

**ECONOMIC IMPACT OF SINGLE-FAMILY
REAL ESTATE DEVELOPMENT IN
UNION COUNTY, NC**

A Report Prepared for

North Carolina Association of Realtors®



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Table of Contents

	Page Number
Executive Summary	iii
Introduction	1
Union County: Economic and Demographic Profile	2
Economic Impact of Single-Family Development in Union County	3
1. Methodology	3
2. Single-Family Residential Development	3
3. Economic Impact of Single-Family Development	5
4. Single-Family Residential Development’s Impact on the Union County Economy.....	6
Fiscal Impact Analysis of Single-Family Development in Union County	7
A Look at Impact Fees and Other Taxes on New Development	10
Appendix A: Union County Property Tax Rates	11
Appendix B: Union County Governmental Revenues	12
Appendix C: Union County Governmental Expenditures	13
Appendix D: Union County Households, 2000	14
Appendix E: Union County Consolidated Governmental Revenues & Expenditures, 2005-00.....	15
Background of the Principal Investigator	16

Executive Summary

This study undertaken for the North Carolina Association of Realtors® explores the economic impact of single-family residential development in Union County, NC. It provides overall estimates of the economic impact stemming from single-family development in the county. The impacts on the county economy are examined using the IMPLAN® (IMpact Analysis for PLANing) model.

A typical 100-home subdivision with a construction cost of \$23,700,000 is estimated to generate an average of \$10,757,371 per year in additional output in the county from the initiation of construction through the first 10 years of occupancy (including the one-year construction phase). The present value of the additional output (calculated at a 4.5 percent discount rate) is \$96,480,924. The average employment gain is 71 net new jobs, with an average wage of \$29,573. The new development is estimated to generate an additional \$706,282 in local tax revenues annually through the first 10 years of operation. The present value of the additional tax revenue is \$5,915,150.

The value of single-family residential building permits is used to estimate the total impact of residential development on the county economy. In 2005, single-family residential building permits totaled \$739 million. Assuming that this level of building was actually put in place, single-family development is estimated to have generated \$335.6 million in additional output in the county. It is responsible for an estimated 2,206 net new jobs and \$65.3 million in additional labor income. In the process, development is calculated to generate \$22 million in extra tax revenue at the local level.

The analysis also provides an estimate of the net fiscal impact of single-family development on local government finances. Single-family residential development is estimated to yield a net fiscal surplus. Net fiscal surplus is the difference between the revenues and expenditures generated by single-family development. The net fiscal surplus generated by the typical 100-home subdivision examined here is estimated to have a net present value of \$853,909, calculated over the first 10 years of occupancy.

In summary, single-family residential development provides substantial economic benefits to Union County in terms of increased income and employment, and the additional economic activity fostered by single-family development generates surplus tax revenues sufficient to offset its potential future tax burden.

While it is easy to point to new housing development as creating the need for new and higher taxes, the problem is not the new homes which create new jobs and which more than pay for themselves. The final section of this paper shows that the real problem is the too rapid growth of government spending. The present study demonstrates that the strong contribution of new single-family housing development to increased income and employment along with its positive fiscal impact make it inappropriate as a target of special taxes.

Introduction

Households in the U.S. have long tended to concentrate their wealth in housing. Sixty-eight percent of U.S. households are homeowners, according to the Federal Reserve's *2001 Survey of Consumer Finance*.¹ The value of the median household's primary residence is equivalent to 71 percent of household net worth. In the third quarter of 2005, investment in single-family residential structures totaled \$425.8 billion, or 3.4 percent of the nation's gross domestic product. This study undertaken for the North Carolina Association of Realtors® explores the economic impact of single-family real estate development in Union County, NC.

The first section provides a profile of Union County. The profile suggests that the pace of residential development in the county is strong and growing.

The second section of the report lays out the methodology used to evaluate the impacts of single-family development. It explains the impact measures and provides overall estimates of the economic impacts stemming from single-family development. This section provides estimates of the total impact of single-family development based on the volume of single-family residential building permits.

The third section provides estimates of the net fiscal impacts on local government finance arising from single-family development. It assesses the impact of development activity on local government receipts and expenditures. Net fiscal impact is the difference between the revenues and expenditures generated by single-family development. If revenues are greater than expenditures, single-family development is described as having a positive net fiscal impact. A positive impact means that the surplus generated by the development will allow local tax rates to be lowered, the level of locally funded services to increase, or a combination of the two. In contrast, a negative impact raises the average cost of services to prior residents because they in effect subsidize the cost of services to new residents.

The final section of the paper looks at the issue of impact fees and other taxes on new development. This section argues that the movement to impose fees and other taxes is being fueled by the growth in government spending.² Although real tax revenues have been rising, they have not risen rapidly enough to fully finance the growth of spending. As a result, some policymakers are seeking to impose special taxes on new development, but the results of this study suggest that the strong contribution of new single-family housing development to increased income and employment along with its positive fiscal impact make it inappropriate as a target of special taxes.

