citizens that result from an inadequate supply of affordable housing. If there are public costs, the study illustrates those costs through specific indicators derived from existing research in the areas of housing, transportation infrastructure and social policy. The following findings result from this analysis.

1. There is inadequate affordable housing in Lee County, Florida

Ample research supports the finding that Lee County does not have enough housing that is affordable to families living at or below 80% Area Median Income.

- The 2002 hourly wage needed to buy a median priced home in Lee County (\$154,000) is \$25.87 – far exceeding the \$14.86 a fire fighter earns, or the \$9.66 a receptionist earns in Lee County.
- The development of affordable housing is declining. The percentage of single-family units priced at \$120,000 or less fell from 40 percent of all homes built in 1999 to 26 percent of all units built in 2001.
- The average cost of a two-bedroom rental apartment leapt from a 3 percent increase between 1999 and 2000 to a 25 percent increase between 2000 and 2001.
- It is estimated Lee County will need 30,000 units of owner-occupied housing and 11,493 rental units by the year 2010.

2. The need for more affordable housing costs Lee County citizenry over \$249 million annually and is expected to rise with growing unmet need

This study calculates the public costs associated with inadequate housing in three sectors of the community: lost economic opportunity, transportation infrastructure, and the direct and indirect social costs related to education and health care. This study concludes it costs Lee County citizenry:

- **\$240.7 million per year in lost economic opportunity**
 - \$158.8 million - lost jobs and wages as a result of not developing needed housing
 - \$78.6 million - lost economic opportunity as a result of families spending too much money on housing
 - \$3.3 million - lost property tax revenue

Absent aggressive measures, public costs will continue to rise as the need for more housing is unmet.

- **\$3.2 million per year in transportation infrastructure**
 - For every 15,000 workers who must travel great distances to work
- **\$5.4 million per year in education and health care social indicators**
 - \$4.4 million – education indicators
 - \$1 million – health care indicators

These figures are for 2002. These costs are expected to rise in subsequent years as the need for affordable housing outpaces efforts to increase affordable housing opportunities, absent aggressive measures.

3. Lee County needs to initiate an aggressive affordable housing development strategy

Currently in Lee County, an average of 1,000 single-family units valued at \$120,000 or less are built each year. This number would have to be doubled to 2,000 units the first year, and then assume a 12 percent increase in housing production each year following to meet the community's need for 30,000 owner-occupied affordable housing units by the year 2010. This can be accomplished by adopting an aggressive affordable housing development strategy that can include many innovative approaches.

The Lee County Ad Hoc Affordable Housing Working Group developed recommendations to increase homeownership, all of which serve well the need for increased affordable housing opportunities. These recommendations have been reviewed, changed and subsequently endorsed by the Lee County Affordable Housing Committee and the Lee County Board of County Commissioners, Management and Planning Committee. Based on successes in other communities, the following proposed recommendations warrant special attention.

- **Establish a Local Housing Trust Fund** Over 200 states, counties and cities nationwide operate a fund established specifically for the development of affordable housing.
- **Implement Inclusionary Zoning** One of the most successful community-based efforts to increase the production of affordable housing is inclusionary zoning. Inclusionary zoning reserves a specific percentage of housing units for lower-income households in new developments.
- **Work with Employers to Encourage Employee Homeownership Incentives** Increasingly, employers are creating opportunities for workers to become homeowners. Employer-assisted housing programs include down payment assistance, low-interest loans, and the actual creation of housing units.

This study has tremendous value to business leaders, developers, housing policy makers, neighborhood groups, the real estate community, and government in general, to make good decisions for the community as it grows. Homeownership is a cornerstone for many communities that seek neighborhood stability, a thriving economy, and overall well being. Seeking to better understand the interplay of housing with many other elements of the community is a significant step in the direction of increased homeownership opportunities for all Lee County citizenry.

2 Study Overview

Having an inadequate supply of affordable housing affects all of Lee County's citizenry.

Homeownership is the American Dream come true, and for many families, it is the sole asset that helps to build long-term economic security. The goal of increasing homeownership is a common one for communities: people recognize that homeownership increases neighborhood stability, helps children thrive in school and increases the well being of the entire community.

Yet what happens when a community discovers that many of its citizens are unable to afford to buy a home? What can a community do when its workforce projections estimate that a majority of newcomers are younger people, many of whom will work service-sector and retail industry jobs – jobs that traditionally offer lower wages and few benefits?

Lee County, Florida is confronted with such a scenario at this time, and its leaders are asking similar questions of themselves and of its citizens. This study is a first step to better understand the value that affordable housing has in the community. This study calculates the public costs associated with inadequate housing in three sectors of the community: lost economic opportunity, transportation infrastructure, and the direct and indirect social costs related to education and health care.

Gaining access to affordable housing is not an isolated concern for those families living at the lower rungs of the economic ladder. Having an inadequate supply of affordable housing affects all of Lee County's citizenry. This study will help equip Lee County leaders and citizenry to make informed decisions about upcoming financial commitments to affordable housing, and to the long-term health of the community as a whole.

Study Purpose

The purpose of this study is to ascertain if there are public costs to Lee County citizens that result from an inadequate supply of affordable housing. If there are public costs, the study illustrates those costs through specific indicators derived from existing research in the area of housing, transportation and social policy. Assessing the economic impact of inadequate affordable housing requires a researcher to make assumptions for a wide range of variables – housing conditions, cost burden, household spending choices, labor market projections, and more. Despite the difficulties raised from this approach, it is an important task for the community to tackle for a variety of reasons.

This study places Lee County in the vanguard of communities seeking to better understand the interplay of housing and the economy.

First, as communities grow – Lee County’s population increased 32 percent from 1990-2000, considerably faster than the 24 percent the state grew and the 15 percent at which the national population grew during the same period¹ – questions of how a community can grow equitably and beautifully arise. There are many examples of communities in the United States that did not anticipate the impacts of growth on their community.² Those communities have experienced skyrocketing housing prices that outstrip earned income, the loss of homeownership opportunities for entire bands of the economy, and increased traffic congestion as people cannot afford to live close to their jobs. Lee County is fortunate to be looking at the critical role affordable housing plays in maintaining community health *before* these problems are compounded.

Second, although there is growing research available on the economic benefits of creating affordable housing, there is little or no established research on the economic costs of *not* providing affordable housing. This study places Lee County in the vanguard of communities seeking to better understand the interplay of housing within the economy.

Third, this study establishes a starting point for further research and discussion. It proposes a methodology to better understand the housing-related economic relationships in the community. As more refined data becomes available, clearer pictures can be developed. The accumulation of knowledge gained by the community through this process has tremendous value to business leaders, developers, housing policy makers, neighborhood groups, the real estate community, and government in general, to make good decisions for the community as it grows.

Scope of Research

The parameters of analysis are the impacts households at or below 80% Area Median Income (AMI) have on economic opportunities and on public costs.³ Lower-income households have limited resources and thus curtailed options for housing. Many of Lee County affordable housing efforts currently target this income group for assistance.

Public costs are examined in three arenas: lost economic opportunity, transportation infrastructure, and social costs. Lost economic opportunities are the economic benefits the community foregoes by not developing affordable housing. Transportation infrastructure costs are costs associated with workers being forced to live far from employment centers due to an inadequate supply of affordable housing located near emerging employment centers. Social costs are costs rendered to the community in direct and in indirect ways as a result of having inadequate affordable housing for Lee County residents.

Public costs are examined in three areas: lost economic opportunity, transportation, and social costs.

Social costs are defined broadly, and there is no differentiation between services provided through County, State and Federal funding sources. This approach is taken because quantifying social costs is difficult at best, and so examples of the relationship between housing and social influences are chosen based on the clarity of the relationship, rather than on the source of public revenue.

Lost Economic Opportunity

Lost economic opportunity is defined as the economic benefit the County forgoes by not developing affordable housing. Lost economic opportunity is analyzed in three areas: (1) lost jobs and wages; (2) lost consumer spending; and (3) lost property taxes.

The first lost economic opportunity relates to the economic stimulus created by the actual construction of housing that is affordable. It is estimated that Lee County will need 30,000 additional units of owner-occupied housing for residents at or below 80% Area Median Income (AMI) by the year 2010.⁴ Residential construction stimulates the economy directly through job generation and wages, and indirectly as the demand for goods and services created by the construction of new homes creates a “Ripple Effect” throughout the local economy. This study relies upon National Association of Home Builders’ estimates for the direct economic impact of housing construction. This section is limited to the economic stimulus represented by owner-occupied units. It is estimated that Lee County will need 11,493 units of rental housing for residents at or below 80% AMI by 2010.⁵ The development of rental properties also stimulates the economy, so this section underestimates the overall economic impact of meeting Lee County’s affordable housing needs.

Lost consumer spending is the amount of money lost to the economy as a result of households paying more than 30 percent of their income on housing costs. Thirty percent is the widely accepted U.S. Housing and Urban Development standard for the maximum a household should spend on housing costs. Households that spend more than 30 percent of their budget on housing are considered cost burdened. Cost burdened households are limited in their ability to purchase other goods from the economy, such as food, transportation, health care, childcare and retail items. This offset of purchasing power has a significant impact on the local economy. This study estimates the annual cost of lost consumer spending as a result of households paying too much for their housing.

The third category of lost economic opportunity is lost property tax revenue. The construction of affordable housing provides Lee County a new and stable source of property tax revenue. This study projects property tax revenue for the construction of 30,000 units of housing selling at \$120,000 each.⁶ Again, rental units are excluded from calculations.

This study analyzes commuter trends of lower-wage earners and posits a more cost-effective approach as Lee County grows.

