Final Report

Housing Nexus Study

The Economics of Land Use

Prepared for:

Douglas County
Office of the County Manager

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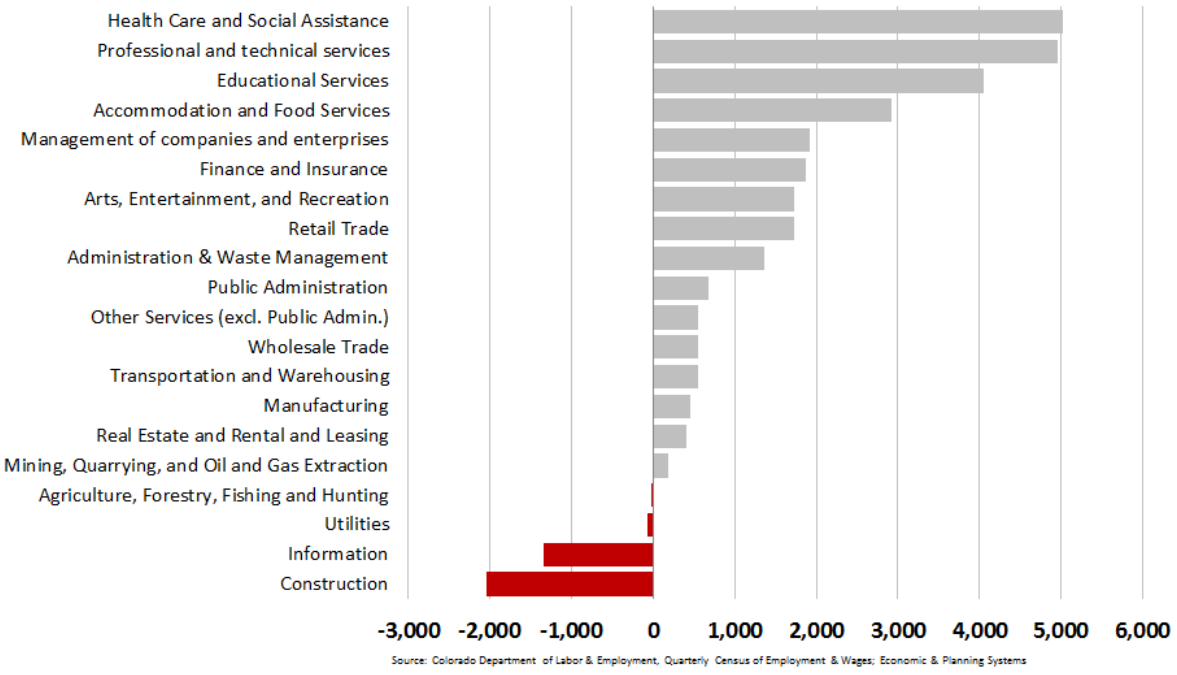
1. SUMMARY OF FINDINGS

The following are the 10 major findings from this study. They parallel the sections of this report, which outline the economic profile of Douglas County in terms of employment and commuting, as well as the findings of the housing nexus analysis, and the impact analysis concerning a continuation of current conditions and patterns.

1. Although two recessions caused major job losses regionally and locally, Douglas County experienced a net gain of 25,500 jobs from 2001 to 2010.

While the housing contraction resulted in a net loss of approximately 2,000 local jobs between 2008 and 2010, they were offset by the net gains of 5,000 jobs in both health care and professional/technical services sectors. Educational services also gained approximately 4,000 jobs over the time, and the finance and insurance industry as well as management of companies gained nearly 2,000 jobs each. To maintain the health of the local economy, a diversity of wage levels is needed. This notion was reflected by industry representatives, such as health care, who participated in focus groups and stated that their recruitment and retention needs are very challenging for lower wage positions.

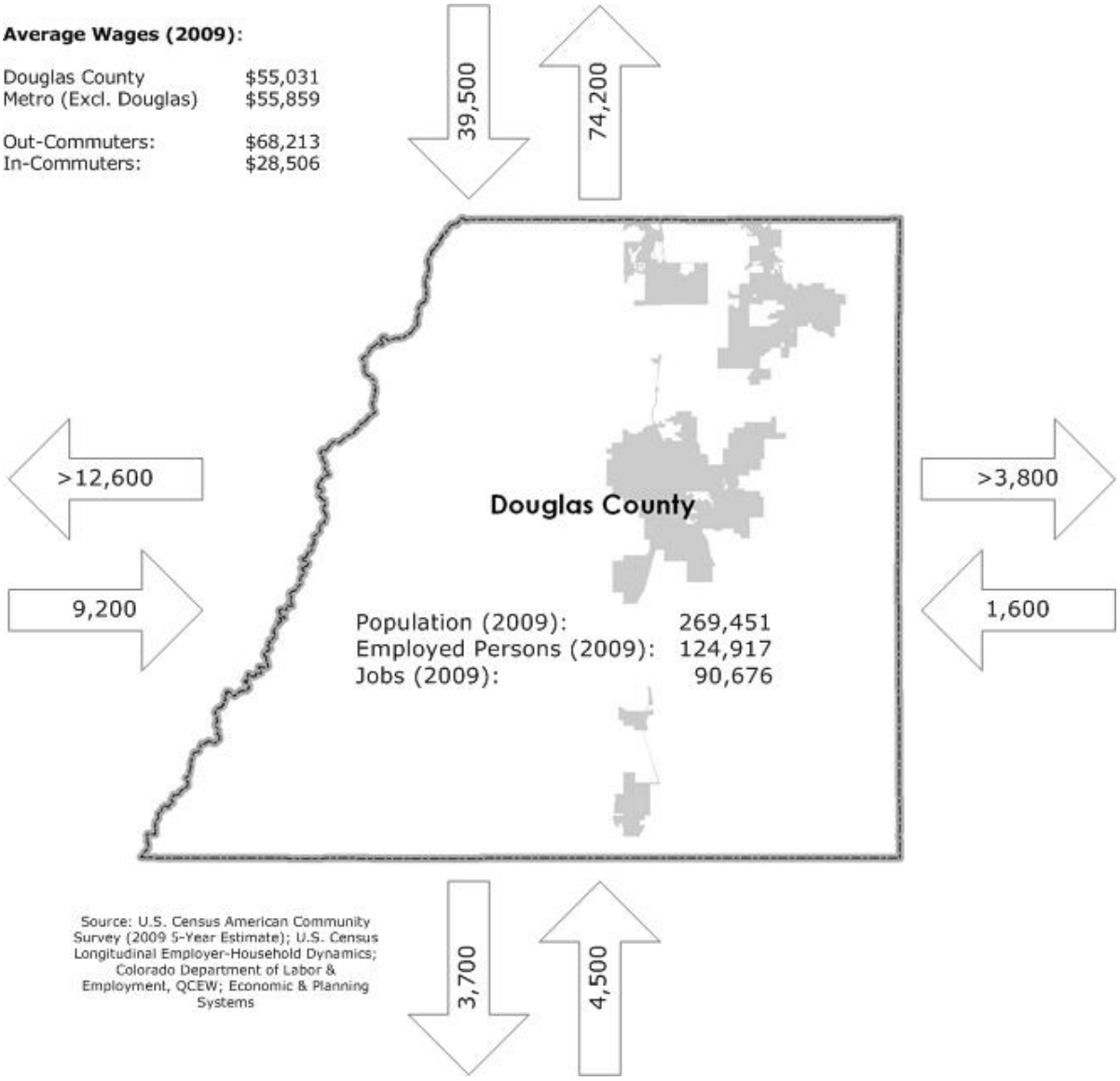
Figure ES-1
Net Job Change, 2001-2010
Douglas County Housing Nexus Study



2. Approximately 98,500 of the County's 124,900-person laborforce hold a job outside the County. The remaining 26,400 account for just 30 percent of the local workforce.

Commuting is a major activity affecting Douglas County's economy, the consequences of which are not only high transportation costs for commuters, but also potentially foregone tax revenues for the County, specifically from retail expenditures. The commuting flows by direction are documented in the figure below.

Figure ES-2
Commuting Patterns
Douglas County Housing Nexus Study



3. Construction of additional housing generates demand for local workers.

Each 100 units of new housing supports a wide range of demand for employment. This study evaluated three sectors, representing employment categories that are central to Douglas County's economic and civic health. These include retail/service sector jobs, teachers, and construction workers. The nexus analysis section of this report documents how EPS quantified household expenditure, school-age children generation rates, and labor costs for each type of employment and estimated the corresponding housing demand.

4. The employment and household demand generated by new housing units is spread across a spectrum of income levels.

Single-family housing generates more demand for housing than multi-family housing, as shown in **Table ES-1.** 100 units of single-family housing generate demand for a total of 63 households, and 100 units of attached housing generate demand for 30 households. This household demand is spread across a variety of income categories. Using the Denver Metropolitan Area household median income, the 63 units generated by single-family product, for example, are 17 at the 50 to 80 percent AMI level and 45 at the 80 to 120 percent (workforce housing) level.

Table ES-1
Household Generation by AMI
Douglas County Housing Nexus Study

	Households by Income Level			
	Less than 50% AMI	50% to 80% AMI	80% to 120% AMI	Total
Household Demand from Single-Family Units				
Expenditure-Based	0	17	3	20
Teacher-Based	0	0	4	4
Construction Worker-Based	0	0	39	39
Subtotal (per 100 Market-Rate Units)	**0 hhs**	**17 hhs**	**45 hhs**	**63 hhs**
Household Demand from Multi-Family Units				
Expenditure-Based	0	8	1	9
Teacher-Based	0	0	1	1
Construction Worker-Based	0	0	19	19
Subtotal (per 100 Market-Rate Units)	**0 hhs**	**8 hhs**	**22 hhs**	**30 hhs**

Source: Economic & Planning Systems

H:\20874-Douglas County Nexus Study\Models\[20874-NexusModel-071511.xlsx]TOTAL HH DEMAND

5. A fee per single-family unit of $26,600 and $12,400 per unit of multi-family housing supports 100 percent of the aggregate financing gaps for households at all AMI levels below 120 percent generated by 100 units of housing.

The financing gaps are estimated using housing industry affordability standards and are the difference between a household's supportable purchase price and the average price of Douglas County housing. Financing gaps are estimated for each AMI category for which housing demand is generated. The respective fees are estimated by dividing the aggregate financing gaps by 100 units, as shown in **Figure ES-2**.

Table ES-2
Financing Gaps & Fees by AMI
Douglas County Housing Nexus Study

	Income Level			
	Less than 50% AMI	50% to 80% AMI	80% to 120% AMI	Total
Single-Family Detached Product				
Affordable Units Required per 100 Units	0	17	45	63
Financing Gap per Unit	$160,200	$81,500	$27,600	
Aggregate Financing Gap	$0	$1,416,576	$1,246,497	$2,663,072
Fee In-Lieu per Unit	**$0**	**$14,166**	**$12,465**	**$26,631**
Multi-Family Attached Product				
Affordable Units Required per 100 Units	0	8	22	30
Financing Gap per Unit	$160,200	$81,500	$27,600	
Aggregate Financing Gap	$0	$637,600	$600,164	$1,237,764
Fee In-Lieu per Unit	**$0**	**$6,376**	**$6,002**	**$12,378**

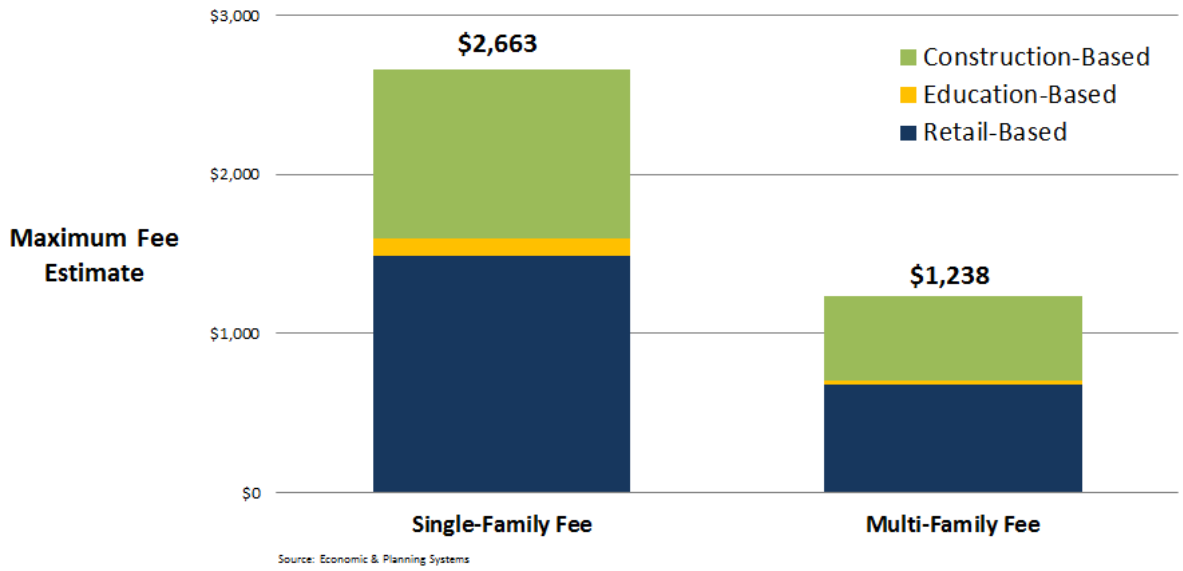
Source: Economic & Planning Systems

H:\20874-Douglas County Nexus Study\Models\[20874-NexusModel-071511.xlsx]TOTAL FINANCING GAP

6. The nexus study shows that the County can adopt a fee of $2,663 per single-family unit and $1,238 per multi-family unit.