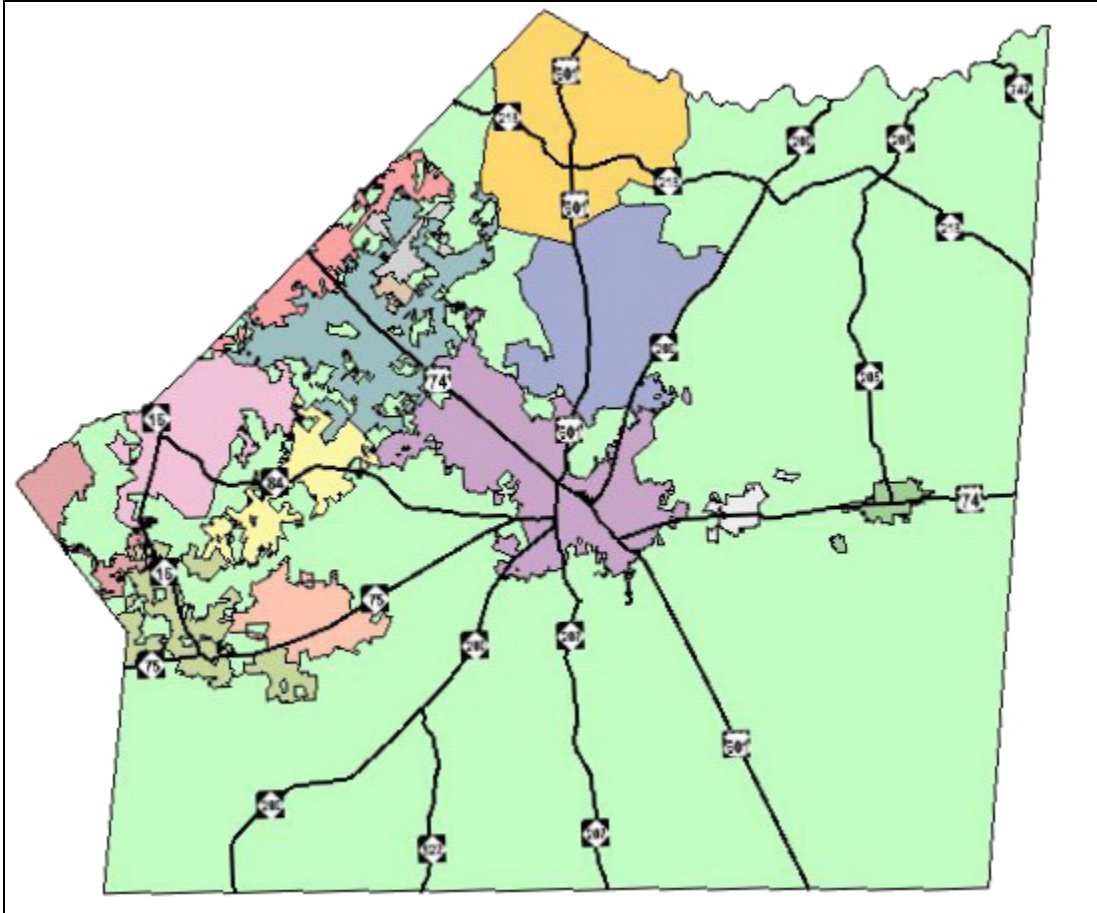
¹ Ana M. Aizcorbe, et al., "Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances," *Federal Reserve Bulletin* (January 2003): 1-32.

² See, for example, Eric Ferreri, "East and West Await Fees Decision," *The News & Observer* (Raleigh, NC), February 4, 2006 (west edition), p. B1.

Union County: Economic and Demographic Profile

Union County is situated in southwestern North Carolina. It lies directly southeast of Charlotte bordering South Carolina to the south (Figure 1). It is the 10th largest of the state's 100 counties with a 2005 population of 162,929. The county's largest communities are Monroe with a 2004 population of 31,234 and Indian Trail with 16,764.

Figure 1: Union County



Source: Union County GIS, <http://maps.co.union.nc.us/sdx/viewer.htm>

The population of the county has grown 5.3 percent annually since 2000, making it the fastest growing county in the state.³ The number of owner-occupied housing units has grown 5.1 percent annually since 2000. In 2005, 81.2 percent of occupied housing units in the county were owner occupied, compared to 68.0 percent nationally.

Median household income in the county was \$56,587 in 2005, or 113.8 percent of the national average. A total of 19.7 percent of households earned more than \$100,000, while 57.2 percent earned more than \$50,000. Average household income was \$71,115.⁴ The median home value in the county was \$152,655. The ratio of median home value to median household income was 2.70, compared to a national average of 3.28, which suggests that housing in Union County is much more affordable than in the nation as a whole. Sales reports obtained from the Union County Tax Office indicate that the average cost of a new home in the county is \$278,824.

³ Population figures are from the NC State Data Center, <http://sdc.state.nc.us/>

⁴ Income statistics and housing values are from ESRA, <http://www.esribis.com/>

Economic Impact of Single-Family Development in Union County

Methodology

The analysis presented here examines the economic impact of new real estate development in Union County, NC. Economic impact is measured in terms of 1) total additional output of all industries in the area, 2) total number of new jobs created, 3) total value added (the sum of all final goods and services produced), 4) total amount of additional personal income (the income of all persons from all sources, including wages, profits, dividends, interest, rents, and transfer payments), 5) the total amount of additional labor income, and 6) total amount of additional city and county tax revenue.

The analysis is conducted using the IMPLAN® (Impact Analysis for PLANing) input-output model that divides the economy into sectors, defined by the good or service produced, where the outputs of one sector are inputs of another. IMPLAN analyzes a computer model that contains 509 sectors of the local economy and reflects the existing structure of the economy using data from the U.S. Department of Labor, Bureau of the Census, and the Bureau of Economic Analysis. IMPLAN was originally developed by the U.S. Forest Service and the University of Minnesota and is now marketed by Minnesota IMPLAN Group, Incorporated. Active users of the IMPLAN model include: NC Dept of Commerce and the NC Department of Parks, Recreation, & Tourism Management.