Transportation Infrastructure

As communities grow, the balance between where workers live and where they work can become strained. The way in which a community grows has enormous consequences to public cost. Public costs associated with how a community grows include road construction and maintenance, schools, and water and sewer utilities. Many communities have conducted fiscal impact analyses to better understand the fiscal impacts of growth patterns. A comprehensive fiscal analysis is beyond the scope of this study.

There are significant public savings derived from the reduction of commuting and its attendant costs of congestion, accidents, and air pollution.⁷ These costs include infrastructure costs and health concerns. There are also social costs associated with the location of affordable housing. When housing is in close proximity to high-wage jobs, top-quality schools, and well-funded public safety services, children have more opportunity to achieve economic and social stability than when they are not.⁸

To best represent the public costs associated with the impact an inadequate supply of affordable housing has on transportation infrastructure costs in Lee County, this study analyzes commuter trends of lower-wage earners and posits a more cost-effective approach as Lee County grows. This methodology was developed through discussions with members of the Lee County Department of Transportation, County planners expert in U.S. Census data, and transportation analysts from the Southwest Florida Regional Planning Council.

Social Costs

Social costs, broadly defined, are costs the community bears as a result of differing needs and capacities within the community. Communities bear social costs in order to ensure the community thrives. Because of the multitude of variables involved in defining what makes a society healthy and operable, isolating and quantifying social costs is an illustrative more so than a quantifiable process. To illustrate the social costs associated with housing, researchers conducted a literature review of research that provides definitive, qualitative relationships between housing and two primary arenas of community-borne social costs: education and health care.

There are many other community-borne social costs that are related to inadequate housing, including homelessness, domestic violence, mental health care, childcare, and other social services. This study emphasizes education and health care as a starting point for further analysis in Lee County.

The relationship between education and housing is well documented: the more stable the home a child comes from, the more likely they are to succeed in school and later in the workforce.⁹ To best understand the costs to the educational community of Lee County, representatives from Lee County

The more stable the home a child comes from, the more likely they are to succeed in school and later in the workforce.

School Districts' Offices of Welfare and Attendance, program officers of the District's homeless services, student mobility, remediation, the Office of the Budget, and others helped to identify and quantify key indicators.

Income data of students who access specific services in the education system is unavailable. Eligibility for free or reduced lunch programs is used. This is a common approach in education policy analysis. Using eligibility for free and reduced lunch programs underestimates the extent to which an education indicator impacts housing, because a family who is income eligible for the free and reduced lunch program earns less than does a family at or below 80% Area Median Income. This means the group of students who are at or below 80% AMI and yet ineligible for free or reduced lunches are not counted in the analysis. In addition, data is not available indicating whether the above child resides in owner-occupied or renter-occupied households.

In the case of health care, research establishes the relationship between the health of our families and the condition and stability of our housing. Representatives from the Lee County Public Health Department, Family Health Centers of Southwest Florida, the Southwest Florida Health Planning Council, State of Florida Health Statistics analysts and a representative from Lee County Memorial Hospitals helped to identify key indicators to best exemplify the relationship housing has to health care.

Emergency room health care services are excluded, because the County's hospital networks are private non-profit organizations and are not funded with public tax dollars. The hospitals play a key role in provision of health care services – Lee County Memorial Health Services provided \$24.2 million in direct charity care in 2001.¹⁰ The costs associated with charity care and unpaid hospital bills are inevitably "cost shared" with the rest of the community, as the loss of hospital income represented by unpaid bills is offset in part by paying patients' hospital charges. There is no set formula a hospital uses to cost share expenses, and so this study does not attempt to quantify this "public" cost.

In assessing health care costs, there are direct medical costs (inpatient and outpatient services, medical visits and medications) and indirect costs, including the time lost from school and work as a result of the illness and ensuing morbidity and mortality. To estimate the extent to which Lee County bears the costs of housing-related health care costs, national data sources are applied to local case prevalence. There are also health care costs related to transportation trends. Research is cited, although this study does not attempt to estimate transportation-related health care costs.

3 How Affordable is Housing in Lee County?

What do workers need to make to afford average housing costs in Lee County?

Housing affordability is defined as a household paying no more than 30% of its income on housing costs. Federal and state programs define housing costs for homeowners as follows: principal, interest, taxes and insurance (often referred to as the monthly mortgage payment), and for renters as: rent payment and utilities. Chart 2.1 uses the most recent demographic data available to show how much a household should make to afford the average sale price of a new home built in Lee County, or the average rental property. For the purposes of this study, utility costs are not included in the renters' housing costs. Median incomes of select job occupations are used to help readers better understand the gap of affordability in housing.

Chart 3.1 – Housing Affordability in Lee County	
Median Sales Price of New & Existing Homes Single-family, 2001 ¹¹	\$154,000
Total Monthly Housing Cost to Own 90% financed (10% down payment); 30-year mortgage Monthly mortgage payment at a mortgage rate of 7.5% Monthly prorated property tax/unincorporated Lee Cty (\$251 ¹²) Monthly prorated average homeowners insurance (\$125 ¹³)	\$ 1,345
Annual Income Required to Buy the Average House Assuming one spends 30% of one's gross income on housing	\$ 53,811
Monthly Income Required to Buy the Average House	\$ 4,484
Hourly Wage Required to Buy a Median-Priced House Based on 40 hours per week and a 52-week year	\$ 25.87/hour
Median Income, school bus driver	\$ 11.19/hour
Median Income, fire fighter	\$ 14.86/hour
Median Income, receptionist/information clerk Median incomes for Fort Myers/Cape Coral MSA ¹⁴	\$ 9.66/hour
Average Apartment Rental Rate¹⁵ Without utilities	\$ 732/month
Hourly Wage Required to Rent an Average Apartment For Average Rental Rate, without utilities	\$ 14.08/hour

Indicators of the Need for Affordable Housing

The extent to which a community has inadequate affordable housing is measured by the availability and condition of affordable housing. Availability is measured by the extent of cost burdened households. Housing condition is measured by the degree of substandard housing in the community.¹⁶

The need for affordable housing is slated to increase rapidly in the next ten years.

- In Lee County, 29 percent, or 50,000 households of all income levels pay more than 30 percent of their income on housing.¹⁷ Lower-income residents bear the lion's share of the cost burden, representing 2 out of every 3 cost burdened household.¹⁸

U.S. Census data for 2000 regarding substandard housing conditions is not yet available. Using 1990 Census data percentages and applying them to 1998 population data, an estimated 5 percent of all units, or 8,710 households are substandard, meaning the unit is dilapidated, does not have operable indoor plumbing, usable toilet or shower, electricity or safe electricity, safe or adequate heat, a kitchen or has been declared unfit for habitation.¹⁹ Assuming all substandard units are inhabited by people at or below 80% AMI, 13 percent of all units inhabited by people in this income range are substandard.

Other indicators of housing need in Lee County are evident.

- As the community grows, development of affordable housing is being left behind. There was a 41 percent increase in construction of single-family homes from 1999 to 2001, from 2,507 units to 3,544 units. During that same time period, the number of newly built affordable units dropped 10 percent (from 1,005 units in 1999 to 908 units in 2001). The portion of affordable housing built is falling drastically: in 1999, 40 percent of single-family houses built were valued at \$120,000 or less. By 2001, only 26 percent were priced in that range.²⁰
- The average cost of a rental unit in Lee County jumped from a 3 percent increase between 1999 and 2000 (from \$567 to \$584) to a 25 percent increase between 2000 and 2001 (from \$584 to \$732).²¹
- Mirroring national trends, Lee County homeownership rates continue to climb (76 percent in 2000, up from 72 percent in 1990).²² Employment and income growth, modest mortgage interest rates and innovative mortgage products for low-income buyers helped to boost national homeownership rates.²³
- Regarding homeownership and rental availability, it is estimated that Lee County will need 30,000 new units of owner-occupied housing and 11,493 rental units for residents at or below 80% AMI by the year 2010.²⁴ The Shimberg Center assumes 100 percent of cost burdened owner-occupied housing need housing assistance. Fifty-one percent of Lee County homeowners at or below 80% AMI are cost burdened.²⁵ It is reasonable to anticipate at least 50 percent of potential buyers of the 30,000 additional units will require housing assistance.²⁶

There is broad consensus in the Lee County housing community that addressing the need for affordable housing is a top priority.

- The 2000 Lee County Consolidated Plan states that there is a great shortage of affordable housing units in Lee County, and estimates the current shortage to be over 21,000 owner-occupied units and nearly 6,100 affordable rental units.
- A lack of affordable housing is one reason families are at risk of homelessness: waiting lists for public housing and Section 8 vouchers number 300 and 1,500, respectively.²⁷ Efforts to get families out of emergency shelters and into permanent housing are futile because there is no access to housing for families at risk of homelessness.²⁸

"Once a retirement haven, Lee County is now dominated by working-age people."

- Lee County Office of Economic Development
Demographic Profile, 2001

Workforce Projections

The need for affordable housing in Lee County is slated to increase rapidly in the next ten years. Demographic trends for Lee County indicate that the portion of the population aged 18 – 24, those just entering the workforce, is growing 30 percent faster in Lee County than elsewhere in the state of Florida, and 130 percent faster than elsewhere in the United States.²⁹ These workers, should they chose to settle in Lee County, will be arriving at house-buying age over the next five to ten years. Lee County will need to take action to be able to offer this growing sector of the population the promise of an affordable home to buy.