Over a five-year period, with average building activity of 300 units per year in unincorporated Douglas County, fee collections at these levels, as shown in **Figure ES-3**, would generate approximately $4 million in funding available as a housing resource. There are a wide variety of programs that could be funded by these revenues. Programs that might maximize and make efficient use of these funds include a down-payment assistance program or revolving loan program, equity pool program, or land acquisition.

Figure ES-3
Recommended Fee
Douglas County Housing Nexus Study



Source: Economic & Planning Systems

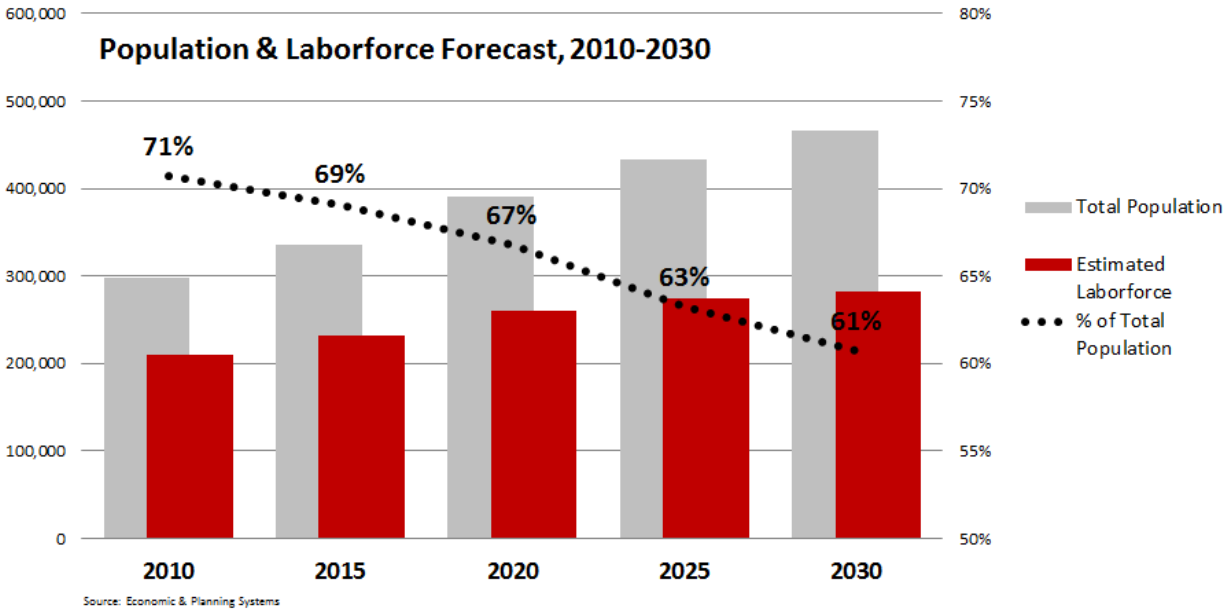
7. An affordable housing fee could enable the County to pursue a balanced community approach, defined as expanded housing for households (replacing in-commuters) and expanded economic development efforts to attract jobs (reducing out-commuters). Both efforts could translate into higher local tax revenues.

Today, approximately 80 percent of the County's laborforce commutes out and approximately 65 percent of the local workforce commutes in, as documented in this report. If more housing were available at affordable prices, commuting could be decreased and tax revenue collections could be increased. Similarly, the more higher-paying jobs that can be attracted into the County, the less the impact of commuting, and the greater the positive impact to the County's tax revenues.

8. Over the next 20 years, the primary demographic of Douglas County's population is forecast to decline. This trend will contribute to a flattening of the laborforce.

As shown in **Figure ES-4**, the County's laborforce participation rate is forecast to decline from today's 71 percent to 61 percent by 2030. This decrease in laborforce means that by 2030 there will be approximately 46,600 fewer employed people in the County by today's laborforce participation rate. Economic development needs, specifically related to the available laborforce, will become more pressing.

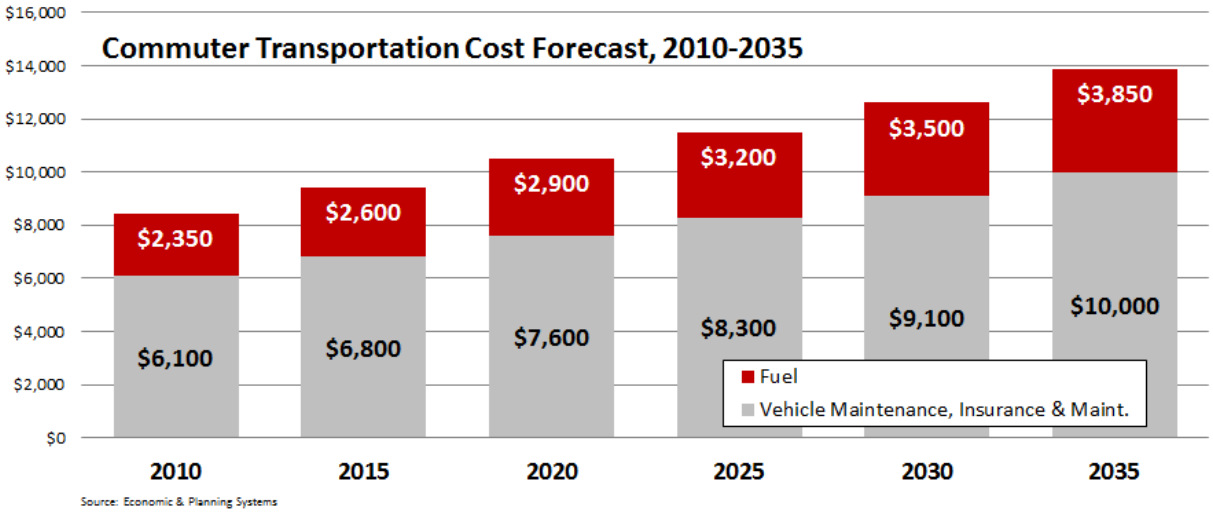
Figure ES-4
Population & Laborforce Forecast
Douglas County Housing Nexus Study



9. The average commuter spends approximately $8,450 per year on fuel, maintenance, repairs, and depreciation associated with driving to and from work.

Nationwide, fuel costs have been rising at an average of 2.0 percent since 1982, and costs are anticipated to rise steadily in the future. As shown in **Figure ES-5**, the average annual costs for commuting (fuel and related ownership expenses) to and from Douglas County will continue to increase. To the extent that local housing options are available for Douglas County employees, substantial savings could be achieved as commuting is reduced.

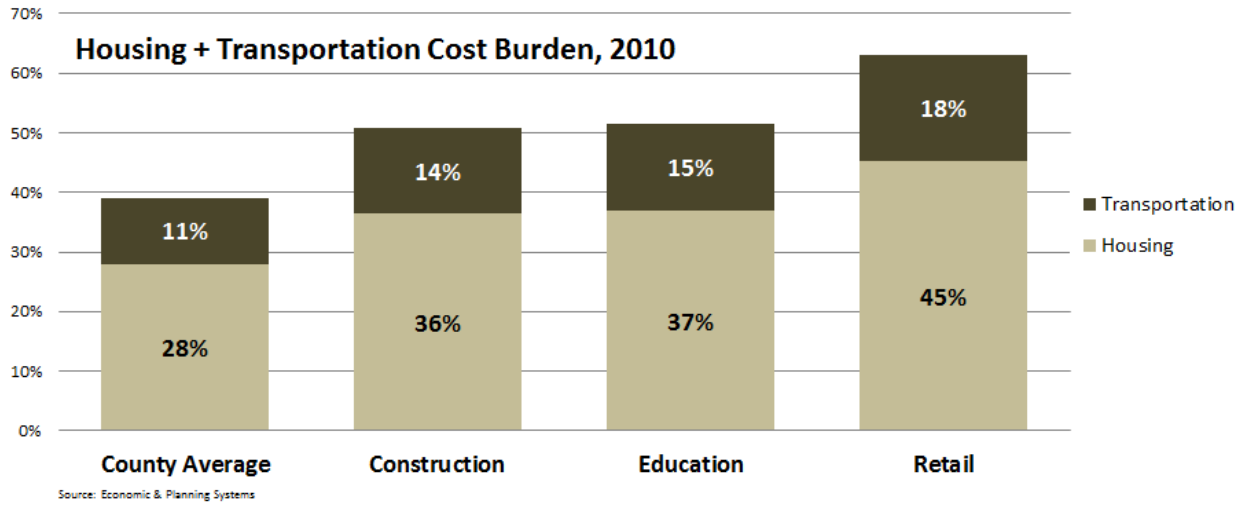
Figure ES-5
Population & Laborforce Forecast
Douglas County Housing Nexus Study



10. The average household in Douglas County spends 39 percent of its income on housing and commuting. In construction and education, that portion jumps to 50 and 52 percent respectively, while retail households are spending 63 percent of their income on housing and commuting.

For many years, the housing industry nationwide has recognized a 'cost-burdened' household as one that spends more than 30 percent of its income on housing. More recently, the industry has begun to define a cost-burdened household as one that spends more than 30 percent on housing and transportation to and from work. In Douglas County, the average household is cost-burdened.

Figure ES-6
Cost Burdened Households
Douglas County Housing Nexus Study



2. BACKGROUND

Economic & Planning Systems (EPS) was retained by Douglas County to complete a Housing Nexus Study. The project included the following several major components:

- **Economic Profile**: an assessment of employee recruitment and retention issues, the business community's perspective on the issues, transportation costs and commuting;
- **Housing Market Analysis**: an assessment of ownership prices, rental rates, supply, affordability; and
- **Nexus Study**: an analysis that quantifies the connection and relationships between new housing development, the generation of new service sector jobs (and other selected industries), and the resulting demand for affordable housing.

Among the major objectives of the study was identifying and quantifying the linkage between jobs and housing that focuses on new jobs created by development and construction of homes. It is the description of this that establishes a rational nexus between future housing development and the need for affordable housing.

Other objectives of the study were to understand the impacts that a continuation of current employment, commuting, and housing trends and conditions will have on the County's future employment and housing markets. EPS recognizes that the findings of this report will enable the Board of County Commissioners to further understand the economic ramifications of housing policy and how local housing affects the laborforce supply, economic growth potentials, and fiscal revenues.

This report is divided into four sections documenting the relevant trends and conditions contains an economic profile documenting the economic profile of the county, including its existing employment levels, commuting patterns, housing market conditions.

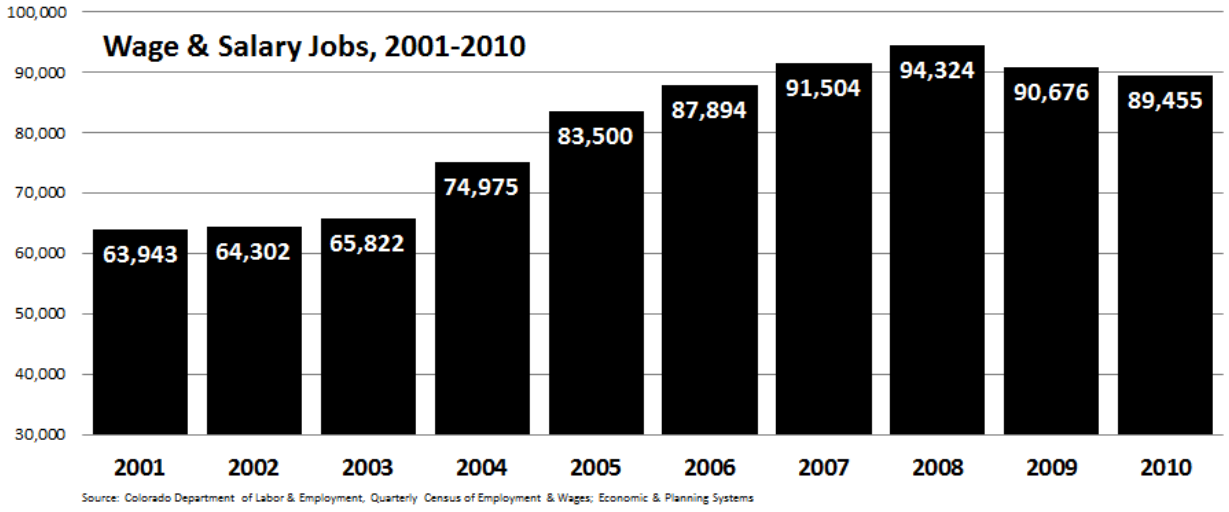
3. ECONOMIC PROFILE

This chapter describes the economic and demographic framework of Douglas County. Trends and conditions of jobs, wages, income, and commuting are analyzed and provide the foundation for understanding the larger economic profile of the County, which is further described under the County Contextual consideration of the Impact Analysis chapter.

Employment

From 2001 to 2010, employment increased by more than 25,000 jobs in spite of the two recessions, as shown in **Figure 1**[1]. Reflecting a 3.8 percent average rate of growth per year, the County's economy grew fastest between 2002 and 2008. Following the economic contraction, which began in late 2006 with the housing industry, the construction industry lost considerable jobs with a significant impact in Douglas County. During the latest and larger recession, the County lost nearly 5,000 jobs off its 2008 peak.