Single-Family Residential Development

The analysis explores the economic impacts of single-family residential development. Single-family development is examined by looking at the construction and subsequent occupancy of a typical 100-unit, single-family housing project. The assumed specifications for the single-family project are set out in Table 2. The average size of the new homes together with construction and land costs were estimated using data from the Union County Tax Office, Realtor.com, and Newhomes.com.

Table 2: Single-Family Housing Development

New Home Construction:	
Square Feet	2,300
Construction cost	\$237,000
Cost per sq. ft.	\$103.04
Subdivision Cost:	
Number of Homes	100
Land	\$4,182,353
Total Project Cost	\$27,882,353
Total Construction Cost	\$23,700,000

Local mortgage bankers were consulted to estimate the average income of households purchasing new homes in the county. They estimated that the price of a new home averages roughly 2.5 times household income. Accordingly, dividing the average purchase price of the assumed new home of \$278,824 by 2.5 yields an estimate of household income of \$111,530. Average household size is assumed to be 2.81 persons, based on the 2000 Census estimate for homeowner households occupying an individual dwelling unit (see Appendix D) and 2005 estimates from ESRI.com.

Table 3: Economic Impact of Single-Family Development

	Construction Phase	Occupancy Phase	Ave. Ann. Impact through 1st 10 years of Operation	Net Present Value of 1st 10 years of Operation*	Ave. Ann. Impact Through the 1st 10 years of Operation Per \$1,000,000 of Construction Cost
Construction Expenditure	\$23,700,000	n.a.	n.a.	n.a.	n.a.
Output (2005)	\$34,449,174	\$8,388,191	\$10,757,371	\$96,480,924	\$453,898
Employment	308	47	71	n.a.	3.0
Value Added	\$14,184,006	\$2,788,649	\$3,824,591	\$34,688,803	\$161,375
Personal Income	\$13,325,178	\$2,464,291	\$3,451,644	\$31,410,926	\$145,639
Labor Income	\$9,994,858	\$1,301,306	\$2,091,629	\$19,417,919	\$88,254
Ave. Income/Worker	\$32,451	\$27,687	\$29,573	n.a.	n.a.
Local Tax Revenue	\$162,232	\$760,687	\$706,282	\$5,915,150	\$29,801

*Including construction phase, calculated using an interest rate of 4.5 percent.

Economic Impact of Single-Family Development

The estimated economic impact of single-family residential development is shown in Table 3. The table separates the impact of the construction phase that arises because of construction expenditures from the impact that occurs during the occupancy phase. The table shows the average impact through the first 10 years of occupancy, assuming that the construction phase lasts one full year. Also shown are the present values of the impact measures which are calculated assuming a 4.5 percent rate of discount.⁵

The impacts on local property and sales tax revenues are calculated using the IMPLAN model and the average taxes paid per capita shown in Appendix B. Property taxes on the new development are assessed during the occupancy phase. The weighted average tax rate for residential development in the county is estimated at \$0.8706 per \$100 valuation. Details of the calculation of this rate are shown in Appendix A. Other county revenues (arising from other taxes, sales and services) and various miscellaneous revenues are calculated on the assumption that these revenues comprise 43.7 percent of consolidated tax revenues in the county, excluding debt proceeds and intergovernmental transfers. During 2000-2005, other revenues averaged 43.7 percent of the consolidated county total excluding proceeds from debt and intergovernmental transfers (Appendix E).

The 100-home subdivision has a construction cost of \$23,700,000. In the construction phase, the county economy benefits from the multiplier effects of this additional spending, resulting in additional income, jobs, and local tax revenues. During the occupancy phase, the county benefits from the expenditures of the 100 households that occupy homes in the new development, assuming that the households would not reside in the county if the development were not constructed.⁶ The average income of the households is estimated at \$111,530, as discussed above. Households at this income level are estimated to spend 66.7 percent of their before-tax income.⁷

The residential project is estimated to generate an average of \$10,757,371 per year in additional output in the county from the initiation of construction through the first 10 years of occupancy (Table 3). The present value of the additional output is \$96,480,924. The average employment gain is 71 net new jobs, with an average wage of \$29,573.⁸ The new development is estimated to generate an additional \$706,282 in local tax revenues annually through the first 10 years of operation. The present value of the additional tax revenue is \$5,915,150.

The last column in Table 3 shows the average annual impacts per \$1,000,000 of construction expenditure. Single-family development is estimated to generate \$453,898 in additional output per \$1,000,000 of construction expenditure. Likewise, it creates 3.0 new jobs and \$29,801 in additional local tax revenue each year per \$1,000,000 of construction expenditure.

⁵ This rate approximates the long-term municipal bond rate over the past two years. See <http://www.federalreserve.gov/releases/h15/data/m/slbond.txt>.

⁶ In the long run, property markets are very competitive; therefore, if new homes are not built in Union County, new home buyers are likely to locate elsewhere.

⁷ See, Bureau of Labor Statistics, Survey of Consumer Expenditures, 2003.

⁸ The average wage in the county in the third quarter of 2005 was \$33,198. See, NC Employment Security Commission, <http://eslmi23.esc.state.nc.us/ew/EWGeoArea.asp?Report=1&Year=2005&Period=03>

Single-Family Residential Development's Impact on the Union County Economy

The Census Bureau reports a total of \$739,346,748 in single-family residential building permits in 2005.⁹ These permits represent *planned* construction expenditures. Assuming that this volume of single-family construction was actually put in place, the value of permits can be used to estimate the impact of single-family development on the Union County economy.