Currently, one out of every two jobs in Lee County is in the service sector or in wholesale/retail trade. These jobs are traditionally lower-wage jobs with few employee benefits. Service sector employment is the fastest growing sector of Lee County's economy: by the year 2008, service sector employment is expected to climb by 41 percent, adding 19,705 new workers to the local economy, and growing from 27 percent to 32 percent of total industry employment.³⁰ A recent Lee County workforce study prepared for the Economic Development office of Lee County and the Lee County Ad Hoc Affordable Housing Committee report noted that Lee County's median income is lower than the national average and is expected to grow slower for at least five years. The report states: "These relatively low incomes create a gap in the affordability of housing for many of Lee County's working families."³¹

Low-wage jobs create a tremendous barrier to housing affordability. A recent report by the National Low Income Housing Coalition (NLIHC) estimates a worker working a minimum wage job in Lee County (\$5.15 per hour) must work 91 hours per week to afford to rent a two-bedroom unit at the area's Fair Market Rent (\$608).³² The hurdle for homeownership is even higher.

Without additional affordable housing units, it is clear that a large portion of Lee County's workforce – many of whom are moving to Lee County at this time – will be shut out of the homeownership opportunities, and thus out of the opportunity to establish long-term economic security.

4 The Public Costs of Inadequate Housing

Public costs to Lee County citizens due to an inadequate supply of affordable housing.

The public costs to Lee County citizens due to an inadequate supply of affordable housing are analyzed in three sectors of the economy. **Lost Economic Opportunity** is defined as the economic benefit the County foregoes by not developing needed housing. **Transportation Infrastructure** is represented by costs the community bears when lower-wage workers must travel long distances to employment centers. **Social Cost**

Indicators illustrate the relationship between housing and two key sectors of the community: education and health care.

These costs are in 2002 dollars, and are expected to rise in subsequent years as the need for affordable housing outpaces efforts to increase affordable housing opportunities, absent aggressive measures.

Chart 4.1 – Summary of Public Costs to Lee County Citizens due to an Inadequate Supply of Affordable Housing: 2002

Public Costs: 2002	
Lost Economic Opportunity	
Lost Jobs & Wages	\$ 158,800,000
Lost Consumer Spending	\$ 78,644,397
Lost Property Tax Revenue	\$ 3,288,000
Total Lost Economic Opportunity	\$ 240,732,397
Transportation Infrastructure	
Public Cost of 15,000 Workers traveling far to work	\$ 3,264,000
Social Indicators	
Education Indicators	\$ 4,404,181
Health Care Indicators	\$ 1,006,922
Total Social Indicators	\$ 5,411,103
Total Annual Public Costs: 2002	\$ 249,407,500

5 Detail of Lost Economic Opportunity

Residential construction stimulates the economy through job creation and wages.

This section provides a detailed analysis of the economic opportunities Lee County foregoes by not developing affordable housing in three arenas: lost jobs and wages, lost consumer spending, and lost property tax revenue.

I: Lost Jobs & Wages

It is estimated that Lee County will need 30,000 additional units of owner-occupied housing for residents at or below 80% AMI by the year 2010.³³ Residential construction stimulates the economy directly through job generation and wages, and indirectly as the demand for goods and services created by the construction of new homes creates a “Ripple Effect” throughout the economy.

The National Association of Home Builders estimates the direct economic impact of the construction of 1,000 homes, in the categories of single-family and multi-family construction.³⁴ This study projects the lost jobs and wages represented by not constructing 30,000 units of housing. An annual increase of 12 percent is used to arrive at 30,000 units built by 2010.

Chart 5.1 – Lost Economic Opportunity: Lost Jobs & Wages

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
Annual Units Built	2,000	2,248	2,527	2,840	3,192	3,588	4,033	4,533	5,095
Annual Number of Jobs	4,896	5,503	6,185	6,952	7,815	8,784	9,873	11,097	12,473
Annual Wages in millions	\$158.8	\$178.5	\$200.6	\$225.5	\$253.5	\$284.9	\$320.2	\$359.9	\$404.6
Total Units Built, 2002 – 2010								30,056	
Total Lost Jobs & Wages, 2002 – 2010								\$2,368,478,996	

Cost Burdened households have artificially limited purchasing power in the economy.

II: Lost Consumer Spending

Cost burdened households – households that spend over 30% of their income on housing – are limited in their ability to purchase other goods from the economy, such as food, transportation, health care, childcare, and recreational and retail goods, due to the imbalance of housing costs. Currently, 29%, or 50,000, Lee County households at all income levels are cost burdened.³⁵ Of these, 31,000 are homeowners, and 19,000 are renters. 66% of cost burdened households

have incomes at or below 80% AMI.³⁶ This study focuses on the cost burden of households living at or below 80% AMI, chiefly because that income group is the focus of the study, but also because an extra dollar “saved” in a lower-income family is more likely to be spent for real goods than is a dollar saved in a higher income family, which has more options for investing the dollar saved, thus circumventing the local economy. For more information on methodology used for this section, refer to Appendix B.

Chart 5.2 – Lost Economic Opportunity: Consumer Spending

	Homeowners		Renters	
Area Median Income for Family of 4	Very Low-Income (Below 50% AMI)	Low-Income (51% - 80% AMI)	Very Low-Income (Below 50% AMI)	Low-Income (51% - 80% AMI)
Maximum Income	\$24,500 ³⁷	\$39,200 ³⁸	\$17,488 ³⁹	\$27,981 ⁴⁰
Adjusted Income (weighted ave.) ⁴¹	\$15,400	\$32,161	\$11,500	\$22,165
Maximum Spent on Housing (30%)	\$613/month	\$980/month	\$437/month	\$700/month
Est. Cost Burden: 31 – 49% ⁴²	38%	38%	38%	35%
Estimated housing cost w/burden	\$776/month	\$1,241/month	\$544/month	\$816/month
Lost Consumer Spending per HH	\$163	\$261	\$117	\$116
Total HHs Cost Burdened 31-49% ⁴³	6,096	4,028	5,473	5,166
<i>Lost Consumer Spending/month</i>	<i>\$995,683</i>	<i>\$1,052,572</i>	<i>\$638,028</i>	<i>\$602,256</i>
Est. Cost Burden: over 50% ⁴⁴	60%	60%	66%	60%
Est. housing cost w/burden	\$770/month	\$1,608/month	\$633/month	\$1,108/month
Lost Consumer Spending per HH	\$158	\$628	\$195	\$409
Total HHs Cost Burdened > 50% ⁴⁵	4,951	2,140	4,555	615
<i>Lost Consumer Spending/month</i>	<i>\$779,779</i>	<i>\$1,344,125</i>	<i>\$889,677</i>	<i>\$251,488</i>
Annual Lost Consumer Spending				78,644,397

Construction of affordable housing gives Lee County a new and stable source of property tax revenue.

III: Lost Property Tax Revenue

It is estimated that Lee County will need 30,000 additional units of owner-occupied housing for residents at or below 80% AMI by the year 2010.⁴⁶ Construction of 30,000 units of affordable housing provides Lee County a new and stable source of property tax revenue. This study estimates lost tax revenue potential of not constructing 30,000 units by making the following assumptions, established with the assistance of the Lee County Office of the County Manager⁴⁷: (1) the

taxable value of the properties is \$120,000⁴⁸; (2) residents access the \$25,000 homestead exemption⁴⁹; (3) average tax bill is based on 2002 rates for a home in unincorporated Lee County – this number will increase but is kept at 2002 levels for this projection; (4) residents are assessed no other mills; and (5) a 95% collection rate is assessed.⁵⁰ An annual gain of 12 percent was used to arrive at 30,000 units built by 2010. Revenue projections do not take into account growth in taxable value.

Chart 5.3 – Lost Economic Opportunity: Lost Property Tax Revenue

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
Annual Units Not Built	2,000	2,248	2,527	2,840	3,192	3,588	4,033	4,533	5,095
Average Tax Bill Not Collected	\$1,644	\$1,644	\$1,644	\$1,644	\$1,644	\$1,644	\$1,644	\$1,644	\$1,644
Annual Tax Revenue in Millions Not Collected ⁵¹	\$3.3	\$3.7	\$4.2	\$4.7	\$5.2	\$5.9	\$6.6	\$7.5	\$8.4
Total Units Not Built, 2002 – 2010									30,056
Total Lost Property Tax Revenue, 2002 – 2010									\$49,412,739

6

Detail of Transportation Infrastructure Costs

"Most communities don't have a transportation problem – they have a housing problem."

- Stephen Fuller

The way in which a community grows has enormous consequences to public cost. Public costs associated with how a community grows include road construction and maintenance, schools, and water and sewer utilities. A recent comprehensive review of academic research on the link between affordable housing and growth management concludes that while the *market* is the primary determinant of housing prices, *sound growth management practices* provide more affordable housing options than do traditional land use policies.⁵² In other words, the more we know where we'd like to go, the more likely we are to get there.

Many communities have conducted fiscal impact analyses to better understand the impact growth patterns have on public costs. A study in Michigan comparing low-density and high-density development found that low-density development costs the community 25 percent more in road development and maintenance, 5 percent more in schools, and 15 percent more in utilities.⁵³ A 1992 study of New Jersey found the state could save \$1.38 billion (in 1990 dollars⁵⁴) over a twenty-year period in capital costs of roads, water and sewer facilities, and schools by focusing growth around "centers" which allow for both housing opportunities and employment opportunities.⁵⁵ In

Florida, a 1989 study found that "compact" rather than "scattered" development can save up to \$14,700 (in 1987 dollars⁵⁶) per dwelling for services and infrastructure costs.⁵⁷

A comprehensive fiscal impact analysis is beyond the scope of this study. To best represent the public costs associated with the impact an inadequate supply of affordable housing has on transportation infrastructure costs in Lee County, this study analyzes commuter trends of lower-wage earners and posits a more cost-effective approach as Lee County grows.

As Lee County grows, questions of how the community can house an increased demand for workers are arising.⁵⁸ Service sector employment is the fastest growing sector of Lee County's economy, and current data show that one out of every two jobs in Lee County is in the service sector or in wholesale/retail trade – traditionally low paying jobs with few employee benefits.⁵⁹ These workers will need a place to live.