Figure 1
Workforce Trends, 2001-2010
Douglas County Housing Nexus Study



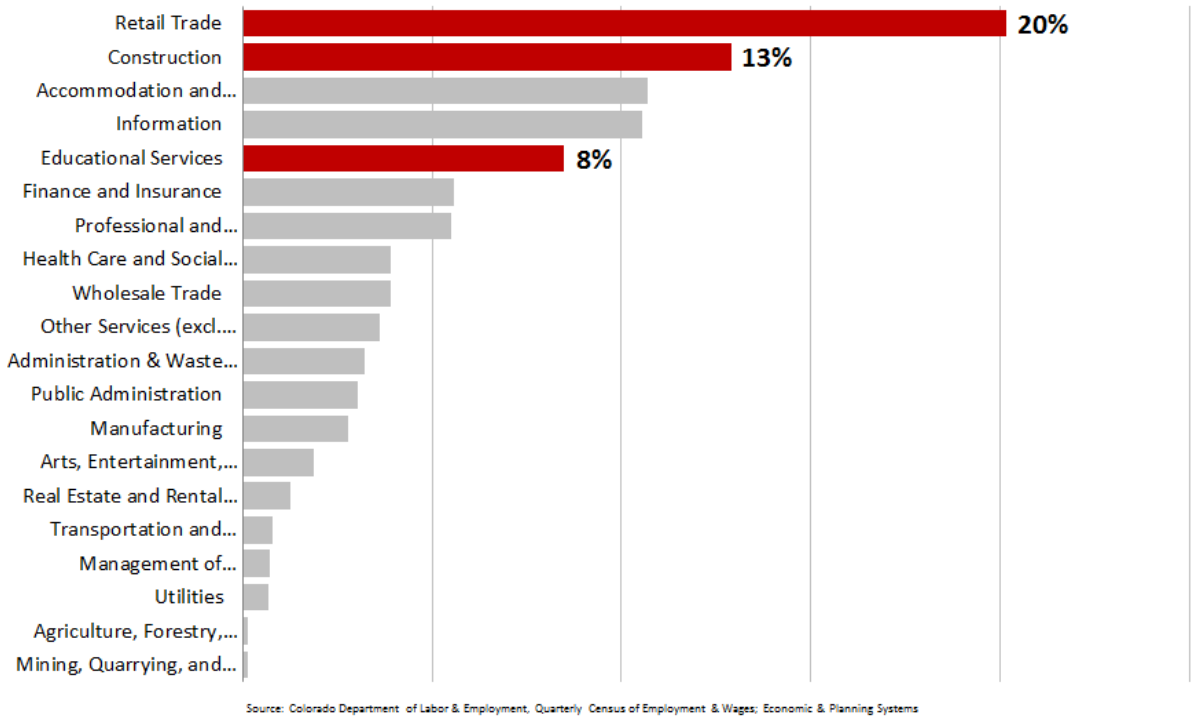
Much of the increase during the expansion period, was the result of two industries, both of which have a significant presence in the County—construction and retail. The two recessions took a large toll on these industries. In 2001, as shown in **Figure 1** below, retail accounted for 20

[1] These data come from the Colorado Department of Labor and Employment's Quarterly Census of Employment and Wages division. The micro-data (sub-county and industry and establishment-specific detail) series used are available to public entities only, and through a confidentiality agreement, it has been analyzed at for this project. The data presented in this report are only wage and salary positions (i.e. not including sole-proprietor counts), and are reported in aggregate only.

percent of the County's total workforce; construction accounted for 13 percent; and educational services accounted for eight percent.

At the housing bubble's peak, these industries occupied the same portions of the total County workforce, but were employing considerably more workers. The construction industry had increased from approximately 8,200 in 2001 to more than 10,100 by 2005; the retail industry, which peaked a few years later, grew from approximately 12,900 in 2001 to nearly 16,100 in 2008. Other related industries, such as accommodations and food services, grew by large numbers, as well, but from their peak, the construction and retail industries have lost the most jobs.

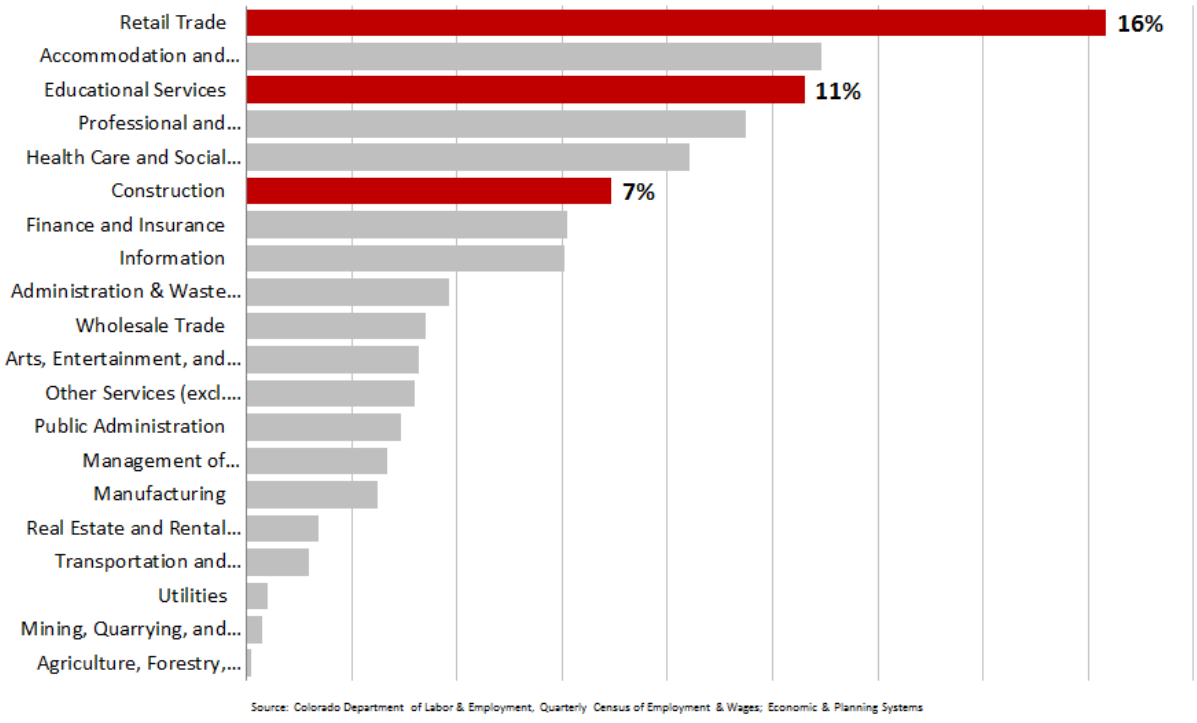
Figure 2
Workforce Distribution, 2001
Douglas County Housing Nexus Study



Source: Colorado Department of Labor & Employment, Quarterly Census of Employment & Wages; Economic & Planning Systems

By 2010, the distribution of jobs in the County had shifted, as a result of the recent recession. As illustrated in **Figure 3**, the retail sector, though it had lost approximately 1,400 jobs from its peak in 2008, remained the largest sector at 16 percent of the economy. Construction, which previously had accounted for 13 percent of the County's workforce, now occupied approximately seven percent (or approximately 4,000 fewer jobs) of the approximately 90,000 jobs.

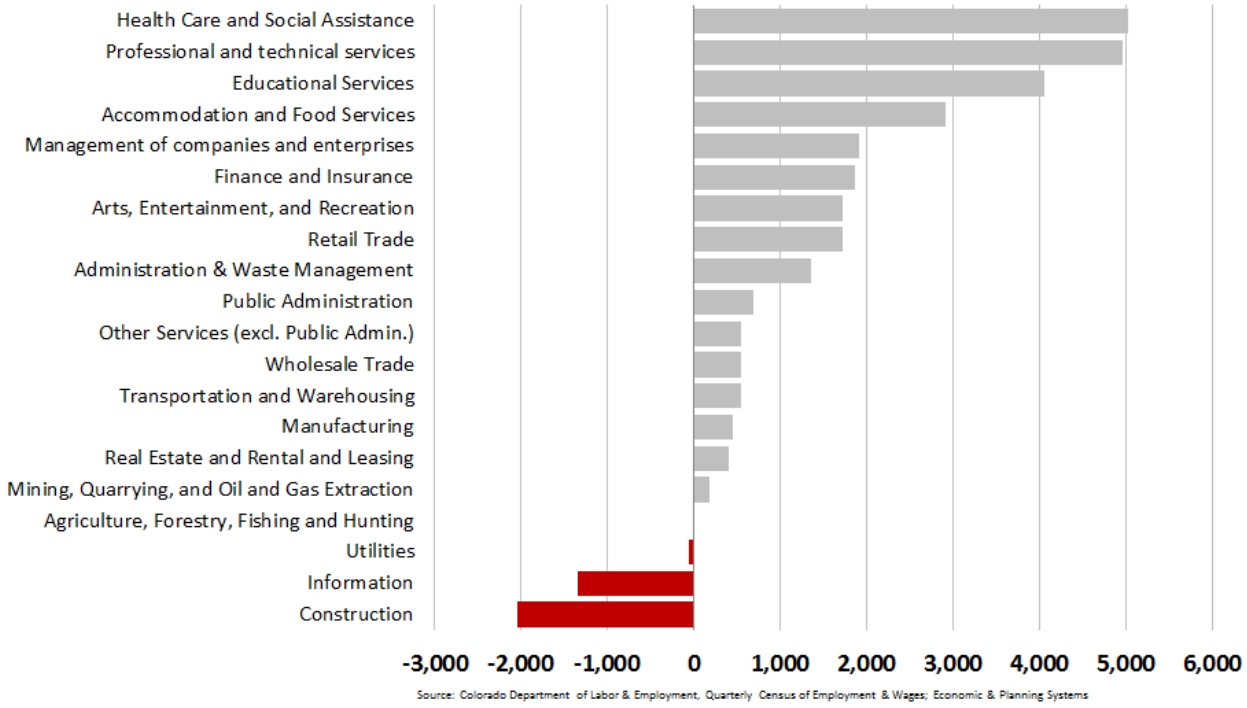
Figure 3
Workforce Distribution, 2010
Douglas County Housing Nexus Study



Source: Colorado Department of Labor & Employment, Quarterly Census of Employment & Wages; Economic & Planning Systems

The health care, professional and technical services, educational services, and accommodations and food service industries each experienced net positive growth over the 10 years by approximately 3,000 or more jobs, as illustrated by **Figure 4**. The health care industry and professional and technical services industry each, in addition to sustaining workforce losses during the recession, added approximately 5,000 jobs each during the time. On the other hand, construction experienced a net decline in jobs, approximately 2,000, followed by information technology, and utilities.

Figure 4
Net Workforce Changes, 2001-2010
Douglas County Housing Nexus Study

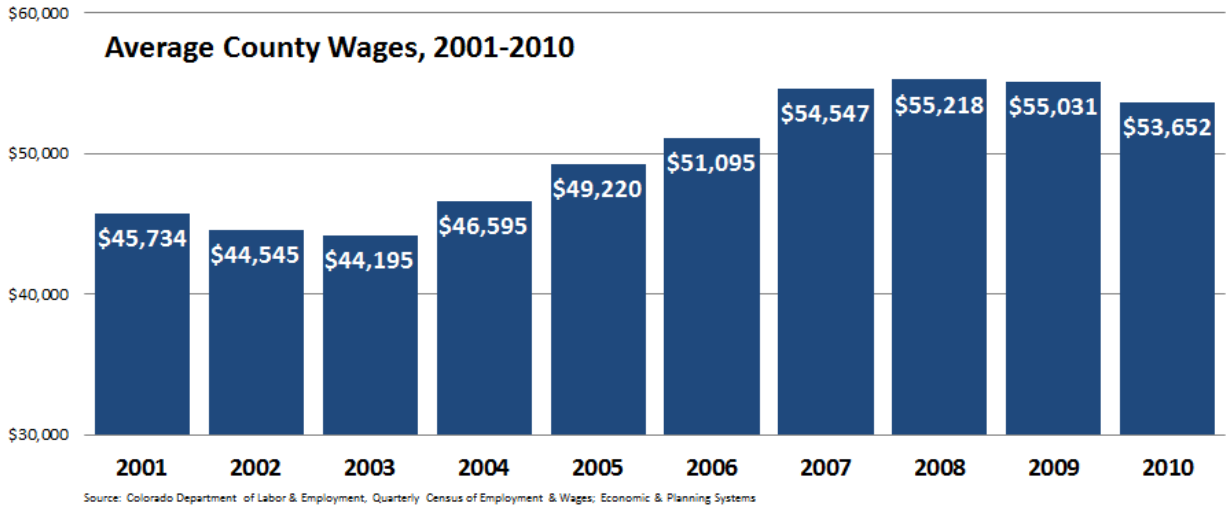


Wages and Income

From 2001 to 2010, wages in the County increased from approximately $45,700 to more than $53,600, reflecting an annual rate of increase of 1.8 percent on average. During the recession of 2001, employment levels held fairly steady, as shown previously, but wages, as shown in **Figure 5**, decreased. Similarly, wages declined from the peak in employment in 2008 as well. Wages in the decade's first recession fell 3.4 percent off its 2001 peak, and, through 2010, the wage decline of the last recession has been 2.8 percent from 2008.

By comparison, wages in the County have largely paralleled wage trends at the Metro level (when excluding Douglas County's wages from the analysis). From their peak, average wages in the Metro area have dropped more than 1.5 percent from the peak in 2009, and average wages in the County have fallen slightly more than 2.5 percent from their peak in 2008. (For more detail, please refer to **Appendix Figure A1**.)