The impact multipliers from the right-most column of Table 3 are shown in column (1) of Table 4. Taking the multipliers in column (1) times the value of permits in millions (\$739.35 million) yields the estimated economic impacts shown in column (2).

Table 4: Economic Impact of Single-Family Residential Development

	(1)	(2)
	Ave. Ann. Impact Through the 1st 10 years of Operation Per \$1,000,000 of Construction Cost	Estimated Economic Impact
Construction Expenditure	n.a.	\$739,346,748
Output (2005)	\$453,898	\$335,587,657
Employment	3.0	2,206
Value Added	\$161,375	\$119,312,176
Personal Income	\$145,639	\$107,677,723
Labor Income	\$88,254	\$65,250,592
Ave. Income/Worker	\$29,573	\$29,579
Local Tax Revenue	\$29,801	\$22,033,213

Single-family development is estimated to have created an economic annuity that generates \$335,587,657 in additional output in the county each year. It fosters an estimated 2,206 net new jobs and \$65,250,592 in additional labor income.¹⁰ In the process, development spawns \$22,033,213 in extra tax revenue annually at the local level. The Bureau of Economic Analysis estimates that total personal income in the county in 2004 was \$4,252,976,000. Table 3 suggests that the personal income fostered by single-family residential development is equivalent to 2.5 percent of the county total.

⁹ The Census Bureau reports 3,972 single-family permits issued in 2005 with an average construction cost of \$186,140. See, <http://censtats.census.gov/cgi-bin/bldgprmt/bldgdisp.pl>

¹⁰ Non-agricultural wage and salary employment in the county in the third quarter of 2005 totaled 50,625. This analysis suggests that single-family development is responsible for 4.4 percent of county employment.

Fiscal Impact Analysis of Single-Family Development in Union County

Fiscal impact analysis refers to efforts to estimate the effects of various types of land uses on local government budgets.¹¹ It assesses the impact of development activity on both government receipts and expenditures. The net fiscal impact is the difference between the revenues and expenditures generated by the proposed land use or development scenario. If revenues are greater than expenditures, a project or scenario is described as having a positive net fiscal impact.

It is difficult to estimate precisely the level of government services consumed by any group of persons or employees. The standard adopted here is to compare the average local government revenues generated per capita by the development in the first 10 years of the occupancy phase with the average revenues collected from residents currently in the county. This approach assumes that new residents consume the same mix of local government services as existing residents.¹² If the average level of revenues generated is greater than the current average of all persons in the county, the project is presumed to produce a positive net fiscal impact. A positive impact means that the surplus generated by the proposed project will allow local tax rates to be lowered, the level of locally funded services to increase, or a combination of the two. In contrast, a negative impact raises the average cost of services to prior residents because they in effect subsidize the cost of services to new residents.¹³

In evaluating the impact of new real estate development on local government in Union County, it is important to understand clearly the magnitude of current revenue collections. Appendix B shows the amount of revenue collected by the county's sixteen governmental units in 2005. The data are from the North Carolina Department of State Treasurer.

Total collections were \$302,740,729 or \$1,858 per capita. But \$31,074,659, or \$191 per capita, was from intergovernmental transfers and debt proceeds which should be excluded in a comparison with new development because they do not originate from the direct taxation of current local residents. If these two sources are excluded, the average revenue collected by local government from residents was \$1,668 in 2005.

Table 5 presents a fiscal analysis of single-family development in Union County. Column (1) of the table shows the average additional yearly local tax revenue generated by development during the occupancy phase. It is taken from Table 3.

¹¹ Robert W. Burchell *et al.*, *The Fiscal Impact Handbook: Estimating Local Costs and Revenues of Land Development* (New Brunswick, NJ: Center for Urban Policy Research, 1978) and Michael L. Siegel and Susan Robinson, "Fiscal Impact Analysis: What It Is and How to Use It," *The Government Finance Officers Association, Research Bulletin*, September 1990.

¹² The same approach was employed in Mark G. Dotzour, "New Subdivisions Pay Their Own Way," *Terra Grande*, January 1998, pp. 1-5.

¹³ The analysis ignores the permit fees and other charges paid by developers for zoning requests, inspections, utility hookups, etc. The assumption here is that the level of these fees approximates the cost to local government of providing the associated services, and, therefore, the revenue impact is assumed to be neutral.

Table 5: Fiscal Analysis of New Real Estate Development in Union County

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Property Type	Ave. Ann. Addition to Local Tax Revenues through the 1st 10 years of Operation	Added Population*	Added Revenue Per Capita	Expected County Revenues Per Capita**	Net Fiscal Surplus or (Deficit) Per Capita	Total Ann. Net Fiscal Surplus or (Deficit)	Net Present Value of 1st 10 years of Operation	Net Present Value per \$1,000,000 of Project Cost
Single-Family Development	\$760,687	391	\$1,945	1,669	\$276	\$107,916	\$853,909	\$36,030

*Added population (column 2) is calculated by taking the number of new residents projected to occupy the new developments (281) plus the number of new jobs created during the occupancy phase (47) times the county population/employment ratio (2.34).

**Revenues are adjusted to reflect differences in the average number of school-age children and number of automobiles as they affect city and county expenditures on education and transportation.

Column (2) shows the expected additional population generated by development. Expected population is calculated by taking the number of new residents projected to occupy the new developments ($100 \times 2.81 = 281$) plus the number of new jobs created during the occupancy phase (47) times the county population/employment ratio (2.34). As a result of the new single-family development, 391 persons are expected to live in the county ($100 \times 2.81 + 47 \times 2.34 = 391$).