When lower-wage workers are able to live close to suburban places of employment, there are significant public savings from the reduction of commuting and its attendant costs of congestion, accidents and air pollution.⁶⁰

A lack of affordable housing located nearby booming job centers means lower-wage workers must travel long distances to provide needed employment.

To illustrate this, this study examines two areas of Lee County – Lehigh Acres, where a preponderance of lower-wage workers live, and Estero, an area in which fast job growth is creating employment opportunities for lower-wage workers. See Appendix C for maps of the two areas considered.⁶¹

This methodology was developed through discussions with members of the Lee County Department of Transportation, County planners expert in U.S. Census data, and transportation analysts from the Southwest Florida Regional Planning Council.⁶²

Lehigh Acres

Lehigh Acres – located in the central eastern portion of unincorporated Lee County – includes 12,707 households.⁶³ Lehigh Acres is a large, platted subdivision with many undeveloped lots. The land in Lehigh is relatively less expensive than other areas of the County, and the area is undergoing rapid residential development. Lehigh Acres residents' median family income (\$42,492) and median housing value (\$79,400) are 8 percent and 30 percent lower than the rest of Lee County, respectively. This indicates a propensity of households that work lower-wage jobs and live in Lehigh Acres because the housing is more affordable than in other areas of the County. Lehigh Acres' workers' mean travel time to work is 29.3 minutes – 17 percent longer than the rest of Lee County. This indicates that Lehigh Acres' residents must

travel further distances than average to get to work each day.

Estero

Estero – located in the central southwest portion of unincorporated Lee County – includes 4,608 households and is one of the fastest-growing commercial areas in the county. It is projected that Estero is currently and will continue to experience an 18 percent annual rate of growth in commercial employment and an 8 percent annual increase in service sector employment through 2010, far exceeding the County's annual rates of growth in similar industries.⁶⁴

Estero's booming job market is creating a need for lower-wage workers. The need is already evident. A job fair was held outside of Lee County in Immokalee to recruit service sector workers to new businesses in the Estero area.⁶⁵ Where these workers will come from, and where they will live, has significant financial implications for Lee County.

Currently, it is unlikely many of the needed lower-wage workers will live in Estero. Estero median housing value (\$153,800) is 94 percent higher than Lehigh Acres. The lack of affordable housing located nearby Estero's booming job market means that lower-wage workers will have to travel distances to provide employment for the area.

To illustrate the public costs associated with lower-wage workers traveling distances for employment, two scenarios are presented.

The first scenario represents the current public cost of Lehigh Acres' workers' commuter trends. To calculate this cost, average mean time is used to derive an approximate trip length to work estimation. This number is then multiplied by the Lee County Department of Transportation's (DOT) valuation for road impact. Lee County's DOT estimates that it costs the public \$128 per mile over a twenty-year period.⁶⁶ Once the public cost of a trip is established, a public cost per 1,000 workers traveling at these commuter rates is derived.

The second scenario represents the projected public cost if these same workers lived within a 5-mile driving radius of Estero.

Workforce projections for Lee County indicate an additional 32,089 service sector and wholesale/retail workers will enter the Lee County job market by 2008.⁶⁷ If half these new workers, or 15,000, lived within a 5-mile radius of their employment (whether it is Estero or other employment centers in Lee County), the public cost would be substantially reduced.

Chart 6.1 – Transportation Infrastructure Costs			
Current Public Cost		Public Cost with Reduced Worker Commute	
Lehigh Acres worker average trip length to work - roundtrip ⁶⁸	44 miles	Worker average trip length to work located in Estero – roundtrip	10 miles
Cost per vehicle mile traveled over a twenty(20)-year period ⁶⁹	\$128	Cost per vehicle mile traveled over a twenty-year period ⁷⁰	\$128
Public cost per roundtrip	\$5,632	Public cost per roundtrip	\$1,280
Public cost of 1,000 workers traveling 44 miles for twenty (20) years	\$5,632,000	Public cost of 1,000 workers traveling 10 miles	\$1,280,000
Public Cost for 1,000 workers for 20 years (\$5,625,600 - \$1,280,000)=			\$4,352,000
Public Cost for 15,000 workers for 20 years (\$4,345,600 X 15,000) =			\$65,280,000
Annual Transportation Infrastructure Costs for 15,000 Workers traveling great distances to work (Total / 20 years)			\$3,264,000

7

Detail of Social Cost Indicators - Education

"In America, housing policy is school policy."

- David Rusk

The relationship between education and housing is well documented, as Chart 7.1 illustrates. The more stable the home a child comes from, the more likely s/he will succeed in school, and later in the workforce. To illustrate the public costs of not providing adequate affordable housing to Lee County families, key indicators were identified within the School District that correspond most closely with established research in the field of education and housing. Indicators were identified with the assistance of Lee County School Districts' Office of Welfare and Attendance, Student Remediation, program officers of the District's homeless services and student mobility, the Office of the Budget, and others.⁷¹ Data on income of students who use specific services is unavailable. Eligibility for free or reduced priced lunch programs is used to create an income parameter which is then applied to the housing indicator (the percentage of rental households at or below 80% AMI, and the degree of residential mobility).⁷² This under- represents the full cost, because the income eligibility requirements for the free and reduced lunch programs are less than 80% AMI.

Chart 7.1 – Education Indicators

Key Indicator	Supporting Research	Housing Indicator	Calculation	Cost
Supplemental Academic Instruction Funding	Homeownership is related to children scoring 9% higher on math scores, 7% higher on reading scores, and a reduction of children’s behavioral problems by 3%. ⁷³ Supplemental Academic Instruction (SAI) provides funding for remedial assistance and is based on the number of students who perform “minimally” or “substantially below” in standardized testing, categorized as (L1) and (L2).	% of rental households	$ \begin{aligned} & \text{Estimated number of Level 1 and Level 2 students (7,496)}^{74} \\ & \times \\ & \% \text{ of children eligible for free or reduced lunch (47\%)}^{75} \\ & \times \\ & \% \text{ of rental households at or below 80\% AMI (50\%)}^{76} \\ & \times \\ & \text{Estimated SAI funding per L1/ L2 student (\$1,056)}^{77} \end{aligned} $	\$1,860,207
Absenteeism 1: Office of Student Welfare & Attendance and Social Workers	Students who move frequently are more likely to have low attendance rates. Average reading scores are 50% lower in students who move three or more times than those of students who do not move. Students who are absent 20% of the time score 20 points lower than students who do not move. ⁷⁸ The Lee County School District Office of Student Welfare & Attendance enforces compliance of attendance laws. Social Workers provide care and track referrals. ⁷⁹	Degree of residential mobility	$ \begin{aligned} & \text{Average number of students accessing social work referral system (8,679)}^{80} \\ & \times \\ & \% \text{ of children eligible for free or reduced lunch (47\%)}^{81} \\ & \times \\ & \% \text{ of residential mobility (25\%)}^{82} \\ & \times \\ & \text{Cost per student to provide Office of Student Welfare & Attendance services (\$146.89)}^{83} \end{aligned} $	\$149,796
Absenteeism 2: Para-professionals	See above. Paraprofessionals – teaching aides – provide support for students who are falling behind in class work or who need additional assistance to succeed in school.	Degree of residential mobility	$ \begin{aligned} & \text{Students in Lee County School District (60,553)}^{84} \\ & \times \\ & \% \text{ of children eligible for free or reduced lunch (47\%)}^{85} \\ & \times \\ & \% \text{ of residential mobility (25\%)}^{86} \\ & \times \\ & \text{Cost per student to provide paraprofessionals (\$336.50)}^{87} \end{aligned} $	\$2,394,178
Total Annual Education Indicator Costs:				\$4,404,181

8

Detail of Social Cost Indicators – Health Care

Asthma and teen pregnancy is associated with the stability and condition of housing.

Research establishes a relationship between housing conditions and the extent to which people are healthy. Representatives from Lee County Public Health Department, Family Health Centers of Southwest Florida, the Southwest Florida Health Planning Council, State of Florida Health Statistics analysts and Lee County Memorial Hospitals helped to verify key health care indicators, and to identify extent to which these indicators occur in Lee County.⁸⁸ To adequately reflect health care costs, both direct medical costs (inpatient and outpatient services, medical visits and medications) and indirect costs,

including the time lost from school and work as a result of the illness and ensuing morbidity and mortality, must be considered. Direct and indirect costs are derived from data produced at the national level. National cost estimations are then applied to local occurrences. The prevalence of the housing indicator (the degree of substandard housing and the degree of residential mobility) in Lee County is then used to isolate the housing impact on the health care indicator. Cost considerations are derived for asthma and teen pregnancy. Other health care related indicators are noted but not quantified.