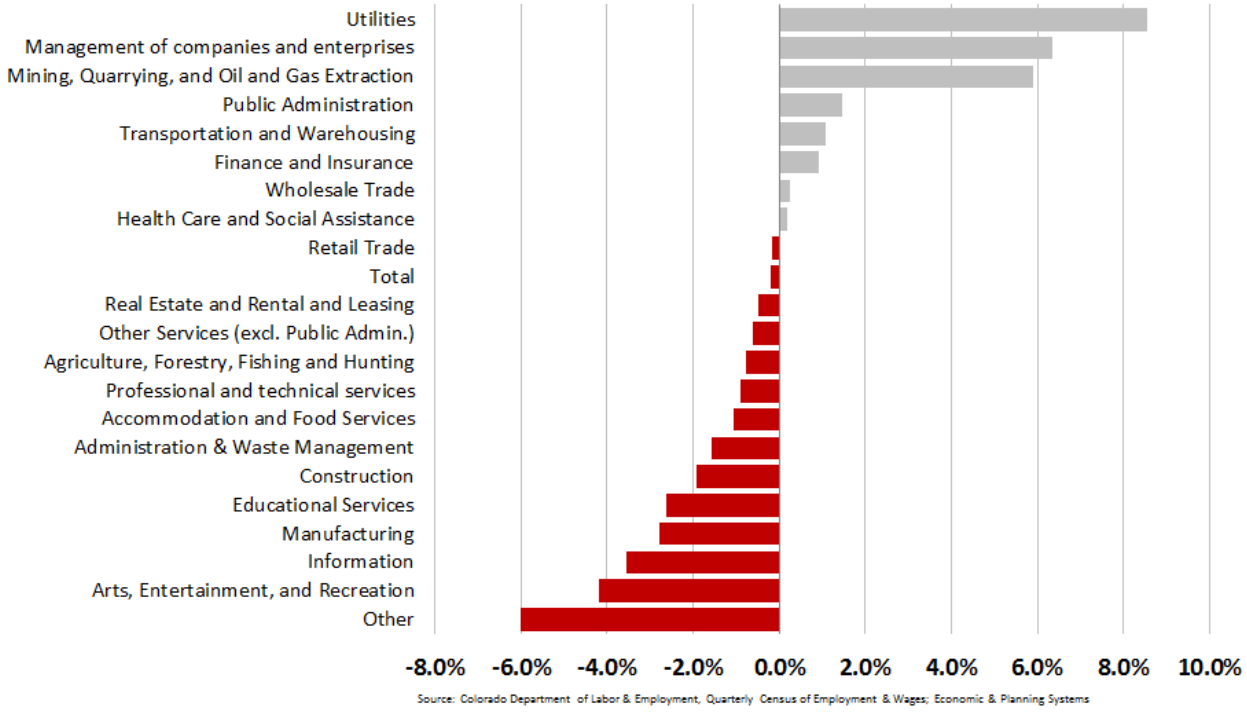
Figure 5
Nominal Wage Trends, 2001-2010
Douglas County Housing Nexus Study



During the past decade inflation has outpaced wage growth nationally and regionally. Similarly, wages for most industries in Douglas County have also not kept pace with inflation. Between 2001 and 2010, eight industries in the County had positive average annual growth in wages—utilities, management, mining, public administration, transportation, finance, wholesale trade, and health care, as shown in **Figure 6**.

While average retail wages adjusted for inflation generally tracked with the County's average wage trend, they have consistently been 54 percent below the County average. (For more detail regarding wage comparisons, please refer to **Appendix Figure A3**.) Wages in accommodations and food services have generally been less at approximately 30 percent of average County wages. Since 2001, inflation-adjusted wages in this industry have also fallen approximately one percent annually, dropping the most between 2002 and 2003. Other industries whose wages have fallen more than two percent annually since 2001 are education, manufacturing, information, and arts/entertainment/recreation, and other. The educational services industry, for example, was impacted by the two recessions. Wages fell at an average rate of 2.6 percent per year from 2001 to 2010. They also decreased from 18 percent below the County's average wage to 34 percent below the County's average wage during the same time.

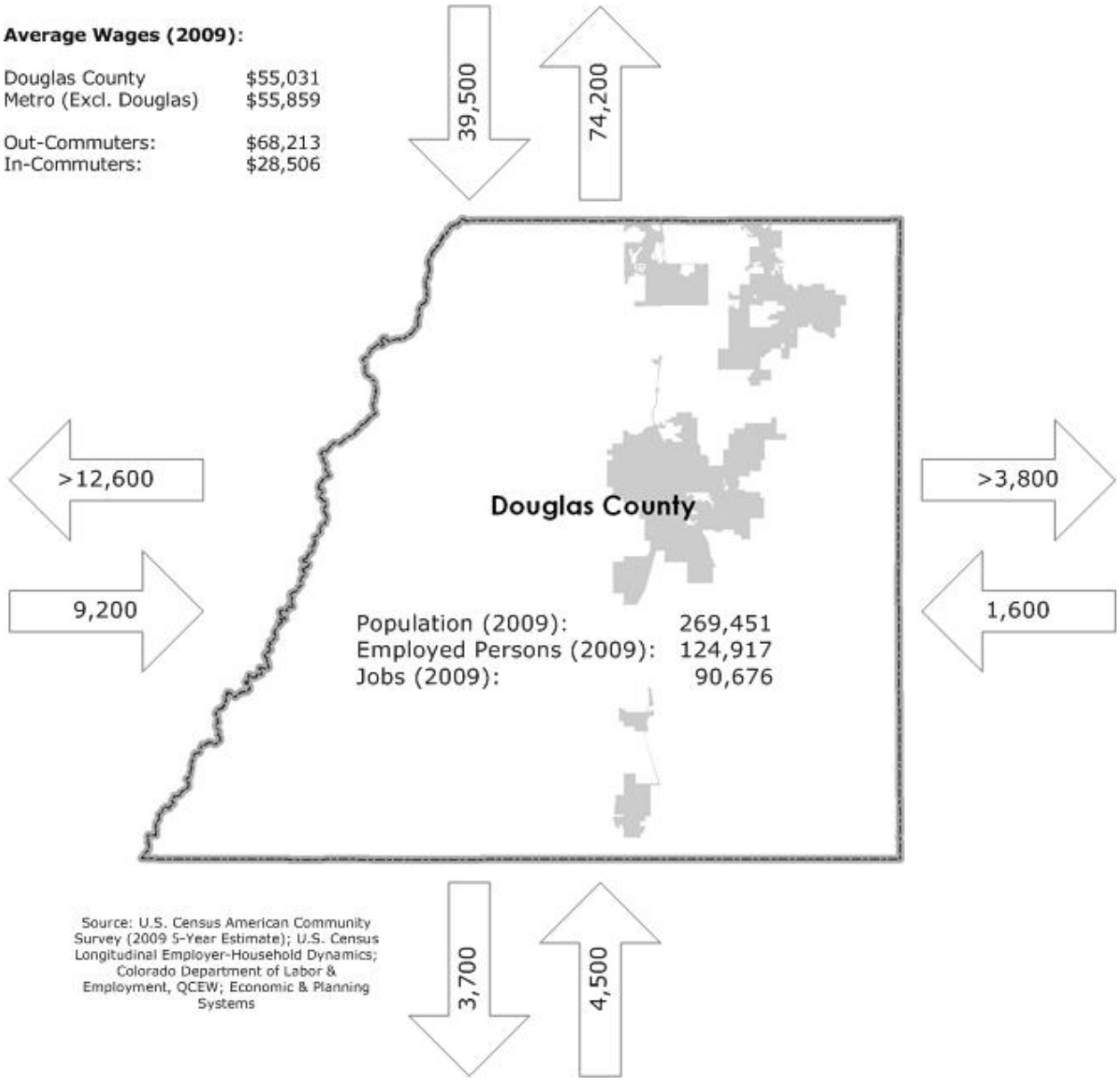
Figure 6
Inflation-Adjusted Wage Change, 2001-2010
Douglas County Housing Nexus Study



Commuting Patterns

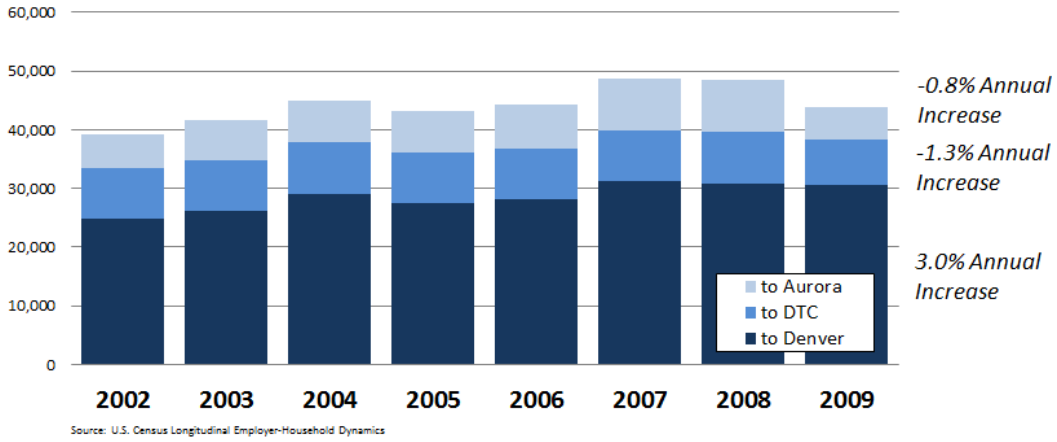
In 2009, of the County's population of 269,451, its laborforce (employed residents) was 124,917 persons. By contrast, the County's workforce (local jobs) totaled 90,676. In- and out-commuting were significant trends. In total, as shown in **Figure 7**, nearly 94,400 (or 76 percent) employed Douglas County residents commute out for work, and the remaining 30,500 are employed locally, accounting for just one-third of the local jobs (the County's workforce).

Figure 7
Commuting Patterns
Douglas County Housing Nexus Study



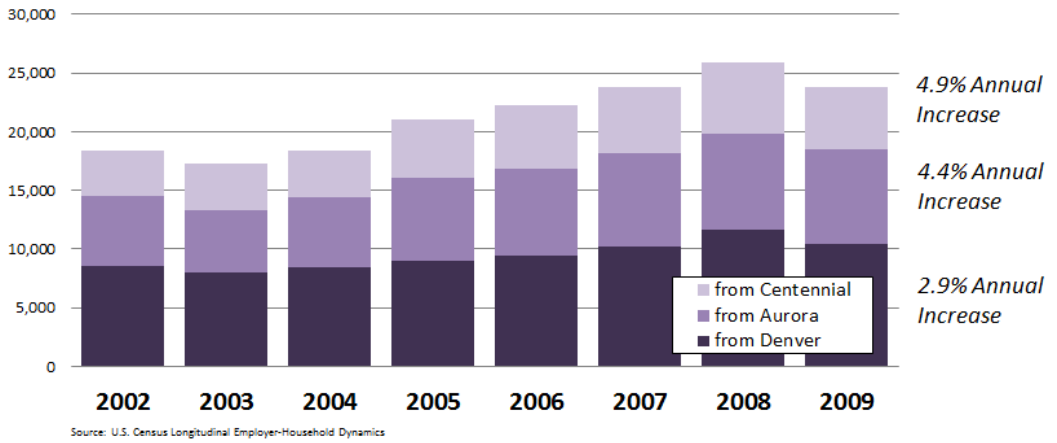
As shown in **Figure 7**, northbound out-commuters total more than 74,000 daily, while in-bound commuters are at approximately 39,500. Commuting is present but not as significant to the east, west, and south. Out-commuting is particularly present to locations such as downtown Denver, the Technology Center, and to Aurora, as illustrated in **Figure 8**. While the time period analyzed evidences the loss of jobs at the Tech Center and Aurora, the number of out-commuters to these locations also fell from 2002 to 2009. On the other hand, the number of commuters to Denver increased at an average annual rate of 3.0 percent.

Figure 8
Out-Commuting Patterns, 2002-2009
Douglas County Housing Nexus Study



At only 30,500 employed Douglas County residents working in the County, approximately 59,000 workers must commute in from other locations. Of these, nearly half come from Denver, Aurora, and Centennial, as illustrated in **Figure 9**. Between 2002 and 2009, commuting from Denver represented approximately 12 percent of all in-commuters, and increased at an average rate of 2.9 percent. During the same time, commuting from Aurora, which accounts for eight percent of in-commuters, increased at 4.4 percent per year. And commuting from Centennial, which represented approximately six percent of in-commuting, increased at 4.9 percent per year.

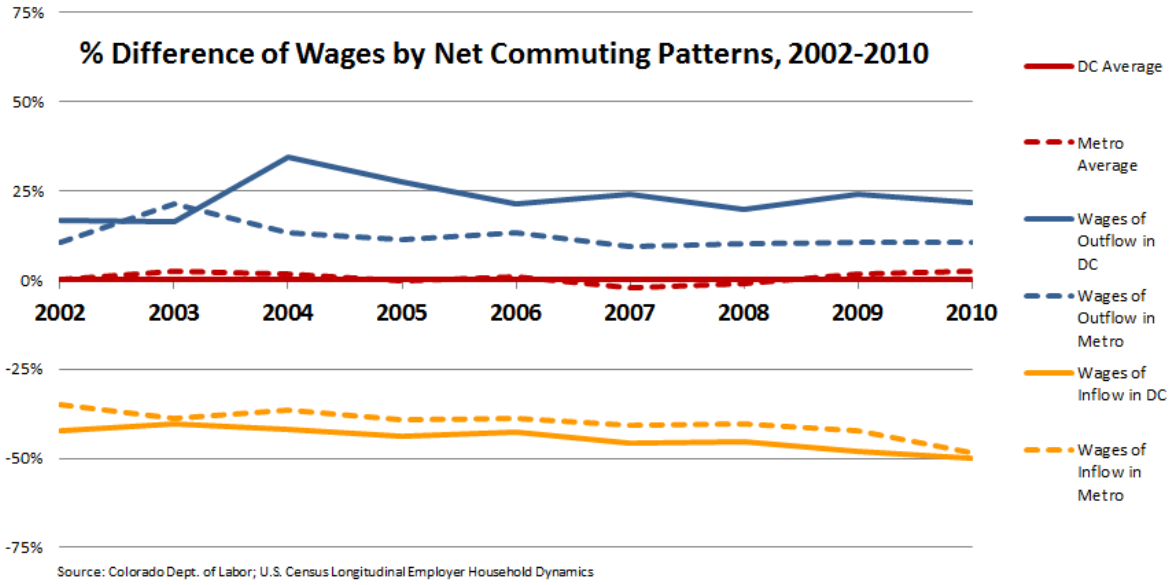
Figure 9
In-Commuting Patterns, 2002-2009
Douglas County Housing Nexus Study



There are, however, a few disparities in industries from the overall, out-commuting, and in-commuting standpoint. Although wages at the Metro level (excluding Douglas County) are higher than the County's average wages (see **Figure 7**), wages for County residents that commuting out for work are not higher than the average wages in those fields within the County. As illustrated in **Figure 10** (and also **Appendix Figure A4**), for industries with net out-commuting trends, wages were nearly 25 percent above the average wage, whereas, in the Metro Area (where the workers are travelling for a job), average wages are approximately 10 percent higher than the average wage.