Column (4) shows expected local tax revenues collected at the combined city and county level per capita. If every new resident consumed the same level of city and county services as existing residents, local governments would expect to collect \$1,668 per capita, the actual average local tax revenues collected per capita in 2005.

Single-family households may differ for the average county household in the number of school-age children they have and the number of automobiles they own (see Appendix D). Census data for the county reveal that single-family households have the same number of school-age children but 3.2 percent more automobiles than the average of all county households. Adjusting the average revenue figure for the differences in the number of automobiles shows that single-family residents should expect to pay \$1,669 per capita. This figure is included in Table 4, column (4), in calculating the net fiscal surplus (deficit) for single-family development.¹⁴

Column (5) shows the expected net fiscal surplus on a per capita basis. Column (7) shows the net present value of the annual surplus through the first 10 years of occupancy calculated at 4.5 percent. Column (8) shows the net present value of the surplus standardized per \$1,000,000 of construction expenditure. Single-family residential development is estimated to produce an annual fiscal surplus of \$276 per capita, or a total of \$107,916 annually for the development. The net present value of the surplus calculated through the first 10 years of the occupancy phase is \$853,909, using a 4.5 percent discount rate. The net present value of the surplus per \$1,000,000 of residential construction expenditures is \$36,030.

Table 4 shows that the value of planned residential development in 2005 was \$739,346,748. Multiplying this amount in millions (739.35) times the multiplier in column 8 of Table 5 suggests that the net present value of the fiscal surplus generated by residential construction planned in 2005 amounts to \$26,638,780 calculated through the first ten years of occupancy.

¹⁴ The adjustments are calculated as shown the following table:

	Population	Education	Transportation	Other	Total
Project	281	\$475	\$38	\$1,156	\$1,669
Induced	110	\$475	\$37	\$1,156	\$1,667
	391				\$1,668

In the education and transportation columns, the adjusted estimates are calculated by taking the average revenue figure (\$1,667) times the share of that type of expenditures in the county budget times the relative share of the housing class. For example, the transportation adjustment for single-family housing is $\$1,667 \times 0.022 \times 1.032 = \38 .

A Look at Impact Fees and Other Taxes on New Development

The foregoing study of new residential development in Union County shows that new housing development creates substantial economic benefits. The benefits derive not only from the jobs created during the construction phase but also from the spending after construction of the households that occupy the new homes. In the latest year, single-family housing development generated an estimated annual \$336 million in additional output, 2,206 net new jobs, and \$22.0 million in new county and municipal tax revenues. Moreover, these impacts are not one year only but represent the average annual impact of new development through the first 10 years of occupancy. New single-family development thus creates an economic annuity that provides substantial economic benefits to the county over time.

Despite these economic benefits, some officials want to tax new residential development claiming that it does not pay its way.¹⁵ Across the state, it is common now to hear government officials and others urging the need for tax increases to pay for the costs of new residential development. Some of the new tax proposals are very creative involving the imposition of new developmental impact fees and real estate transfer taxes. Many of these same officials also stress the need for new growth and development to make up for the revenue shortfalls stemming from wide-spread job losses in traditional industries, and some are willing to offer huge tax incentives to new industries for economic growth. Such attitudes are contradictory and reflect a misperception of the benefits of new home construction. This study shows that the residents occupying the newly build homes actually pay more in taxes than current residents of the county who have an equivalent number of school-age children and drive an equal number of automobiles. On average, new-home residents pay \$1,945 in city and county taxes, while other demographically similar residents pay just \$1,669 per capita. New residential development more than pays its way. Assuming that both groups consume an equivalent amount of city and county services, the new-home residents pay \$276 more per capita than existing residents.

If residential development pays its way, why is there such a widespread clamor to tax it? A look at the consolidated county budget provides the answer (Appendix E). From 2000 through 2005, local government revenues in Union County less proceeds from the issuance of debt and intergovernmental transfers grew 7.4 percent annually. Revenues actually rose 4.9 percent faster than the rate of inflation, so real tax revenues increased despite the effects of the post-2000 recession on the county economy. The problem is that county spending outstripped the increase in revenues, rising 9.9 percent annually. The difference between the growth in revenues and expenditures was largely financed by new debt. During this period, the county issued \$206.5 million in additional debt to cover its excess spending.

Where has the new spending gone? Much of it has gone to cover the increased costs of education, to provide for the need for new and better schools. But much of it also has gone to finance the growth of government in other areas. If we subtract the cost of education, human services, and debt service from the county budget, we find that the remaining category which includes the cost of general government administration has risen 8.2 percent annually, surpassing the rate of population plus inflation growth (7.9%), the county would have saved \$25.5million, or 82 percent of what it spent on human services in 2005.

While it is easy to point to new housing development as creating the need for new and higher taxes, the real problem is not the new homes which create new jobs and more than pay for themselves. The real problem is the too rapid growth of government spending outside the necessities of schools and human services. If government officials would just limit the growth of spending to the rate of population plus inflation growth, thus keeping real spending per capita constant, new single-family development will pay for itself.

¹⁵ See, for example, Editorial: "Growth's Impact," *The Charlotte Observer*, December 1, 2005.