Chart 8.1 – Health Care Indicators

Key Indicator	Supporting Research	Housing Indicator	Calculation	Cost
Teen Pregnancy	A child who never moves is nearly one-third less likely to become an unmarried teen mother than a child who moves four times, other factors being equal. ⁸⁹ Taxpayers spend nearly \$7 billion each year (1996 dollars) to address the social issues resulting from births by girls under the age of 18. Costs include: \$2.2 billion in welfare and food stamp benefits; \$1.5 billion in medical costs; \$900 million in foster care expenses; \$1 billion in additional prison construction; and \$1.3 billion in lost tax revenue from reduced productivity. ⁹⁰ Lee County had 200 births to mothers under age 18 in 2000. ⁹¹	Degree of housing mobility	<p><i>Estimated cost of teen pregnancies in Lee County (\$8,000,000)⁹²</i></p> <p>x</p> <p><i>% of people in community who are at or below 80% AMI (38%)</i></p> <p>x</p> <p><i>% of residential mobility (25%)</i></p>	\$ 760,000
Asthma	Childhood asthma is linked to poor housing conditions. ⁹³ Asthma rates are increasing most rapidly among low-income children in substandard housing, in part because these children do not have air conditioning and cannot afford anti-inflammatory medications, shots and medical treatment. ⁹⁴ The United States spends \$4.6 billion a year caring for children with asthma; more than twice the dollars are spent on children with asthma as on children without asthma. ⁹⁵	Degree of substandard housing	<p><i>Estimated cost of total asthma cases in Lee County (\$4,998,420)⁹⁶</i></p> <p>x</p> <p><i>% of people in community who are at or below 80% AMI (38%)</i></p> <p>x</p> <p><i>% of people in community who are at or below 80% AMI and live in substandard housing (13%)</i></p>	\$246,922
Total Annual Health Care Indicator Costs:				\$1,006,922

Other Social Costs – Health Care

Lead-Based Paint Poisoning The Centers for Disease Control calls lead-based paint the most serious environmental health hazard for children today.⁹⁷ The major cause of lead poisoning in children is exposure to older houses with deteriorating paint and lead dust inside the home. Often renters are at a higher risk because landlords may not be aware that the paint contains lead or may not want to pay for repainting.⁹⁸ Lead-poisoned children are: 7 times more likely to drop out of school; 6 times more likely to have a reading disability; have significantly lower IQ's, attendance rates, class rankings and vocabulary scores; are associated with attention deficit disorder, hyperactivity, and aggressive and anti-social behavior and crime in later life.⁹⁹ Lee County had 7 reports of lead poisoning in 2000.¹⁰⁰

Salmonella Poisoning Children living in overcrowded housing conditions are vulnerable to salmonella poisoning.¹⁰¹ Lee County had 107 cases of salmonella poisoning in 2000.¹⁰²

Anemia More than 120,000 children suffer from anemia because their families cannot afford both rent and food.¹⁰³ Anemia can become a serious problem if left untreated. Symptoms include fatigue, weakness, and impaired mental function. Data is unavailable for Lee County.

Transportation Health care costs associated with growth are compelling as well. Increasingly, studies are linking low-density, auto-dependant suburban developments to a higher incidence of health problems, in part due to the unavailability of viable walking and bike riding alternatives.¹⁰⁴ Worsening traffic conditions that result from low-density development are also linked to asthma caused by polluted air.¹⁰⁵

9

Findings and Conclusion

The need for affordable housing costs Lee County citizenry over \$249 million each year.

The following findings result from an analysis of the public costs associated with inadequate affordable housing in Lee County, Florida.

1. There is inadequate affordable housing in Lee County, Florida

Ample research supports the finding that Lee County does not have enough housing that is affordable to families living at or below 80% Area Median Income.

- The 2002 hourly wage needed to buy a median priced home in Lee County (\$154,000) is \$25.87 – far exceeding the \$14.86 a fire fighter earns, or the \$9.66 a receptionist earns in Lee County.
- The development of affordable housing is declining. The percentage of single-family units priced at \$120,000 or less fell from 40 percent of all homes built in 1999 to 26 percent of all units built in 2001.
- The average cost of a two-bedroom rental apartment leapt from a 3 percent increase between 1999 and 2000 to a 25 percent increase between 2000 and 2001.
- It is estimated Lee County will need 30,000 units of owner-occupied housing and 11,493 rental units by the year 2010.

2. The need for more affordable housing costs Lee County citizenry over \$249 million annually and is expected to rise with growing unmet need

This study calculates the public costs associated with inadequate housing in three sectors of the community: lost economic opportunity; transportation infrastructure; and the direct and indirect social costs related to education and health care. This study concludes it costs Lee County citizenry:

- **\$240.7 million per year in lost economic opportunity**
 - \$158.8 million - lost jobs and wages as a result of not developing needed housing
 - \$78.6 million - lost economic opportunity as a result of families spending too much money on housing
 - \$3.3 million - lost property tax revenue
- **\$3.2 million per year in transportation infrastructure**
 - For every 15,000 workers who must travel great distances to work.

- **\$5.4 million per year in education and health care social indicators**
 - \$4.4 million – education indicators
 - \$1 million – healthcare indicators

Public cost figures are for 2002. These costs are expected to rise in subsequent years as the need for affordable housing outpaces efforts to increase affordable housing opportunities, absent aggressive measures.

3. Lee County needs to initiate an aggressive affordable housing development strategy

Currently in Lee County, an average of 1,000 single-family units valued at \$120,000 or less are built each year. This number would have to be doubled to 2,000 units the first year, and then assume a 12 percent increase in housing production each year following to meet the community's need for 30,000 owner-occupied affordable housing units by the year 2010. This can be accomplished by adopting an aggressive affordable housing development strategy that can include many innovative approaches.

The Lee County Ad Hoc Affordable Housing Working Group developed recommendations to increase homeownership, all of which serve well the need for increased affordable housing opportunities. These recommendations have been reviewed, changed and subsequently endorsed by the Lee County Affordable Housing Committee and the Lee County Board of County Commissioners Management and Planning Committee.¹⁰⁶ The following is an abbreviated list of these recommendations; the full text can be found in Appendix D page 34 of this study.

- forgiving overdue property taxes and liens on vacant properties identified by non-profit housing providers
- establishing an Affordable Housing Land Bank Program
- making available surplus county land for affordable housing development
- updating the County's affordable housing needs assessment
- establishing an Affordable Housing Impact Fee Trust Fund
- establishing alternative design and development review standards to promote in-fill housing
- leveraging funds for affordable housing, including tax-exempt bond funds

- diversifying the economy to enhance employment that pays wages adequate for existing housing
- educating non-profit developers on current state tax incentives
- encouraging employer assisted housing programs
- establishing a non-profit mortgage company
- encouraging local lenders to provide innovative banking products
- educate all stake holders on existing housing assistance programs
- increasing housing rehabilitation activities
- analyzing the need for affordable housing generated by development, identifying who is responsible for meeting that need and how that need can be met

These are very important steps for the community to take of particular importance are the steps to:

- **Establish a Local Housing Trust Fund** Over 130 states, counties and cities nationwide operate a fund established specifically for the development of affordable housing. Successful housing trust funds have an ongoing source of revenue and are collaborative with decision-making representation from housing industry, local government and consumers. *For more information on developing a local housing trust fund, see the Center for Community Change Housing Trust Fund Project. www.communitychange.org*
- **Implement Inclusionary Zoning** One of the most successful community-based efforts to increase the production of affordable housing is inclusionary zoning. Inclusionary zoning reserves a specific percentage of housing units for lower-income households in new developments. The community establishes thresholds for eligible projects, the percentage that need to be affordable, and the duration of affordability. *For more information and for models of successful inclusionary zoning, see www.inhousing.org*
- **Work with Employers to Encourage Employee Homeownership Incentives** Increasingly, employers are recognizing that workers who have inadequate housing are more likely to move frequently – causing lost days on the job – and to relocate – creating expensive retraining costs due to employee turnover. Employer-assisted housing programs include down payment assistance, low-interest loans, and the actual creation of housing units. *For more information on employer-assisted housing programs, see*

For Further Study This study is a starting point for Lee County to better understand the interplay of affordable housing and the economy. This study proposes a methodology to better understand the way that current public costs are associated with inadequate affordable housing. There are areas that were beyond the scope of this project, and could prove useful next steps.

1. **Conduct a fiscal impact analysis** As communities grow, questions of where to direct growth and how to pay for it emerge. Lee County can benefit from a fiscal impact analysis, which would provide a clearer picture of the costs to infrastructure, transportation, school construction and water and sewer that result from growth
2. **Calculate the amount of money it would cost to meet the affordable housing needs of Lee County** Establishing a firm understanding of the cost to build 30,000 units, what types of units they would be, and how they will be paid for will give citizens a better understanding of the commitment needed to house Lee County families.

This study establishes the need – and quantifies the public cost – of inadequate affordable housing in Lee County. This analysis has tremendous value to business leaders, developers, housing policy makers, neighborhood groups, the real estate community, and government in general, to make good decisions for the community as it grows. Homeownership is a cornerstone for many communities that seek neighborhood stability, a thriving economy, and overall well being. Understanding the interplay of housing and the economy is significant to increasing housing opportunities for all Lee County citizenry

Appendix A: Housing Conditions in Lee County

Housing impacts health and ability to succeed in school and in the workforce.

Housing conditions measure the safety, adequacy and affordability of a community's housing stock. Three housing conditions are considered in this study: the degree of **Cost Burden**, **Substandard Conditions**, and **Overcrowding**. In addition, this study considers the impact of **Residential Mobility** as a factor.

The extent to which residents live with these housing conditions impacts their overall health and ability to succeed in school and in the workforce. Where data is unavailable for the purposes of this study, assumptions are made and clearly stated.