Similarly, the average wages of industries with net in-commuting are lower in Douglas County than they are elsewhere in the Metro Area. That is, workers holding jobs (in Douglas County industries with net in-commuting) are getting paid less on average than if they were to go elsewhere in the Metro Area.

Figure 10
Wages by Commuting Patterns
Douglas County Housing Nexus Study



Source: Colorado Dept. of Labor; U.S. Census Longitudinal Employer Household Dynamics

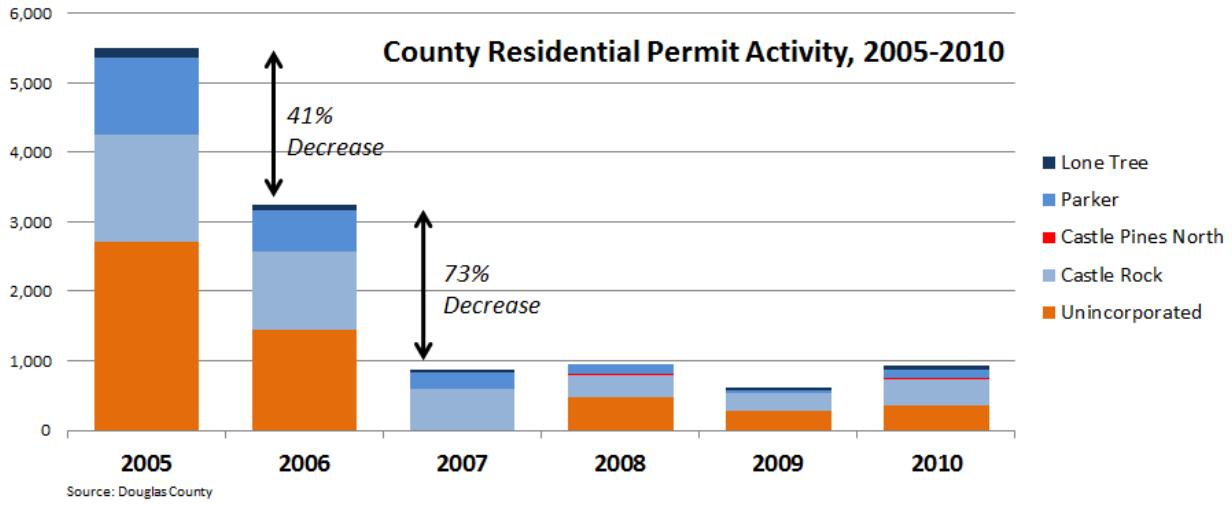
Housing Market Conditions

This section provides an overview of the for-sale and rental housing conditions and trends for Douglas County. The analysis examines for-sale and rental building activity, price and volume trends for ownership product, and rental conditions and rates for the rental market.

Building Activity

Nationally and regionally, the housing market contracted severely in 2006. In Douglas County, construction of residential development contracted 41 percent from 2005 to 2006 and again 73 percent from 2006 to 2007, as shown in **Figure 11**[2].

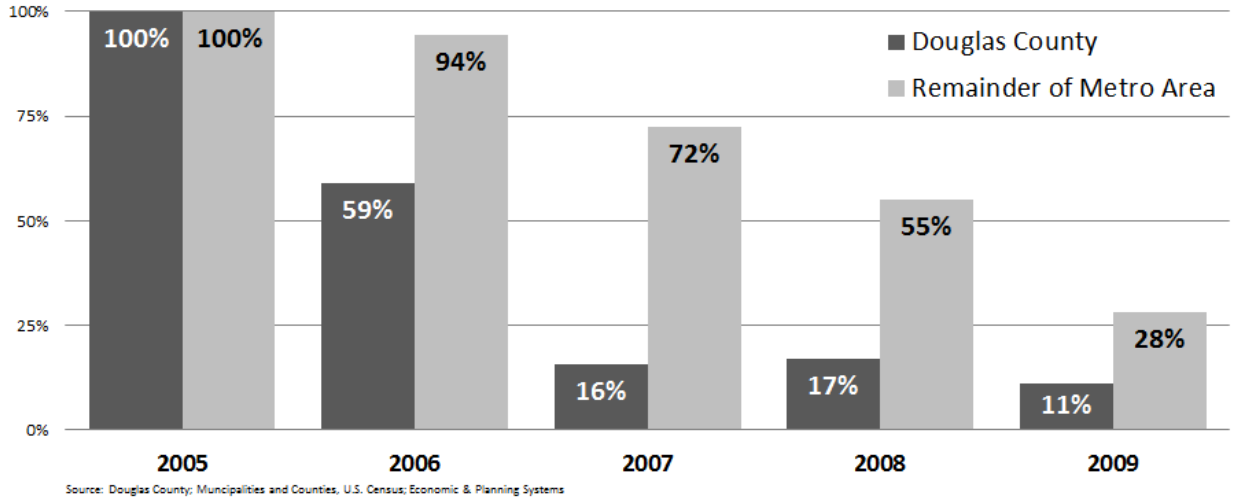
Figure 11
Residential Building Activity, 2005-2010
Douglas County Housing Nexus Study



Overall, the declines in Douglas County construction activity were sharper than at the Metro level. As shown in **Figure 12**, the County's activity dropped to approximately 16 percent of its 2005 level in two years, whereas the activity at the Metro level dropped to approximately 28 percent of its 2005 level in five years.

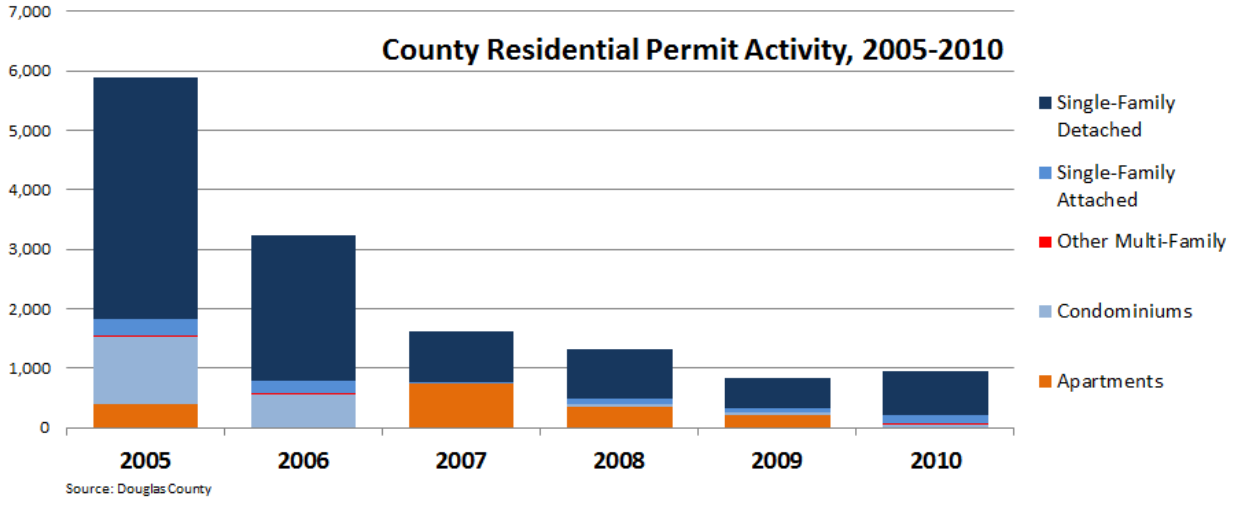
[2] While the decline from 2005 to 2006 was steep, the County's activity in 2006 still accounted for 18 percent of all Metro Area building (please refer to **Appendix Table A1**).

Figure 12
Residential Building Activity, 2005-2010
Douglas County Housing Nexus Study



Over this six-year period, single-family detached product accounted for 68 percent of all building activity, as shown in **Figure 13,** followed by condominium and apartment construction. Using information from the Metro Denver Apartment Vacancy and Rent Survey (2011), approximately 1,667 apartment units were constructed between 2005 and 2010, accounting for 12 percent of all activity for these six years. Similarly, condominium construction accounted for 13 percent of activity.

Figure 13
Residential Building Activity, 2005-2010
Douglas County Housing Nexus Study

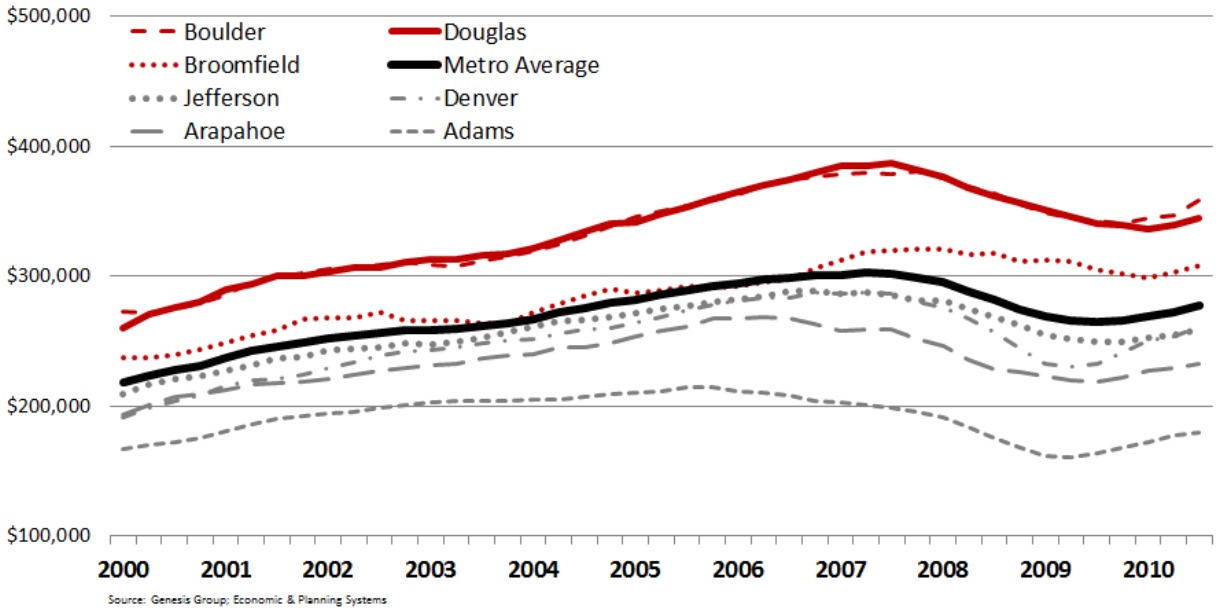


Ownership Trends

Within the metropolitan area, as shown in **Figure 14**, Douglas County has remained at or near the top in terms of average sales prices since 2000. Average housing prices peaked at different times during the past decade, as each county's markets experienced varying degrees of demand. Overall, the seven-county metro area peaked in the second quarter of 2007 at approximately $302,500 for the average home. Adams County, however, peaked first in the fourth quarter of 2005 at nearly $215,000, and Broomfield peaked later in the first quarter of 2008 at approximately $321,000. Douglas County peaked at approximately $387,000 in the third quarter of 2007.

Note: These data are from an independent dataset (The Genesis Group) and report a slightly different average for Douglas County than the data in the following trend information.

Figure 14
Metro Area Sales Prices, 2000-2010
Douglas County Housing Nexus Study

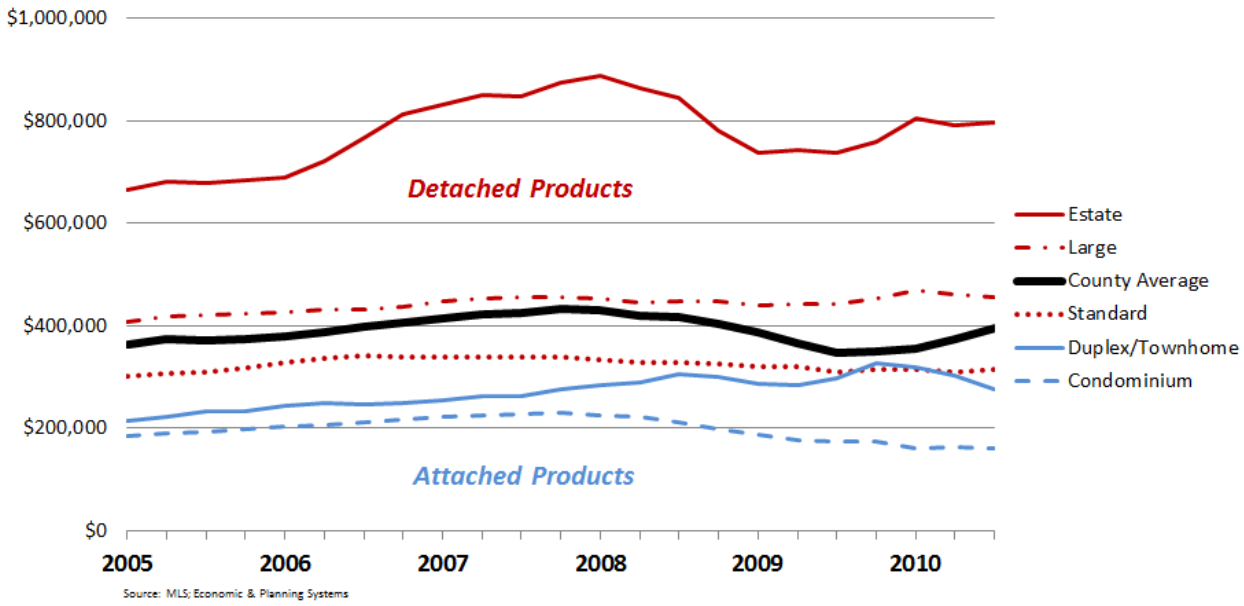


Average sales prices, using data collected from the multiple listing service, for home resales in the County have remained relatively constant since 2005, as illustrated in **Figure 15**. Overall, prices escalated 18 percent from approximately $364,000 to more than $430,000 from 2005 to the peak in late 2007. After the housing industry collapse, however, prices fell more than they had gained during the previous years. By the middle of 2009, average prices had dropped more than $80,000 or more than 19 percent. Since then, prices have rebound by approximately 13 percent are currently just shy of $400,000.