Appendix A: Union County Property Tax Rates

Table A.1: Calculation of Weighted Average County Tax Rate for Residential Property

TAX SET	COUNTY - TOWN - SCHOOL DISTRICT - FIRE DISTRICT	Tax Value	Tax Rate	Weight
300	WINGATE TOWN, COUNTY SCH (NO FIRE CODE)	\$14,486,619	0.9900	\$14,341,753
408	MARSHVILLE TOWN, CO.SCH, BEAVER LANE FEE	\$61,149,173	1.0106	\$61,799,365
518	WAXHAW TOWN, CO. SCH., WAXHAW VFD FEE	\$149,415,508	0.9704	\$144,989,693
720	STALLINGS TOWN, CO. SCH, STALLINGS TAX	\$12,979,718,590	0.9190	\$11,928,361,384
732	STALLINGS TOWN, CO. SCH, PROVIDENCE FEE	\$990,510	0.8800	\$871,649
826	WEDDINGTON TOWN, CO.SCH, WESLEY CHAPEL FIRE TAX	\$280,897,667	0.6750	\$189,605,925
832	WEDDINGTON TOWN, CO.SCH, PROVIDENCE FEE	\$178,329,299	0.6602	\$117,726,187
840	WEDDINGTON TOWN, CO.SCH, STALLINGS FEE	\$44,492,000	0.6602	\$29,371,970
900	COUNTY TAX & CO. SCH – NO FIRE TAX OR FIRE FEE (NC DOT)	\$1,355,980	0.6300	\$854,267
904	COUNTY SCHOOL, NEW SALEM VFD FEE	\$219,616,401	0.6303	\$138,421,483
908	COUNTY SCHOOL, BEAVER LANE VFD FEE	\$147,324,357	0.6303	\$92,863,045
909	COUNTY SCHOOL, WINGATE VFD FEE	\$72,316,589	0.6303	\$45,583,651
911	COUNTY SCHOOL, LANES CREEK VFD FEE	\$94,818,503	0.6304	\$59,773,457
912	COUNTY SCHOOL, SANDY RIDGE VFD FEE	\$161,808,936	0.6303	\$101,995,930
913	COUNTY SCHOOL, GRIFFITH ROAD FEE	\$44,681,709	0.6303	\$28,164,277
914	COUNTY SCHOOL, STACK ROAD VFD FEE	\$103,432,171	0.6303	\$65,198,068
915	COUNTY SCHOOL, SPRINGS VFD FEE	\$220,974,497	0.6303	\$139,273,383
918	COUNTY SCHOOL, WAXHAW VFD FEE	\$320,631,669	0.6302	\$202,069,002
919	COUNTY SCHOOL, BAKERS VFD FEE	\$191,910	0.6305	\$121,003
924	COUNTY SCHOOL, ALLENS CROSS ROADS FEE	\$102,764,448	0.6304	\$64,778,302
925	COUNTY SCHOOL, JACKSON VFD FEE	\$182,063,943	0.6302	\$114,745,284
926	COUNTY SCHOOL, WESLEY CHAPEL VFD FIRE TAX	\$261,611,739	0.6450	\$168,739,572
932	COUNTY SCHOOL, PROVIDENCE VFD FEE	\$2,576,280	0.6302	\$1,623,556
975	WESLEY CHAPEL, CO.SCH., SPRINGS FIRE FEE	\$1,886,950	0.6503	\$1,227,068
976	WESLEY CHAPEL, CO.SCH., WESLEY CHAPEL FIRE TAX	\$309,168,432	0.6650	\$205,597,007
979	WESLEY CHAPEL, CO.SCH., BAKERS FIRE FEE	\$2,183,770	0.6504	\$1,420,301
995	MINERAL SPRINGS, CO. SCH. SPRINGS FEE	\$101,500,189	0.6573	\$66,718,824
998	MINERAL SPRINGS, CO. SCH. WAXHAW VFD FEE	\$21,610,999	0.6574	\$14,206,527
	Total	\$16,081,998,839		\$14,000,441,932
	Estimated Average Residential Tax Rate		0.8706	

Source: Union County, Department of Tax Collections

Table A.1 shows the 2005 property tax rates in Union County and its political subdivisions (tax sets). For example, the rate per \$100 valuation in Wingate Town is a combined \$0.99. Table A.1 also shows the calculation of the 2005 weighted average tax rate for single-family residential property in Union County. The table shows the assessed value residential properties in the taxing districts in the county. The values are taken from the Union County CAMA File. The weighed average tax rate is calculated using the total assessed value of each taxing district as the weights. The weighted average county tax rate is \$0.8706.

Appendix B: Union County Governmental Revenues

Table B.1 shows 2005 revenues for the county and other political subdivisions. Consolidated receipts for all governmental entities in the county were \$302,740,729, or \$1,858 per capita. Excluding intergovernmental transfers and debt proceeds, total revenues were \$271,666,070 -- \$1,667 per capita.