Chart A- Housing Conditions in Lee County

Housing Indicator	Definition	Extent of the Indicator in Lee County	How this Indicator is Applied in the Study
Cost Burden	A household is cost burdened if it spends more than 30% of its income on housing. ¹⁰⁷ For homeowners, housing costs include mortgage, principal, interest & taxes; for renters, housing costs are rent and utilities.	29%, or 50,000, Lee County households of all income levels are cost burdened. ¹⁰⁸ 66% of these cost burdened households have incomes at or below 80% AMI. ¹⁰⁹	Cost burdened households have less money available for other goods and services, such as health care, food, childcare and retail spending. Cost burden is used in this study to illustrate lost economic opportunity when income is spent on housing rather than on goods and services.
Substandard Conditions	A dwelling is substandard if it is dilapidated, does not have operable indoor plumbing, usable toilet or shower, electricity or safe electricity, safe or adequate heat, a kitchen, or has been declared unfit for habitation. ¹¹⁰ Lead-based poisoning is an important indicator of substandard housing. The major cause of lead poisoning in children is exposure to older houses with deteriorating paint and lead dust inside the home. ¹¹¹	In 1990, 6.4% of owner-occupied and 1.4% of renter-occupied homes were substandard. ¹¹² 2000 Census data is not yet available for substandard housing. Using 1990 percentages for more recent data on total homes in Lee County, it is estimated that 8,710 dwellings are substandard. This represents 13% of households at or below 80% AMI. There were 106 cases of lead-based poisoning in Lee County, 1996 – 1999. 74% of cases were in areas where housing was built prior to 1979. ¹¹³	Research shows a relationship between children living in substandard conditions and overall health and ability to succeed in school. ¹¹⁴ Lead-based paint poisoning is linked to learning disabilities and antisocial behavior. ¹¹⁵ Data is unavailable on the income level of people living in substandard housing. This study assumes 100% of residents in substandard housing are at or below 80% AMI.
Overcrowding	The most common measure of overcrowding is where there is more than one person per room. For this purpose, all rooms in a dwelling are counted, not just bedrooms.	2000 US Census data is not yet available. In 1990, 4,492 units were overcrowded. ¹¹⁶ Using 1998 numbers 65,095 households were at or below 80% AMI. 7% were overcrowded.	Overcrowding is linked to health care concerns, such as salmonella poisoning.
Residential Mobility	Residential mobility is measured by the number of times a student changes their residential address within a school year. In Lee County, student mobility is calculated as all student withdrawals and reenrollments divided by net enrollment. ¹¹⁷	Mobility rates vary widely between schools in Lee County, from a low of 7.4% to a high of over 100%. ¹¹⁸ A review of address changes for the 2001-2002 school year revealed 37% of elementary-age children eligible for the free or reduced lunch program moved one or more times during the school year. This is consistent with current mobility research that finds 1 in 4 low-income students move one or more times during a school year, and other studies that link income and mobility. ¹¹⁹	Frequent moves are linked to poor school performance and attendance rates, less likelihood of graduating, and greater likelihood of teen pregnancy. ¹²⁰ Based on other research findings, this study assumes 25% of students at or below 80% AMI experience residential mobility. Residential mobility is considered in estimating social costs related to schools and health care.

Appendix B: Methodology

This study uses the U.S. Department of Housing and Urban Development standard of affordability, which states the maximum a household can spend on housing costs is 30 percent of household income.

Estimating lost economic opportunity

Lost consumer spending is the estimated amount of money households at or below 80% Area Median Income (AMI) overspend on housing, meaning they spend more than 30% of their income on housing costs. For homeowners, housing costs include principal, interest, taxes and insurance. For renters, housing costs include rent payments and utilities. This study does not consider utility payments in rental calculations. To estimate the amount of money households overspend on housing, the *maximum income allowable* for very low-income households (below 50% AMI) and low-income households (51% – 80% AMI) is established. This study utilizes the Florida Department of Community Affairs and the Ad Hoc Affordable Housing Incentives Committee of the Lee County Board of County Commissioners for maximum allowable income. To ensure that lost consumer spending is not overestimated, a weighted average *adjusted income* is established to more closely represent the amount of cost burden households experience within each income bracket. Data is unavailable regarding the specific amount of overspending for income brackets within each maximum allowable income group for Lee County. To estimate the breakdown of overspending per income bracket, the extent of cost burden within income brackets was derived from the Tampa/St. Petersburg MSA, U.S. Census Bureau, 1998. The adjusted income is then multiplied by 30 percent to establish a *maximum spent on housing* allowable to not be considered cost burdened. To estimate the *percentage of cost burden* within each maximum allowable income group for Lee County, Tampa/St. Petersburg MSA data on degree of cost burden is used. By multiplying *percentage of cost burden* by *adjusted income*, an *actual housing cost* can be approximated. This number can then be subtracted from *maximum spent on housing* to establish a lost consumer spending amount. This process was applied to homeowners and renters in very low-income and low-income households.

Estimating lost jobs and wages

This study uses the National Association of Home Builders estimations to anticipate the lost jobs and wages represented by not building 30,000 units of owner-occupied, single-family, affordable housing. Needed rental units are not considered in this calculation.

Estimating lost property taxes

This study estimates the property tax revenue for 30,000 units valued at \$120,000 each built over a nine-year period. It assumes residents access the \$25,000 homestead exemption, applies the 2002 average tax bill for unincorporated Lee County, assumes residents are assessed no other tax mills, and assumes the County has a 95 percent collection rate. An annual rate of growth of 12 percent is used to see the economic impact of building 30,000 units by 2010.

Estimating transportation infrastructure costs

This study utilizes U.S. Census Bureau data on mean travel time to work as the basis for estimating an *average trip length* for residents of Lehigh Acres. *Average trip length* is based on assuming a vehicle averages 45 miles per hour during a trip from home to work. *Cost per vehicle mile traveled* is based on the

Lee County Road Impact Fee Update, April 2000. Traffic Analysis Zone data from the Southwest Florida Regional Planning Council is used to project employment growth in Estero.

Estimating social costs

Quantifying social costs is an imperfect science. Assumptions must be made on a broad set of variables, including housing conditions, income levels, household spending choices, and more. Perhaps the most difficult task of this study is to develop a methodology to isolate the extent to which inadequate housing plays a role in the community's efforts to ensure people get good educations and become equipped to succeed in the workforce, and become or stay in good health. Through the literature review and through extensive conversations with housing policy analysts around the country, it is apparent that no such methodology currently exists. This methodology is a starting point and should be refined as better data and analysis is developed. The methodology used is as follows:

1. **Two indicators are identified for each social cost.** A *social indicator* is identified, based on existing research and through conversations with Lee County (governmental as well as non-governmental) professionals, and a *housing condition indicator* is identified based research and on existing housing conditions in Lee County.
2. **The cost of the social indicator is then established.** This cost is established through the assistance of Lee County professionals.
3. **An income analysis of the social indicator is estimated.** Where data is available, the extent to which users of the social indicator are at or below 80% AMI is used. Where income data is not available, other income indicators, such as eligibility for free and reduced lunch, are used.
4. **An income analysis of the housing indicator is estimated.** Where data is available, the extent to which households at or below 80% experience a housing condition is used. Where data is not available, assumptions are made and clearly stated.
5. **A calculation is made:**

$$\begin{array}{c} \textit{Cost of the social indicator} \\ \times \\ \textit{Estimated \% of users who are at or below 80\% AMI} \\ \times \\ \textit{Extent to which housing indicator is} \\ \textit{experienced by households at or below 80\% AMI} \\ = \\ \textit{Estimated Social Cost due to Housing} \end{array}$$

Appendix C: Lehigh Acres & Estero CDP

Source: Southwest Florida Regional Planning Council, 2002

Appendix D: Affordable Housing: Recommendations to Increase Homeownership

Recommendation #1 *The County should look into forgiving overdue property taxes and liens into working out a payment plan on assessments on vacant properties identified by non-profit housing providers to make it more attractive and affordable for non-profit housing providers to build in-fill affordable housing. The county and the non-profit housing providers should also work with other taxing districts to forgive overdue taxes.*

Recommendation #2a *The County should look into establishing an Affordable Housing Land Bank Program, much like the Conservation 2020 Program, for the acquisition of land for future affordable housing development.*

Recommendation #2b *The County should explore making available suitable surplus county land for affordable housing development.*

Recommendation #3 *The County should fund an update its affordable housing needs assessment and also include information on where the largest county employers are located and where their employees live, information on wages and incomes in the county by employment sectors, the cost on the county's physical and social infrastructure of not developing affordable housing, and the most appropriate opportunities and incentives to provide affordable housing. This study should be coordinated with the existing Lee County Workforce Study. Coordinating with the Workforce Study, should enable the County to continue to work towards diversifying its economy in a way that will recognize and enhance the ability of County residents to pay for standard housing that is affordable to them.*

Recommendation # 4 – N/A (deleted by the BOCC Management & Planning Committee)

Recommendation # 5A – N/A (deleted by the BOCC Management & Planning Committee)

Recommendation # 5b *As an alternative to the above paragraph, the County 's goal should be to establish an Affordable Housing Impact Fee Trust Fund to pay impact fees for a designated number of affordable houses countywide. The funding for the Trust Fund could come from a variety of sources to include general funds; the interest generated on the existing impact fee fund and density bonus funds. Some or all of the impact fees for a particular affordable house could be paid out of this Trust Fund.*

Recommendation # 6 *Lee County, on a neighborhood basis, should establish alternative design and development review standards to promote affordable housing especially in-fill housing. These alternative standards for affordable housing will allow a more efficient use of land as compared with the typical single-family subdivision. These flexible design options will incorporate cost saving measures without compromising the quality of the resulting subdivision*

Recommendation #7 *The County will consider ways to leverage an array of federal, state, and local funds for affordable housing to include tax-exempt bond funds.*

Recommendation #8 *The County should continue to work towards diversifying its economy, but do so in a way that will recognize and enhance the ability of County residents to pay for standard housing that is affordable to them. This can be an incentive for attracting businesses to Lee County by helping to meet the affordable housing needs of incoming businesses. This diversification should increase the wages of county workers and help them to afford housing. (Refer to Recommendation #3, which calls for several studies including a study on the public costs of not providing affordable housing.)*

Recommendation #9 *Affordable housing non-profit developers to learn more about state tax incentives, such as the Community Contributions Tax Credit Program as well as other incentives as a means to diversify their funding sources.*

Recommendation #10 *Major public and private employers should be encouraged to help their employees acquire affordable homes with down payment assistance. Staff should contact representatives of various newspapers to see if it was possible to place a symbol, such as a logo, on a classified ad that would indicate which employers offered some type of affordable housing assistance for its employees, who qualify for affordable housing assistance. This would assist applicants when they are deciding where to apply.*