In general, sales prices for units on standard lots (less than 7,000 square feet) remained flat, increasing at an average rate of 0.9 percent per year from 2005. Average prices for units on large lots (7,000 to 15,000 square feet) increased at a rate of 2.2 percent per year, and average sales prices for units on estate lots (larger than 15,000 square feet) increased at a rate of 3.7 percent since 2005. It was these estate lots, moreover, that contributed most to the fluctuations in average house prices. Between 2005 and their peak, estate prices increased 33 percent or more than $220,000, and fell by 17 percent or more than $150,000.

Condominiums, however, have been the weakest market in the County. In 2005, the average unit sold for approximately $185,000 and peaked more than $45,000 higher at $230,000. Unlike the other markets, the condominium market has not recovered since the middle of 2009 when the other product types hit bottom. The average price continues to decline, evidencing a weak condo market.

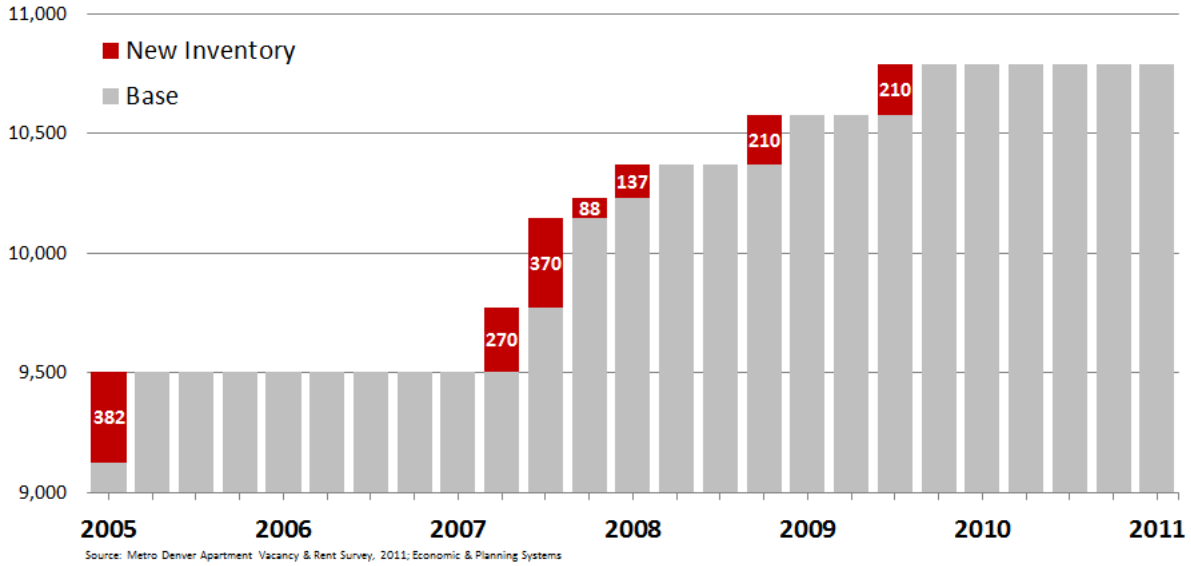
Figure 15
Average Sales Prices by Product Type, 2005-2010
Douglas County Housing Nexus Study



Rental Trends

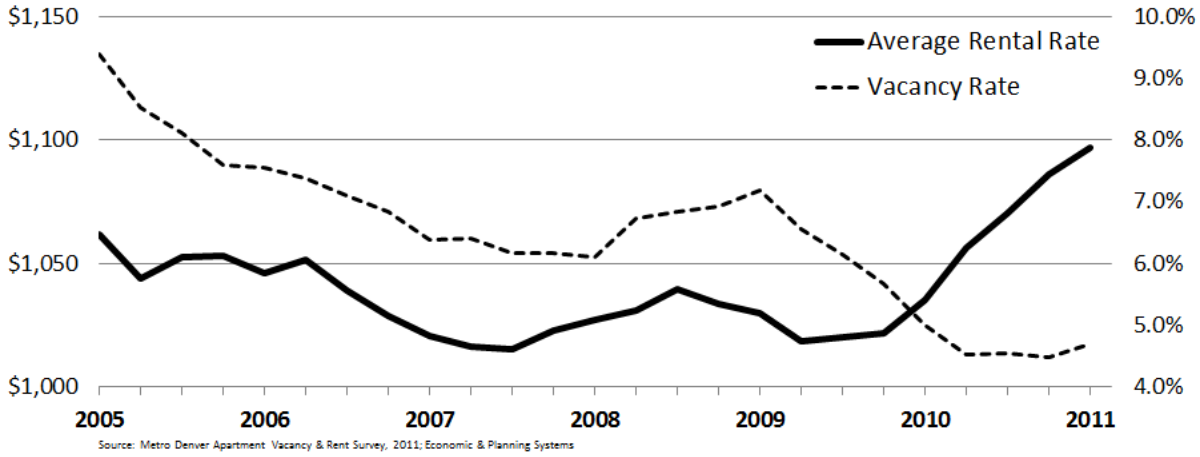
Since 2005, approximately 1,670 apartment units have been constructed in Douglas County, as illustrated in **Figure 16**. Construction activity was particularly strong between 2007 and 2009 when more than 1,000 units were added. Since the middle of 2009, however, no new units have been added to the inventory.

Figure 16
Rental Inventory, 2005-2011
Douglas County Housing Nexus Study



During this period, the average rental rate increased from approximately $1,050 per month to $1,100 per month, as shown in **Figure 17**. Most significantly, however, when viewed in conjunction with the increase of inventory, has been the decrease in vacancy. On average, vacancy rates dropped from 9.0 percent in 2005 to less than 5.0 percent by 2010.

Figure 17
Rental and Vacancy Rates, 2005-2011
Douglas County Housing Nexus Study



4. NEXUS ANALYSIS

Legal Basis for Fee

Housing linkage programs and housing fees in-lieu of construction are a community's response to the goal of providing housing options for a broader range of community residents. Often these types of programs are established in communities with increasing housing costs and an increasing need for affordable housing not being met by the private sector. These types of programs make provisions for an adequate amount of affordable housing generated by developments that create jobs, particularly addressing demand for low- to moderate-wage employees. These programs require developers to contribute to this affordable housing demand by either building units or paying a fee in proportion to the need.

Background

The purpose of this section is to address the legal issue of the nexus study and to show that the proposed mitigation fee is derived from local economic factors. The benefit is two-fold: it assists the community in the development of an appropriately designed and quantified linkage program, and it provides a basis for the program in the event of a legal challenge.

The benefits of a linkage program also include the following:

- Strengthens and broadens the local laborforce, where the employers benefit from a local laborforce that is closer to County's employment centers and, with a range of housing costs, provides employees with a range of wage requirements.
- Requires developers to contribute to the provision of affordable housing and addresses the housing needs of employees generated by the future residents of a given development.
- Benefits employers' ability to attract workers to the region with the availability of affordable housing.
- Improves worker productivity, as the general quality of life increases for local employees (i.e. reduced commute time, savings on transportation, etc.).

Motivation for Communities to Adopt a Linkage Program

Linkage programs are one method local governments can establish to ensure that adequate affordable housing is provided with new development. Determining the portion of the needed affordable housing attributable to a specific development, however, is challenging. Therefore a rigorous nexus must be completed to establish the degree of impact associated with a given development proposal.

In high-value areas (high household incomes and high average housing costs) such as Douglas County, much new construction is priced outside the reach of the local workforce (such as retail workers, teachers, and construction workers). Because units priced affordably for these workers have not been built in the County proportional to the need, these workers live elsewhere in the Denver Metro Area or outlying areas and either endure long commutes to reach Douglas County,

or find employment that is closer to their homes, requiring Douglas County employers to replace them.

The objective here is to document the nexus between new housing units, employment generation patterns, and their associated housing demands in Douglas County. The multi-step process of establishing the proportion of affordable housing demanded by an amount of development is as follows:

- **Service Industry Job Generation**: Estimate the number of jobs created by new residential development.
  - **Retail**—generated by the market rate unit household's annual expenditure on a variety of retail categories.
  - **Education**—generated by the average number of children per unit household.
  - **Construction**—generated by the portion of costs associated with labor to construct the new unit.
- **Household Generation**[3]: Estimating the number of households created by the jobs resulting from new development.
- **Household Income Levels**: Estimate the number of households by area median income (AMI) level to identify those that are anticipated to require low- to moderate-income housing.
- **Household Financing Gap**: Using an average of Douglas County's housing sales prices (excluding large and estate homes) and a household's affordable purchase price, estimate the gap between the cost of housing and the target affordable price.
- **Fee In-Lieu**: Determine the fee, i.e. the amount of subsidy, per unit required to offset the aggregate financing gap for households generated.
- **Participation Rate**: As a policy decision, most communities across the country cover between 10 and 20 percent of the total demand generated. This final calculation determines the target demand coverage rate for the community.

Nexus Analysis

To provide a nexus study for Douglas County that links employment needs to residential development, EPS has selected three employment categories for analysis. These reflect important sectors to the local community, both for economic purposes as well as community quality of life. Clearly, many additional employment sectors exist. Thus, the resulting fees associated with these three results in a conservative figure, as a broader analysis would result in greater employment demand and a correspondingly higher set of fees.

[3] Households are determined by dividing the number of workers by the local or regional average workers per household ratio. While it would not be common for multiple retail, education, or construction workers, for example, to reside in the same household, this calculation avoids overestimating affordable housing demand.

Methodology

EPS has calculated in-lieu fees based on the estimated impact that new housing product has on demand for affordable housing. The demand for affordable housing units is estimated as a number of income-qualified local workers required to support the expenditure of residents from market rate units followed by a calculation of the gap required to construct housing for those workers.

- **Retail Expenditure-Based**: This methodology uses income-specific consumer expenditure data to estimate the local retail and service-sector workers required to support expenditures from the residents of new units.
- **Teacher-Based**: This methodology uses housing density-specific school children generation rates and teacher to student ratios to estimate the number of teachers required to support the households of new units.
- **Construction Worker-Based**: This methodology uses labor cost proportions of new construction and average construction worker salaries to estimate the number of construction jobs supported by new units.

Data Sources

The following data sources have been used to estimate the nexus between new units and the demand for each type of households described above.

- **Consumer Expenditure Survey (Bureau of Labor Statistics)**: The Consumer Expenditure Survey (CES) collects information on buying habits of American consumers. The CES is completed annually by the U.S. Census Bureau for the BLS and contains annual expenditure information for all consumer items from housing, transportation, healthcare, entertainment, retail, education, and insurance, among others. Although these data are only available at the national level, data are available in a variety of cross-tabulations, such as by income level, age category, household size, household type, tenure, race/ethnicity, wage and salary earner types, and education level. EPS applied the income-specific expenditure data to the retail expenditure-based demand methodology.
- **Economic Census (U.S. Census of Retail Trade)**: Every five years, the U.S. Census collects basic data for retail and service establishments including the type of business, location, dollar volume of sales, payroll, and employment. The data collected contain information on sales by class of customer, sales by merchandise line, method of selling, and industry-specific measures. For classification purposes, the data are available at the six-digit NAICS level. For this analysis, EPS has used these data at the three- and four-digit levels. These data are paired with the CES data described above to estimate payroll levels for each retail category.
- **Housing Costs**: MLS sales data were used to establish average sales prices for different types of units common to Douglas County development. EPS established:
  - **Townhome**
  - **Condominium**

  - **Standard Single Family Lot:** Less than 7,000 square feet.
  - **Large Single Family Lot:** 7,000 to 15,000 square feet.
  - **Estate Single Family Lot:** Greater than 15,000 square feet.
  - **Apartment**: Costs were developed from the Denver Metropolitan Apartment Vacancy & Rent Survey

- **Douglas County School District**: EPS obtained information regarding school children generation rates by density of development, in addition to student-teacher ratios for the district. Using average densities associated with the three types of single-family development described above, EPS estimated the number of school teachers needed to serve new development.
- **Bureau of Economic Analysis (BEA)**: BEA prepares annual estimates of personal income for local areas annually. The data are estimates of compensation, including wages and salaries plus supplements to wages, and earnings, including compensation plus proprietors' income, by place of work. EPS has applied these data to the methodology for determining number of construction workers needed for construction.

Impact Categories

This section details the impacts associated with the introduction of new units into the County's economy and the resulting demand created for affordable housing. The categories of demand assessed affect the retail and service sector, educational services, and the construction sector. Each section provides a quantitative description of the nexus between new housing and the demand for affordable housing. The information includes the detailed calculations used to estimate the impact, the financing gap for each resulting household, and the basis for a fee in-lieu for single-family and multi-family units.