Table B.1: Union County Governmental Revenues, 2005

	Property Taxes	Other Taxes	Utilities	Sales Tax	Sales & Services	Intergovernmental	Debt Proceeds	Miscellaneous	Total
Union Co.	\$71,291,892	\$5,445,908	n.a	\$24,850,749	\$36,229,595	\$18,107,396	n.a	\$14,758,256	\$170,683,796
Fairview	\$44,238	n.a	n.a	\$59,478	n.a	n.a	n.a	\$7,962	\$111,678
Hembly Bridge	\$26,856	n.a	n.a	\$14,153	n.a	\$40,092	n.a	\$17,846	\$98,947
Indian Trail	\$1,380,399	n.a	n.a	\$480,968	\$434,547	\$1,037,663	n.a	\$537,991	\$3,871,568
Lake Park	\$477,094	n.a	n.a	\$205,454	\$49,013	\$146,528	n.a	\$34,625	\$912,714
Marshville	\$590,654	n.a	\$770,112	\$226,715	\$143,098	\$242,904	n.a	\$144,869	\$2,118,352
Marvin	\$203,135	n.a	n.a	\$42,987	n.a	\$62,875	n.a	\$67,174	\$376,171
Mineral Springs	\$47,578	n.a	n.a	\$16,911	n.a	\$106,964	n.a	\$37,379	\$208,832
Mint Hill	\$4,235,792	n.a	\$771,375	\$1,174,368	\$0	\$1,098,277	n.a	\$935,851	\$8,215,663
Monroe	\$11,543,521	n.a	\$69,260,043	\$4,671,988	\$6,727,442	\$5,136,922	\$3,152,600	\$5,844,940	\$106,337,456
Stallings	\$2,221,163	n.a	n.a	\$551,678	\$58,658	\$726,272	\$171,577	\$230,564	\$3,959,912
Unionville	\$67,797	n.a	n.a	\$24,592	n.a	\$182,785	n.a	\$105,409	\$380,583
Waxhaw	\$1,190,763	n.a	n.a	\$379,629	\$41,204	\$315,242	n.a	\$373,824	\$2,300,662
Weddington	\$397,713	n.a	n.a	\$137,939	n.a	\$192,790	n.a	\$225,243	\$953,685
Wesley Chapel	\$89,494	n.a	n.a	\$31,680	n.a	\$128,879	n.a	\$191,794	\$441,847
Wingate	\$371,195	n.a	\$823,787	\$148,472	\$148,211	\$224,893	n.a	\$52,305	\$1,768,863
Total	\$94,179,284	\$5,445,908	\$71,625,317	\$33,017,761	\$43,831,768	\$27,750,482	\$3,324,177	\$23,566,032	\$302,740,729
Per Capita	\$578	\$33	\$440	\$203	\$269	\$170	\$20	\$145	\$1,858
% Share	31.1%	1.8%	23.7%	10.9%	14.5%	9.2%	1.1%	7.8%	100.0%

Source: N.C. Department of State Treasurer, see: <http://www.treasurer.state.nc.us/dsthome/StateAndLocalGov>

Appendix C: Union County Governmental Expenditures

Table C.1 shows 2005 expenditures for the county and other political subdivisions. Consolidated expenditures for all governmental entities in the county were \$363,837,226, or \$2,233 per capita.

Table C.1: Union County Governmental Expenditures, 2005

	Education	Utilities	Debt Service	Human Services	Transportation	General Government	Public Safety	Other	Total
Union Co.	\$103,636,585	n.a	\$24,801,574	\$31,016,074	n.a	\$17,542,558	\$26,783,581	\$31,059,389	\$234,839,761
Fairview	n.a	n.a	n.a	n.a	n.a	\$33,608	\$0	\$6,738	\$40,346
Hembly Bridge	n.a	n.a	n.a	n.a	n.a	\$58,714	\$0	\$0	\$58,714
Indian Trail	n.a	n.a	n.a	n.a	\$54,532	\$1,015,159	\$353,622	\$1,911,548	\$3,334,861
Lake Park	n.a	n.a	n.a	n.a	\$98,661	\$302,066	\$130,112	\$222,221	\$753,060
Marshville	n.a	\$678,981	\$7,280	n.a	\$97,212	\$382,733	\$425,562	\$311,468	\$1,903,236
Marvin	n.a	n.a	n.a	n.a	n.a	\$144,877	\$0	\$130,872	\$275,749
Mineral Springs	n.a	n.a	n.a	n.a	n.a	\$66,750	\$8,103	\$20,510	\$95,363
Mint Hill	n.a	n.a	\$771,375	n.a	\$958,240	\$1,869,052	\$2,282,867	\$1,775,024	\$7,656,558
Monroe	n.a	\$68,205,393	\$6,321,192	n.a	\$5,358,068	\$4,494,192	\$10,723,379	\$9,599,511	\$104,701,735
Stallings	n.a	n.a	\$149,486	n.a	\$622,082	\$1,897,725	\$1,386,253	\$779,953	\$4,835,499
Unionville	n.a	n.a	n.a	n.a	n.a	\$149,364	n.a	\$17,616	\$166,980
Waxhaw	n.a	n.a	n.a	n.a	\$630,602	\$647,407	\$882,834	\$213,493	\$2,374,336
Weddington	n.a	n.a	n.a	n.a	n.a	\$297,218	\$276,633	\$296,372	\$870,223
Wesley Chapel	n.a	n.a	n.a	n.a	n.a	\$108,885	n.a	\$54,480	\$163,365
Wingate	n.a	\$767,731	\$70,608	n.a	\$164,919	\$245,626	\$371,603	\$146,953	\$1,767,440
Total	\$103,636,585	\$69,652,105	\$32,121,515	\$31,016,074	\$7,984,316	\$29,255,934	\$43,624,549	\$46,546,148	\$363,837,226
Per Capita	\$636	\$427	\$197	\$190	\$49	\$180	\$268	\$286	\$2,233
% Share	28.5%	19.1%	8.8%	8.5%	2.2%	8.0%	12.0%	12.8%	100.0%

Source: N.C. Department of State Treasurer, see: <http://www.treasurer.state.nc.us/dsthome/StateAndLocalGo>

Appendix D: Union County Households, 2000

	Population in Households	Average Household Size	Number of Households	Number of School-Age Children	No. of School-Age Children per Household	Number of Autos	Number of Autos per Household
Total	122,011	2.81	43,390	21,829	0.50	86,780	2.00
Owner-Occupied	99,318	2.84	34,937	17,752	0.51	71,765	2.05
Single-Family	88,293	2.83	31,199	15,696	0.50	64,407	2.06

Note: School-age children are those ages 5-17. Single-family units are owner-occupied, detached dwelling units.