Recommendation #11 *Explore the feasibility of establishing a non-profit mortgage company for hard to serve applicants.*

Recommendation #12 *Encourage local lenders to continue to provide innovative banking products that will encourage affordable housing and explore the re-establishment of the Banking Consortium. Local lenders should be encouraged to provide below market financing for*

Recommendation #13 *Educate the public, affordable housing providers, lenders, real estate professionals and other employers on the availability of affordable housing programs and incentives and promote credit counseling to potential homebuyers.*

Staff Comment #14 *The SHIP program is a construction program. At least 75% of SHIP funds must be spent on construction activities, (which includes rehabilitation activities); Lee County has endeavored to spend virtually all its funds on construction (brick and mortar) activities. Downpayment assistance for an existing home is not a construction activity. A household is aided in the purchase of a house but there is no associated construction activity. However, once a household acquires an existing home, SHIP funds have been used for the rehabilitation of the existing owner-occupied homes, as rehabilitation is a construction activity.*

Recommendation #15 *With criteria determined by the Board of County Commissioners an analysis should be conducted to determine: a) the need for affordable housing generated by a development, b) who has the responsibility for meeting that need and c) how that need will be eliminated or mitigated*

Endnotes

- ¹ U.S. Census Bureau, 2000.
- ² Communities in California are often cited for their proactive policies regarding growth management and housing. California communities develop these policies in part as a response to existing crises in housing and affordability. *Hometown Crisis: How Marin's soaring housing costs are affecting the people who live and work here*. Marin Independent Journal, June 2001.
- ³ 80% Area Median Income in Lee County for a family of four is \$39,200. *Source: Affordable Housing: Recommendations to Increase Homeownership* A report prepared by the Ad Hoc Affordable Housing Incentives Committee of the Lee County Board of Commissioners, February 2002, p. 1.
- ⁴ *Affordable Housing Needs Assessment for Lee County* Shimberg Center for Affordable Housing, 2000. Note: In a telephone conversation with a Shimberg Center analyst on May 1, 2002, it was revealed that there are caveats to using the Surplus/Deficit Model that established the projected need for 30,000 units by 2010, as there are many variables that determine how people choose their housing. Nonetheless, it is a starting point for Lee County to work from in its analysis of housing need.
- ⁵ *The Affordable Housing Study Commission, Final Report 2001* Florida Department of Community Affairs.
- ⁶ "(d) the proposed sales prices of new...units, which can be lower but may not exceed 90% of median area purchase price established by U.S. Treasury Department;" Chapter 67-37.005(5)(d) State Housing Initiatives Partnership Program, Florida Administrative Code. (\$121,536 is the 90% of median area purchase price established for Lee County, Florida by the U.S. Treasury Department.)
- ⁷ Wiewel, Wim, et al. *Private Benefits and Public Costs: Policies to Address Suburban Sprawl*. Policy Studies Journal, v27n1, 1999, p. 104.
- ⁸ Arigoni, Danielle. *Affordable Housing and Smart Growth: Making the Connection*. U.S. Environmental Protection Agency, 2001, p. 15.
- ⁹ See Donald R. Haurin, Toby L. Parcel, R. Jean Haurin, *The Impact of Homeownership on Child Outcomes*, Joint Center for Housing Studies of Harvard University, October 2001; *Kids Mobility Project Report*, Family Housing Fund. www.fhfund.org; and Hartman, Chester, *High Classroom Turnover: How Children Get Left Behind*, Citizens' Commission on Civil Rights.
- ¹⁰ Lee Memorial Health System Community Report, Spring 2002.
- ¹¹ Economic Development Office of Lee County, analysis provided by Denny Grimes, VIP Realty Group using Florida Gulf Coast MLA database.
- ¹² Lee County Office of the County Manager, May 2, 2002.
- ¹³ Lee County Realtor Dan Cohn, May 2, 2002.
- ¹⁴ Florida Agency for Workforce Innovation, Labor Market Statistics, 2001.
- ¹⁵ *Demographic Profile 2002* Economic Development Office of Lee County, p. 15.
- ¹⁶ State of Florida Consolidated Plan, FFY 2000 – 2004, p. 13.
- ¹⁷ *Lee County Three Year Strategic Plan, FY 2000 – 2002*.
- ¹⁸ *The Affordable Housing Study Commission, Final Report 2001*.
- ¹⁹ These numbers are arrived at using 1990 US Census percentages and applying them to more recent housing data.
- ²⁰ Lee County Department of Community Development, June 11, 2002.
- ²¹ *Demographic Profile 2002*, p. 15.
- ²² 1990 source: The Lee Plan 2000 Codification. 2000 source: U.S. Bureau of Census, 2000, Table DP-1.
- ²³ *The State of the Nation's Housing: 2001*, Joint Center for Housing Studies, p. 13.
- ²⁴ Homeownership estimates based on *Affordable Housing Needs Assessment for Lee County*. Rental unit estimates based on *The Affordable Housing Study Commission, Final Report 2001*.
- ²⁵ *The Affordable Housing Study Commission, Final Report 2001*.
- ²⁶ *Ibid.*
- ²⁷ *2000 Homeless Continuum of Care Lee County*, p. 12.

²⁸ Telephone conversation with Dr. Gary Lounsberry, Southwest Florida Coalition for the Homeless, April 16, 2002.

²⁹ *Demographic Profile 2001*, p. 2.

³⁰ *Ibid*, p. 3.

³¹ *Affordable Housing: Recommendations to Increase Homeownership*, p. 10.

³² *Out of Reach* National Low Income Housing Coalition, September 2001.

³³ *Affordable Housing Needs Assessment for Lee County*.

³⁴ The National Association of Home Builders estimates that 2,448 jobs are created per thousand single-family homes built, representing \$79,400,000 in wages. Data is based on national estimates.

www.nahb.org

³⁵ *Lee County Three Year Strategic Plan, FY 2000 – 2002*.

³⁶ *The Affordable Housing Study Commission, Final Report 2001*.

³⁷ *Affordable Housing: Recommendations to Increase Homeownership*.

³⁸ *Ibid*.

³⁹ *The Affordable Housing Study Commission, Final Report 2001*.

⁴⁰ *Ibid*.

⁴¹ The average income of a cost burdened household within an income parameter (ex: “Below 50% AMI”) for Lee County is unavailable. To estimate, the percentages (not real numbers) of households within income parameters cited in the American Housing Survey for the Tampa/St. Petersburg MSA, US Census Bureau, 1998 are used. The Tampa, St. Petersburg msa is used because it is most applicable data available.

⁴² The estimated cost burden within an income parameter (ex: “Below 50% AMI”) for Lee County is unavailable. To estimate, the percentages (not real numbers) of households within income parameters cited in the American Housing Survey for the Tampa-St. Petersburg Metropolitan Area, US Census Bureau, 1998 are used.

⁴³ The extent to which households experience cost burden is estimated by applying State of Florida Consolidated Plan, FFY 2002 – 2004 statewide housing assistance percentages for households by income, p. 13 to *The Affordable Housing Study Commission*, estimations of actual number of households that are cost burdened.

⁴⁴ The estimated cost burden within an income parameter (ex: “Below 50% AMI”) for Lee County is unavailable. To estimate, the percentages (not real numbers) of households within income parameters cited in the American Housing Survey for the Tampa-St. Petersburg Metropolitan Area, US Census Bureau, 1998 are used.

⁴⁵ The extent to which households experience cost burden is estimated by applying State of Florida Consolidated Plan, FFY 2002 – 2004 statewide housing assistance percentages for households by income, p. 13 to *The Affordable Housing Study Commission* estimations of actual number of households that are cost burdened.

⁴⁶ *Affordable Housing Needs Assessment for Lee County*.

⁴⁷ Estimates developed with assistance from Jim Lewin, Lee County Office of the County Manager.

⁴⁸ “(d) the proposed sales prices of new...units, which can be lower but may not exceed 90% of median area purchase price established by U.S. Treasury Department;” Chapter 67-37.005(5)(d) State Housing Initiatives Partnership Program, Florida Administrative Code. (\$121,536 is the 90% of median area purchase price established for Lee County, Florida by the U.S. Treasury Department.)`

⁴⁹ The homestead exemption allows owner-occupied dwelling units to exempt \$25,000 off the taxable value of the home.

⁵⁰ Florida State Law mandates that a 95% collection rate is assumed in estimating property taxes for budgeting purposes.

⁵¹ Annual Property Tax Revenue is calculated by taking the number of units x average tax bill x a 95% collection rate.

⁵² Nelson, Arthur C., et al. *The Link Between Growth Management and Housing Affordability: The Academic Evidence*. The Brookings Institution, 2002.

⁵³ Burchell, Robert W. (Rutgers University). *Land Use Decision Making: Its Role in a Sustainable Future for Michigan*. MSU Extension, January 9-10, 1996. pp. 1-34. The terms “low-density” and “high-density” are not defined by number of units per acre.

⁵⁴ Using Northeast Consumer Price Index figures, \$1.38 billion in 1990 dollars would equate to \$1.9 billion in 2002 dollars.

⁵⁵ Burchell, Robert W., et al. *Impact Analysis of the New Jersey Interim State Development and Redevelopment Plan, Report II: Research Findings*. Report prepared for New Jersey Office of State Planning, Trenton, NY, 1992.

⁵⁶ Using Southeast Consumer Price Index figures, \$14,700 in 1987 dollars would equate to \$22,652 in 2002 dollars.

⁵⁷ Duncan, James, et al. *The Search for Efficient Growth Patterns: A Study of the Fiscal Impacts of Developments in Florida*. Report prepared for Governor’s Task Force on Urban Growth Patterns and the Florida Department of Community Affairs, July 1989.