Retail Expenditure-Based

Households holding retail and service sector jobs are estimated from income-specific expenditure levels of households in new units and information on the portion of retail gross receipts related to payroll. An abbreviated form of this methodology is shown in **Table 1**. According to the CES, households with larger incomes typically spend more on goods and services than households with lower incomes. These higher-income households create more lower-income jobs and a greater affordable housing demand.

In the example in **Table 1**, 100 new units generate demand for 22 retail workers and 16 households. A household income necessary to purchase one of the new units is determined first[4]. Using CES data, an expenditure level according to that income is quantified by general

[4] Averaging the sales prices of all for-sale housing product in Douglas County (including all single-family detached product, single-family attached, and multi-family product). Assuming that an average house costs approximately $380,000, the required annual household income to purchase this home would be approximately $93,000, using industry standard affordability and mortgage assumptions (30 percent of total household income is spent on housing, financed with a 10 percent down-payment, 30-year fixed rate at 5 percent).

retail categories (such as groceries, eating out, housekeeping supplies, furnishings, apparel, gasoline, vehicle maintenance, medical supplies, entertainment, personal care, and others) and is further disaggregated by three- and four-digit NAICS categories. In the example, a household with an annual income of approximately $93,300 will spend $31,600 on the entire spectrum of retail and service sector expenditure categories. This generates an aggregate $3.2 million in retail expenditure. Using retail a gross receipts-to-payroll (including wages, but not benefits) ratio from the U.S. Census of Retail Trade, the aggregate is quantified into a payroll estimate, which results in the number of supportable workers. This number of workers is divided by the average number of workers per household (using relevant Douglas County statistics from the U.S. Census and Colorado Department of Labor).

Note: For comprehensive detail on this calculation at each retail category and the number of workers and households that result, please refer to the **Appendix Table A1** through **Table A7**.

Table 1
Example Retail Worker Housing Demand Calculation
Douglas County Housing Nexus Study

Step	Description	Calculation	Value
A	Market-Rate Units		100
B	Average Required Household Income [1]		$93,318
C	Average Income Spent on Retail Categories (2009) [2]		$33,011
D	Aggregate Retail Spending	A x C	$3,301,100
E	Retail Gross Receipts to Payroll Ratio (2007) [3]		7.5 : 1
F	Estimated Retail Payroll	D ÷ E	$440,147
G	Average Retail Wages [4]		$19,721
H	Estimated Total Retail Jobs	F ÷ G	22
I	Average # Workers per Household		1.42
J	Estimated Total Households Created [5]	H ÷ I	16

[1] To afford a unit priced at $380,648

[2] Information comes from the 2009 BLS, Consumer Expenditure Survey.

[3] Most recent U.S. Census of Retail Trade information comes from 2007, a survey conducted every 5 years.

[4] This figure is estimated from an independent source and will differ from other figures reported in this report from the CDLE.

[5] These estimates are calculated with weighted averages; results will differ slightly from the calculations using retail category-specific data.

Source: Consumer Expenditure Survey (2009); Economic Census (2007); Economic & Planning Systems

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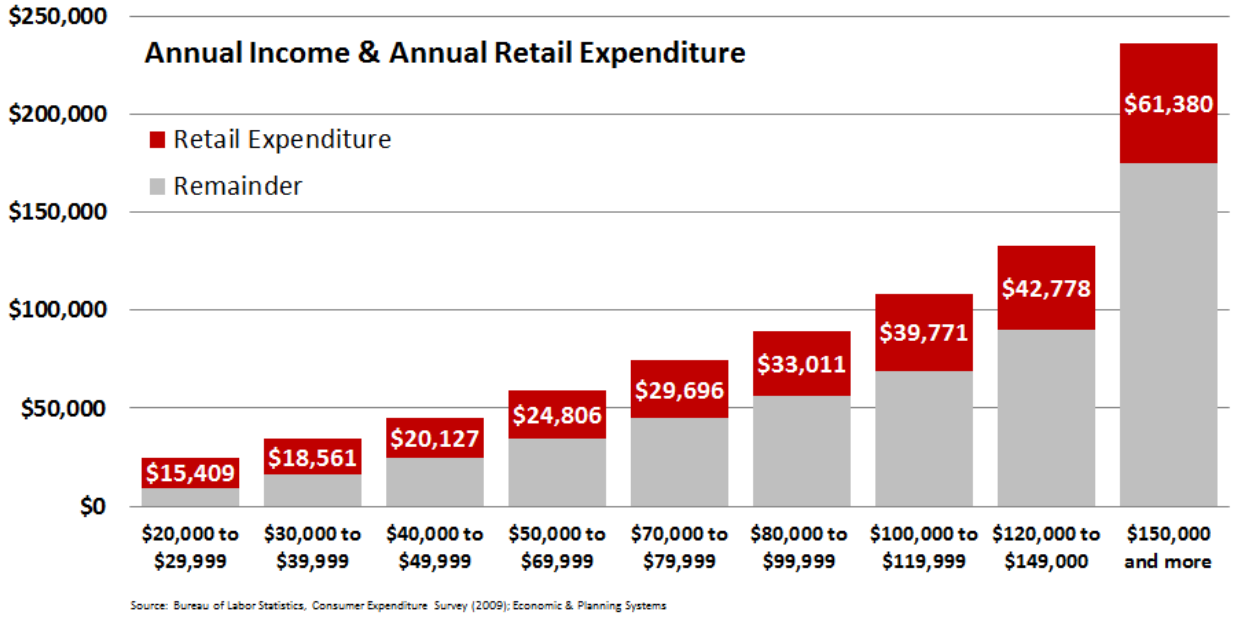
Affordable Housing Demand

As mentioned above, the CES contains income-specific household expenditure data. Households with higher annual incomes tend to spend a larger dollar amount on various retail categories. Households, on the other hand, with lower incomes, spend less on various retail categories but a larger portion of their gross income. **Figure 18** illustrates the varying amounts of annual expenditure by income category.

Figure 18
Annual Expenditure by Income Category
Douglas County Housing Nexus Study



Source: Bureau of Labor Statistics, Consumer Expenditure Survey (2009); Economic & Planning Systems

Table 2 shows the number of households generated by 100 new units of single- and multi-family housing product types. As indicated previously, higher household incomes generated greater demand for supportable retail and service sector jobs than lower household incomes. Also as described previously, household incomes are estimated to be necessarily higher to afford units (such as large single-family or estate single-family units) in higher price ranges.

As shown, for example, the expenditure from 100 households in new standard-sized units (on a lot of less than 7,000 square feet) generates demand for approximately 15 households. On average, shown at the bottom line of the single-family and multi-family estimates rows, 100 units of the weighted average cost for single-family product generates demand for approximately 20 households in various AMI categories[5]. (Note: This calculation is determined as the weighted average of households generated using the distribution of various unit types in development activity over the past five years.) Similarly, 100 multi-family units produce demand for approximately nine households.

Table 2
Expenditure-Based Household Generation
Douglas County Housing Nexus Study

	Development Distribution [1]	Household Generation Rate (per 100 Market-Rate Units)			
		Low Income 50% to 80% AMI	Moderate Income 80% to 120% AMI	Greater than 120% AMI	Total
Single-Family					
per 100 Standard Lots	34%	12.5	2.0	0.2	14.7
per 100 Large Lots	17%	17.5	2.6	0.2	20.4
per 100 Estate Lots	17%	29.5	3.8	0.3	33.6
per 100 Duplex / Townhomes	6%	10.1	1.7	0.2	12.0
Overall per 100 SF Units	74%	**17.4**	**2.5**	**0.2**	**20.2**
Multi-Family					
per 100 Condominium	13%	7.8	1.4	0.1	9.4
per 100 Apartment	12%	7.8	1.4	0.1	9.4
Overall per 100 MF Units	25%	**7.8**	**1.4**	**0.1**	**9.4**

[1] These percentages come from the distribution of residential building activity over the past five years.

Source: Douglas County; Economic & Planning Systems

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[5] For the purpose of an affordability analyses, such as this nexus study, it is an industry standard to use the median income recognized by either the Colorado Division of Housing or the Department of Housing and Urban Development for estimating affordability needs. As such, the median household income used for this analysis is the Denver Metropolitan Area median of $59,932.

Teacher Demand

The number of teachers and resulting households is determined by using information available from the Douglas County School District. The District closely monitors its number of students and teachers, as well as the levels of student generation for various housing development densities.

The example calculation, as shown in **Table 3**, illustrates that 100 market rate units built to 5 dwelling units (d.u.) per acre generates demand for 5 teachers and approximately 4 households. (Please refer Appendix **Table A9** for additional information on student generation rates by housing density.) In the example, units built at this density generate 0.78 students per unit, and for each 15.2 students, there is demand for one new teacher. Applying the average number of workers per household then determines the number of households.

Table 3
Example Teacher Housing Demand Calculation
Douglas County Housing Nexus Study

Step	Description	Calculation	Value
A	Total Market-Rate Units		100
B	Average Development Density by Product Type		5.00 d.u./ac.
C	K-12 Student Generation Rate per Unit		0.78
D	Estimated Total K-12 Students	A x C	78
E	Average Teacher to K-12 Student Ratio		15.2
F	Estimated Total Teachers	D ÷ E	5
G	Average # Workers per Household		1.42
H	Estimated Total Households Created	F ÷ G	4

[1] Remaining portion of household income set at average County wages.

Source: Economic & Planning Systems

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Construction Worker Demand

Construction workers and resulting households are estimated by using industry standards and data available regarding housing price components (i.e. materials, labor, land, profit, etc.) and wage levels for construction workers. As shown in **Table 4**, construction of 100 market rate units generates a demand for approximately 55 workers and 39 households. Labor costs make up a large portion of the total sales value of a home. In the Denver Metro area, 55 percent of a home's sales value is generally attributable to hard costs, of which approximately 50 percent is attributable to labor. At an average sales price of approximately $365,500, 100 market rate units would equate to approximately $20.1 million in hard costs at 55 percent of total value. Labor costs, at 50 percent or $10.0 million, are divided by the average construction worker salary (wages and benefits) to determine the number of workers, which is then divided by the number of workers per household.

Table 4
Example Construction Worker Demand Calculation
Douglas County Housing Nexus Study

Step	Description	Calculation	Value
A	Total Market-Rate Units		100
B	Total Market Valuation		$36,550,000
C	Percent Hard Costs of Market Valuation		55%
D	Hard Cost Valuation	B x C	$20,102,500
E	Percent Labor of Hard Costs		50%
F	Total Labor Costs	D x E	$10,051,250
G	Average Construction Salary (with Benefits)		$51,842
H	Total Jobs	F ÷ G	194
I	Years on Job per Worker		3.5
J	Estimated Construction Workers	H ÷ I	55
K	Average # Workers per Household		1.4
L	Estimated Households	J ÷ K	39

Source: Economic & Planning Systems

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In total, 100 units of single-family housing generate demand for 63 households, as shown in **Table 5**. And for every 100 units of multi-family housing, there are 30 households generated.

Table 5
Summary Affordable Household Demand
Douglas County Housing Nexus Study

	Income Level			
	Less than 50% AMI	50% to 80% AMI	80% to 120% AMI	Total
Single-Family Demand				
Expenditure-Based	0	17	3	20
Teacher-Based	0	0	4	4
Construction Worker-Based	0	0	39	39
Subtotal	**0**	**17**	**45**	**63**
Multi-Family Attached Product				
Expenditure-Based	0	8	1	9
Teacher-Based	0	0	1	1
Construction Worker-Based	0	0	19	19
Subtotal	**0**	**8**	**22**	**30**

Source: Economic & Planning Systems

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Financing Gaps

The financing gap reflects the difference between what a household can afford (based on wages, assuming 1.4 jobs per household) and the cost of housing. Under the assumptions[6] identified in **Table 6**, the financing gap for a household in the 50 to 80 percent range is $81,500, and households in the 80 to 120 percent range have a gap of $27,600 per unit.

Table 6
Financing Gaps by Income Level
Douglas County Housing Nexus Study

	Factor	Income Level		
		Less than 50% AMI	50% to 80% AMI	80% to 120% AMI
Cost of Housing [1]		**$280,200**	**$280,200**	**$280,200**
Maximum Supportable Unit Price				
Average Household Income [2]		$30,000	$47,900	$59,900
Gross Income Available for Housing	30%	$9,000	$14,370	$17,970
Monthly Payment Capacity		$750	$1,198	$1,498
Less: Insurance	$1,000	-$83	-$83	-$83
Less: Taxes (Rounded)	1.0%	-$90	-$150	-$190
Net Income Available for Housing (Rounded)		$580	$960	$1,220
Mortgage Rate	5.0%	5.0%	5.0%	5.0%
Mortgage Term	30 years	30 years	30 years	30 years
Loan Amount (Rounded)		$108,000	$178,800	$227,300
Downpayment (Rounded)	10%	$12,000	$19,900	$25,300
Total Supportable Unit Price		**$120,000**	**$198,700**	**$252,600**
Financing Gap		**$160,200**	**$81,500**	**$27,600**

[1] Weighted average value of housing for standard lot SF, duplex / townhome, condominium, and apartments at 2010 sales prices / rents.

[2] Using household income medians for the Denver Metropolitan area.

Source: Economic & Planning Systems

H:\20874-Douglas County Nexus Study\Models\[20874-NexusModel-071511.xlsx]FINANCING GAP SUMMARY

[6] One of the key assumptions commonly used is an industry standard used for affordability measures around the state of Colorado and is also recognized by the Department of Housing and Urban Development and U.S. Census as the "cost-burden" limit. This defines that a household spending more than 30 percent of its income on housing is considered cost-burdened. While commonly used as the affordability metric today, EPS recognizes that different industry standards have existed in the past, such as the income multiplier. For example, a household would have been advised in the past to purchase a home for no more than three times its annual income. The difference between those conditions and conditions today are the mortgage interest rates. On average, today's rates are considerably lower than those of 10 or 15 years ago. Thus, applying a lower interest rate to the affordable purchase price calculation today yields a multiplier higher than what used to be recognized as an affordability limit.