Source: 2000 Census (SF 3) and NC Data Center.

Appendix E: Union County Consolidated Governmental Revenues and Expenditures, 2005-2000

Revenues by Source	2005	2004	2003	2002	2001	2000	Ave. Ann. % Chg.
Property Taxes	\$94,179,284	\$78,009,353	\$68,019,935	\$62,345,827	\$58,741,435	\$55,381,371	11.2%
Other Taxes	\$5,445,908	\$4,331,045	\$3,160,699	\$2,817,542	\$2,325,008	\$2,251,581	19.3%
Utility	\$71,625,317	\$69,780,835	\$63,651,547	\$58,420,178	\$65,269,554	\$59,670,695	3.7%
Sales Tax	\$33,017,761	\$29,647,323	\$24,555,407	\$21,940,778	\$21,612,465	\$21,345,195	9.1%
Sales & Services	\$43,831,768	\$37,872,105	\$32,319,911	\$30,952,977	\$30,680,083	\$29,831,333	8.0%
Intergovernmental Transfers	\$27,750,482	\$25,835,168	\$24,885,346	\$23,109,270	\$29,896,474	\$41,312,189	-7.6%
Debt Proceeds	\$3,324,177	\$6,909,570	\$102,756,074	\$1,184,999	\$58,613,605	\$33,719,000	-37.1%
Other Miscellaneous	\$23,566,032	\$19,339,867	\$29,175,196	\$18,305,524	\$23,922,282	\$21,468,578	1.9%
Total	\$302,740,729	\$271,725,266	\$348,524,115	\$219,077,095	\$291,060,906	\$264,979,942	2.7%
Total-Debt-Intergov. Trans.	\$271,666,070	\$238,980,528	\$220,882,695	\$194,782,826	\$202,550,827	\$189,948,753	7.4%
Expenditures by Function							
Education	\$103,636,585	\$70,069,512	\$44,658,707	\$44,659,347	\$49,443,374	\$47,307,436	17.0%
Water/Sewer	\$69,652,105	\$67,908,931	\$58,679,216	\$54,378,808	\$65,354,367	\$55,249,610	4.7%
Debt Service	\$32,121,515	\$32,761,655	\$31,818,827	\$27,794,811	\$23,475,697	\$24,825,557	5.3%
Human Services	\$31,016,074	\$28,587,245	\$27,147,540	\$26,456,386	\$24,740,070	\$22,229,974	6.9%
Transportation	\$7,984,316	\$6,875,218	\$5,294,949	\$4,673,697	\$3,411,722	\$4,970,500	9.9%
General Government	\$29,255,934	\$27,749,417	\$19,847,611	\$16,204,410	\$15,977,287	\$17,161,089	11.3%
Public Safety	\$43,624,549	\$38,795,840	\$34,499,674	\$33,352,260	\$27,966,638	\$26,411,419	10.6%
Other	\$46,546,148	\$47,848,624	\$53,447,534	\$47,356,713	\$39,208,707	\$29,079,968	9.9%
Total	\$363,837,226	\$320,596,442	\$275,394,058	\$254,876,432	\$249,577,862	\$227,235,553	9.9%
CPI	194.6	188.9	184.0	179.9	177.1	172.2	2.5%
Population	162,929	153,720	145,993	139,412	132,007	125,669	5.3%

Source: N.C. Department of State Treasurer, see: <http://www.treasurer.state.nc.us/dsthome/StateAndLocalGo>

Background of the Principal Investigator

G. Donald Jud is Professor Emeritus of Finance in the Bryan School of Business and Economics at the University of North Carolina at Greensboro and principal of JUD & ASSOCIATES. He has taught courses in economics, finance, and real estate. Dr. Jud received his Ph.D. from the University of Iowa and MBA and BA degrees from the University of Texas. He is author of over 70 academic articles and three books.

Dr. Jud serves on the editorial boards of the *Journal of Real Estate Finance and Economics* and the *Journal of Real Estate Literature* and is a member of the *Appraisal Journal's* academic review panel. He is a past editor of the *Journal of Real Estate Research* and continues to serve as a member of its editorial board.

Dr. Jud is a past president of the American Real Estate Society (ARES) and former ARES Director of Publications. He is a research fellow of the Homer Hoyt Advanced Studies Institute, where he is an emeritus member of the Weimer School Faculty and the Board of Directors of the Institute. Dr. Jud's research has appeared in numerous academic and professional journals including the *Appraisal Journal*, *American Real Estate and Urban Economics Association Journal*, *Journal of Real Estate Finance and Economics*, *Journal of Real Estate Research*, *Journal of Housing Economics*, *Journal of Financial Education*, *Journal of Real Estate Portfolio Management*, *Journal of Real Estate Practice and Education*, *Real Estate Issues*, *Journal of Property Research*, *Journal of Financial Economics*, *Land Economics*, and *Urban Studies*.

Dr. Jud has been a research consultant to Wachovia Bank, NC Department of Commerce, the Piedmont-Triad Partnership, the National Association of Realtors®, the NC Association of Realtors®, the Greensboro Chamber of Commerce, Downtown Greensboro, Inc., the Greensboro Regional Realtors® Association, the Starmount Company, the Town of Boone, NC, RMIC Corporation, CME Merchant Energy, the NC Biotechnology Center, and the NC Association of Electrical Cooperatives.