⁵⁸ “Lee leaders fighting to get mall developer to help build affordable housing.” Bonita Daily News, March 21, 2002.

⁵⁹ *Demographic Profile 2001*, p. 2.

⁶⁰ Wiewel, Wim, et al.

⁶¹ Lehigh Acres and Estero maps represent approximate Topographically Integrated Geographic Encoding and Referencing System (TIGERS) place borders. TIGERS is a geographic database produced by the US Census to provide census, mapping and boundary information to the public.

⁶² Methodology was developed with assistance from Andy Getsch, Lee County Department of Transportation, Bob Beluschak and Dennis Simon, Lee County Planning Division, and Bob Diogo and Glen Ahlert, Southwest Florida Regional Planning Council.

⁶³ U.S. Census Bureau, Census 2000, Table DP-1.

⁶⁴ Bob Diogo, Southwest Florida Regional Planning Council Traffic Analysis Zone, 2002.

⁶⁵ Telephone conversation with Glen Ahlert, Southwest Florida Regional Planning Council, May 21, 2002. Job fair took place in March 2000.

⁶⁶ \$128 per vehicle mile traveled represents the replacement cost of a roadway. Roadways are intended to have a 20-year lifespan, hence the twenty-year period used. The estimate includes a credit component to compensate for the gas tax revenue that helps to pay for road constructions and maintenance. Source: *Road Impact Fee Update – Lee County, Florida*. Lee County Department of Transportation, April 2000, p. 12.

⁶⁷ *Demographic Profile 2001*, p. 3.

⁶⁸ U.S. Census data provides mean travel time for Lehigh Acres CDP. Trip length is derived by assuming a vehicle averages 45 miles per hour during a trip from home to work.

⁶⁹ *Road Impact Fee Update – Lee County, Florida*.

⁷⁰ Ibid.

⁷¹ Indicators were developed with assistance from Mattie Young, Dr. Doug Whittaker, Annette Tartaglia, Mike Smith, Mike Olliff, Sr. Richard Itzen, Lee County School District.

⁷² Eligibility for free or reduced price lunches is a standard measurement of low-income children in school.

⁷³ Donald R. Haurin, et al.

⁷⁴ SAI funding is based on individual student test scores, not on total number of students. To derive an estimated number of students, a 25% duplication is assumed. Source of data: Lee County School District, 2002.

⁷⁵ Florida Department of Education. Average eligibility is derived from data for elementary eligibility (52.1%) and middle school eligibility (42.4%). Data is unavailable for high school-age students.

⁷⁶ *The Affordable Housing Study Commission, Final Report 2001.*

⁷⁷ Estimated SAI funding per Level and Level 2 students is derived from Lee County School District total allocation for 2000-2001 (\$7,918,789) divided by the estimated number of Level 1 and Level 2 students (7,496).

⁷⁸ *Kids Mobility Project Report.*

⁷⁹ Social Workers provide key assistance to students and families struggling with patterns of non-attendance. A centralized mainframe referral system tracks the type and number of referrals in a given year. The system is compliant with state law, which requires specific school-based interventions in response to students who fail to show for school within established parameters.

⁸⁰ Lee County School District Office of Student Welfare and Attendance, average number of students 1998-2001.

⁸¹ Florida Department of Education. Average eligibility is derived from data for elementary eligibility (52.1%) and middle school eligibility (42.4%). Data is unavailable for high school-age students.

⁸² Based on other research, this study assumes 25% of low-income students experience residential mobility. See Appendix A for more information on residential mobility.

⁸³ Estimated Office of Student Welfare & Attendance funding per student is derived from Lee County School District total allocation for 2000-2001 (\$1,274,858) divided by the average number of students accessing the social work referral system (8,679). Lee County School District Budget Office.

⁸⁴ Lee County School District Office of Student Welfare and Attendance, average number of students 1998-2001.

⁸⁵ Florida Department of Education. Average eligibility is derived from data for elementary eligibility (52.1%) and middle school eligibility (42.4%). Data is unavailable for high school-age students.

⁸⁶ Based on other research, this study assumes 25% of low-income students experience residential mobility. See Appendix A for more information on residential mobility.

⁸⁷ Estimated paraprofessional funding per student is derived from Lee County School District total allocation for 2000-2001 (\$20,375,982) divided by total student enrollment (60,553). Lee County School District Budget Office.

⁸⁸ Indicators were developed with assistance from Dr. Judith Hartner and Mary Ellen Miller, Lee County Department of Health, David Halvatzis, Family Health Centers of Southwest Florida, Irene Giniat, Southwest Florida Health Planning Council, and Debbie Kendziorski, Lee Memorial Hospital.

⁸⁹ Haveman, Robert and Wolfe, Barbara, *Succeeding Generations* (New York, NY: Russell Sage, 1994), pp. 250-251.

⁹⁰ “’96 Cost of Teen Pregnancy is Put at \$7 Billion” *New York Times*, June 13, 1996. The study, released by the Robin Hood Foundation, compared the consequences of childbirth for teenage mothers, their children and the fathers of babies with people from the same social background whose first pregnancy was delayed until the woman was 20 or 21. www.ncpa.org/pd/social/socialc.html

⁹¹ Florida Public Health Information Data System, Lee County Public Health Department, 2002.

⁹² Estimate uses a per-teen-pregnancy cost of \$40,000, multiplied by the number of teen pregnancies in Lee County (200). The per-teen-pregnancy cost is based on the national cost of \$7 billion divided by the national number of pregnancies of 175,000. www.ncpa.org/pd/social/socialc.html

⁹³ Daren Briscoe, *Housing Crisis Harmful to Kids* Children's Advocate, September-October, 1999. www.4children.org

⁹⁴ *The State of America's Children Yearbook 2000*, Children's Defense Fund, March 2000.

⁹⁵ Brodsky, Karen, *Overcoming Financial Barriers to Improving Asthma Care for Children*, Center for Health Care Strategies, March 2002.

⁹⁶ Data is not available for actual cost of total asthma cases in Le County. To arrive at an estimate, the total estimated cost of direct medical and indirect costs, including the value of time lost from school and work as a result of asthma morbidity and mortality, for Tampa, Florida (\$11,901,000) is used. This cost is multiplied by the percentage of asthma cases in Lee County versus Hillsborough County (which includes Tampa) (42%). Tampa costs are 1994 numbers. Asthma and Allergy Foundation of America.

www.aafa.org

⁹⁷ *Georgia Consolidated Plan, FFY 2000 Interim Consolidated Plan of the State of Georgia*, Georgia Department of Community Affairs, May 2000, p. 64.

⁹⁸ Strege-Flora, Carson. *Economic Benefits of Investing in a State Housing Trust Fund*, Montana Housing Partnership, Fall 1998, p. 11.

⁹⁹ See Public Health Service (1991). Strategic plan for the elimination of children lead poisoning. Hyattsville, MD: U.S. Department of Health and Human Services. Appendix II. See also H.L. Needleman, A. Schell, et al. "The long-term effects of exposure to low doses of lead in childhood. An 11-year follow-up report," *New England Journal of Medicine*, January 11, 1990, 322:83-88.

¹⁰⁰ Florida Public Health Information Data System, Lee County Public Health Department, 2002.

¹⁰¹ Conversation with Dr. Judith Hartner, Director of Lee County Public Health Department, April 23, 2002.

¹⁰² Florida Public Health Information Data System, Lee County Public Health Department, 2002.

¹⁰³ Daren Briscoe.

¹⁰⁴ Frank, Lawrence, D. and Engelke, Peter. *How Land Use and Transportation Systems Impact Public Health*. Active Community Environments Working Paper 1, Centers for Disease Control, <http://www.cdc.gov/nccdphp/dnpa/aces.htm>.

¹⁰⁵ This was borne out by Atlanta during the 1996 Olympic Games, in which public efforts to discourage vehicle use and to promote mass transit had the unintended effect of dramatically reducing hospitalizations for asthma attacks, particularly among children. The study noted a 23% decrease in morning traffic and a 42% drop in daily hospitalizations got asthma among children between the ages of one and sixteen. Source: Friedman, Michael S et al. *Impact of Changes in Transportation and Commuting Behaviors during the 1996 Summer Olympic games in Atlanta on Air Quality and Childhood Asthma*. Journal of the American Medical Association, February 21, 2001, <http://www.jama.ama-assn.org/issues/v285n7/abs/joc90862.htm>.

¹⁰⁶ Florida Public Health Information Data System, Lee County Public Health Department, 2002.

¹⁰⁷ Nationally recognized measurement, established by U.S. Department of Housing and Urban Development.

¹⁰⁸ *Lee County Three Year Strategic Plan, FY 2000 – 2002*.

¹⁰⁹ *The Affordable Housing Study Commission, Final Report 2001*. Florida Department of Community Affairs.

¹¹⁰ U.S. Department of Housing and Urban Development.

¹¹¹ Strege-Flora, Carson.

¹¹² *Lee County Three Year Strategic Plan, FY 2000 – 2002*.

¹¹³ Ibid.

¹¹⁴ See Briscoe, Daren; and *The State of America's Children Yearbook 2000*.

¹¹⁵ Brodsky, Karen.

¹¹⁶ 1990 US Census Bureau.

¹¹⁷ Lee County School District.

¹¹⁸ Lee County School District.

¹¹⁹ See *Kids Mobility Project Report; The Condition of Education 1995*, National Center for Education Statistics, <http://nces.ed.gov/pubs/ce/c9546a01.html>; *Highly Mobile Students: Educational Problems and Possible Solutions*, ERIC/CUE Digest, Number 73; Dobson, Janet M. et al, *Pupil Mobility in Schools Final Report*, Migration Research Unit, September 2000.

¹²⁰ See Hartman, Chester; Haveman, and Wolfe; *Kids Mobility Project Report*.