Also, housing costs in this table have been identified as the average of the lower-priced alternatives, recognizing that the County's estate homes are out of reach for most buyers and have been eliminated from the analysis to avoid artificially inflating the cost factor, and unrealistically increasing the fee calculations.

Fee In-Lieu

Overall, a fee in-lieu of approximately $26,600 is estimated to cover 100 percent of the financing gaps of the 63 households generated by 100 single-family units, as shown in **Table 7**. A fee in-lieu of approximately $12,400 is estimated to cover 100 percent of the 30 households generated by 100 multi-family units. The fees in lieu are estimated by multiplying the households generated (**Table 5**) and the financing gaps at respective AMI levels (**Table 6**). The aggregate financing gap is divided by the number of market rate units.

Table 7
Summary Fee In-Lieu
Douglas County Housing Nexus Study

	Income Level			
	Less than 50% AMI	50% to 80% AMI	80% to 120% AMI	Total
Single-Family Detached Product				
Affordable Units Required per 100 Units	0	17	45	63
Financing Gap per Unit	$160,200	$81,500	$27,600	
Aggregate Financing Gap	$0	$1,417,145	$1,246,503	$2,663,648
Fee In-Lieu per Unit	**$0**	**$14,171**	**$12,465**	**$26,636**
Multi-Family Attached Product				
Affordable Units Required per 100 Units	0	8	22	30
Financing Gap per Unit	$160,200	$81,500	$27,600	
Aggregate Financing Gap	$0	$637,600	$600,164	$1,237,764
Fee In-Lieu per Unit	**$0**	**$6,376**	**$6,002**	**$12,378**

Source: Economic & Planning Systems

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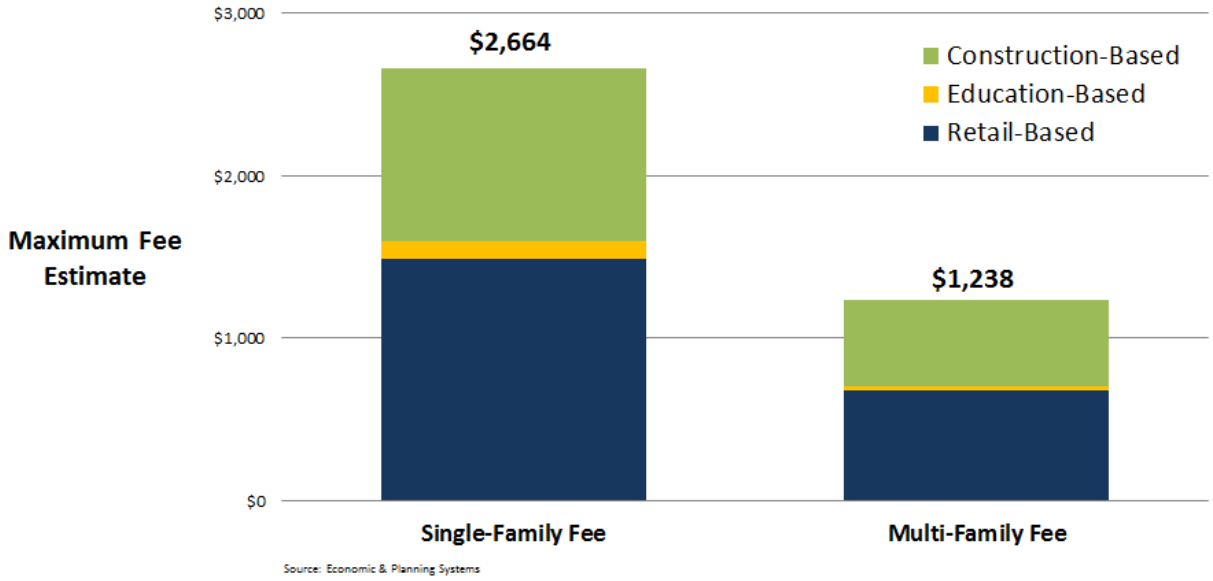
Participation Rate

EPS recommends, as a matter of policy, a fee in-lieu that covers a portion of the aggregate financing gap, using a participation rate. As mentioned previously, most communities choose to cover between 10 and 20 percent of the affordable housing demand in a linkage program. The fees shown in **Figure 19** are structured to cover 10 percent of the housing demand generated by each new unit. As such, these fees in-lieu would cover approximately 6 households for each 100 single-family units and approximately 3 households for each 100 multi-family units built.

Figure 19
Fee Estimates Covering 55 Percent Household Demand
Douglas County Housing Nexus Study



Douglas County Contextual Considerations

This section is provided to document a few important contextual considerations to the implementation of an impact fee. During the project, EPS and Douglas County staff conducted two focus groups with representatives from the retail, economic development, education, and healthcare industries. EPS also conducted interviews apart from these efforts with representatives of the development and real estate community. This section is an overview of the research and findings from those outreach efforts.

Recruitment and Retention Issues

The first of these contextual considerations was business recruitment and retention issues. Focus groups were held in April 2011 to gather perspectives from the retail, economic development, education, and health care industries and document their understanding of these issues. These meetings were generally well-attended with approximately 10 to 15 members each. Representatives were present from organizations such as the Castle Rock Outlets, board members from the Douglas County Housing Partnership, Highland Ranch Chamber of Commerce, Douglas County Office of Economic Development, Castle Rock Office of Economic Development, Douglas County School District, Douglas County Library, Lone Tree Chamber of Commerce, Parker Hospital, Sky Ridge Hospital, representatives of the private development community, and residents.

Wages

EPS presented the economic profile for the County to focus group participants, describing the trends and conditions of the economy and illustrated the contraction of the workforce from its peak in 2008. Industries where fluctuations in the larger economy result in pronounced shifts in employment, such as retail, lost a significant number of jobs. Moreover, the retail industry imports a substantial portion of its workforce from outside the County, also as noted in the economic profile chapter.

One of the issues most commonly raised during the focus groups was wages. Retail representatives indicated that they could attract and retain workers so long as they offered wages in the $10 to $12 per hour range. Health care industry representatives also indicated that $11 was the threshold for a worker willing to take a job. Accentuating sensitivity to wages, they reported that, when offered health insurance, workers opted out to save the premium deducted from paychecks.

As indicated previously, the average retail wage in Douglas County is approximately $24,600, or approximately $11.50 per hour, confirming that the County's retailers are paying wages in the range of that threshold identified by focus group participants. Several concerns arise, however, when this information is paired with research from this report—competitive wages and housing. That is, while wages are competitive, they are generally not sufficient to enable workers to live (rent or own) in Douglas County.

An issue of interest is the competitiveness of wages for the retail industry in Douglas County. Participants indicated that the sector has the ability to raise wages, but only for management level workforce. Compounding this problem is that management level positions are being asked more frequently to oversee multiple locations and at the same time, provide coverage for otherwise vacant employee positions.

Commuting and Transportation

Another issue commonly raised was commuting, i.e. the cost of transportation. Representatives from both health care and retail indicated that a majority of their workforces live outside the County. According to many participants, the County is not seen as an optimal location for lower-income households, because there are too few public transportation options. While the light rail enters at the north end of the County at Lincoln in Lone Tree, retail centers and other employment centers are generally not accessible from the station. Sky Ridge Hospital, for example, which is on the south side of Lincoln approximately one mile away from the light rail station, operates shuttle bus service from the station to a place of employment, but this feature does not represent the norm. Such operations, while successful for larger employers, are not feasible for smaller employers or would be difficult to establish for smaller or scattered employment centers.

Additionally, commuting for a retail job in Douglas County seems not to be on a sustainable path. In the Denver Metro area, excluding Douglas County, retail wages are approximately $28,600, which translates to approximately $13.75 per hour. With the cost of commuting ranging between $5,250 to or from Centennial and $8,300 to or from Aurora, where many of the industry's workforce is coming from, the workforce is severely cost-burdened (i.e. spending more than 50 percent of their income on housing and job-related transportation). They also indicated that when fuel costs are high, they retain their workforce only when they were able to offer wages in excess of this range, particularly during the recession.

Economic Development

Recruiters for individual industries as well as economic development staff often look for diversity of housing stock when recruiting staff or recruiting new employers seeking to relocate. Douglas County's housing stock, however, lacks a diversity of options on the lower end. While the County's housing stock evidences an affluent and well-educated population, it does not reflect a diversity of skill levels. This is a problem particularly for industries such as education, health care, retail, and construction, which often recruit a workforce with specific skill sets not commonly found in the County's laborforce. Similarly, economic development officials state that recruiting any company, with light industrial given as an example, is difficult because the prospective businesses want to know that there is available workforce in the vicinity.

In this respect, there is a perception that housing in Douglas County is an obstacle. Housing in the County has been developed primarily for a particular demographic: a household with children that will, as identified by participants, live in the County for an extended period of time. On the other hand, multi-family development is, according to the participants, not viewed positively in the County by its residents.

Housing Costs

Participants indicated that the hourly wage workforce, such as retail, banking, and healthcare generally finds housing in rental units. At the County's average retail wage, for example, an

affordable rental (no more than 30 percent of income) would be $600 per month, which is 55 percent below the County's overall average of $1,100. In this situation, the feasible option for this workforce is to find roommates, which participants identified was a particularly common trend since the recession's beginning. With two retail salaries in one household ($49,200 before taxes), housing affordability at 30 percent of income translates to $1,230 per month, which is the average-priced two-bedroom/two-bath unit at $1,220 per month. Representatives of the healthcare industry also indicated that efforts to help its workforce find living arrangements in the County, but that many still need roommates to afford it.

Banking industry representatives indicated that tellers will often continue to commute (i.e. choose not to live in Douglas County) even when promoted and their wages would make living in the County more feasible. That a worker would choose not to move closer to a place of work even if promoted speaks to a crucial trend in employment-housing dynamics. As articulated by several participants, a household's decision of where to live is often a higher priority decision, guided by many considerations, whereas the place of employment is a secondary consideration to place of residence.

House Bill 10-1394

The second of the contextual considerations was a bill passed and signed in 2010 called "Concerning Commercial Liability Insurance Policies Issued to Construction Professionals". Sometimes referred to generally as the Construction Defect Legislation, it has been identified as a potential impediment to constructing attached, lower-cost housing. The following is an overview of research and information-gathering through interviews with stakeholders and representatives of the development community, commercial building community, insurance community, homebuilders association, legislative staff, and attorneys who were involved in drafting the legislation.

Overview

The bill's origins stem from two liability insurance cases, known by their abbreviated titles, *General Security* and *Greystone,* both decided in 2009. In *General Security*, the insurance provider (General Security), had denied that it was responsible for providing coverage for a construction defect, where existing statute defined it as an accident/occurrence. Part of the bill's purpose is to clarify how courts interpret future claims, and that the bill is a response to what was perceived as a failure of the court to "properly consider a construction professional's reasonable expectation that an insurer would defend the construction professional against an action or notice of claim."

Additional motivation behind the bill arose out of the other court case, *Greystone*. Following *General Security*, *Greystone* had even greater impact to the construction professionals industry. Not only did it attempt to remove protection from claims of construction defects defined as accidents/occurrences, but held that a construction defect is never covered under general liability. According to some construction professionals involved in hearings regarding the legislation, materials that insurance providers had been publishing were apparently misleading some to believe that defective construction claims would be covered. (None of these materials was considered in the court case, however.)

As such, the legislation's intent is to clarify the definitions of a construction defect for claims purposes, and to generally provide greater certainty. In the first part of the legislation, it is

stated that "insurance policies issued to construction professionals have become increasingly complex, often containing multiple, lengthy endorsements and exclusions conflicting with the reasonable expectations of the insured." In response, the act declares that insurance coverage and an insurer's duty to defend shall be interpreted broadly in favor of the insured. It also ensures that a court still consider application of any exclusions to coverage, because it was not intended to "create insurance coverage that is not included in the insurance policy."

It also places extra burden on the insurance providers. One provision requires that insurance providers have a duty to defend the policy holder in the event of a notice of claim process even if the insurer owes a duty to defend or not. The idea was to reduce defect litigation by encouraging pre-suit settlements.

Since adopted, concerns of construction professionals include:

- Increases to insurance premiums;
- Withdrawal of some insurers from the market;
- Stricter underwriting requirements; and
- Long-term financial burdens.

Development Perspective

EPS interviewed a selection of representatives who work in Douglas County and some who work in the general Denver Metro Area and beyond. Overall, the development community believes that perception of the legislation itself is the largest obstacle to the market's current trepidation. To a greater extent, however, as explained further at the end of this section, the current conditions of the market are responsible for the development community's hesitation to move forward with attached ownership projects.

Some developers report that well-established builders who are willing to pay a small incremental cost for third-party inspections will not incur much in added liability. These builders are confident about future prospects. It was noted, however, that additional premiums for insurance can be substantial and impact profit margins.

To address this perception issue, many feel that solutions may lie in some combination of proactive legislation demarcating liability and cost issues, or government involvement, i.e. a housing authority assumed to offer limited liability status to an attached ownership project, whereby mitigating part of the risk. Along the lines of shared risk, another idea offered was to restructure the ownership of an attached ownership unit in its building to reduce the risk of class action suits. Instead of an owner owning a particular unit, the owner would own a share of the building, whereby the building might be under a single "owner", rather than multiple owners.

Insurance Perspective

Among the assertions that the legislation is creating more problems than it solved, is the notion that the bill eliminated competition in the market (reduced the supply of providers), which resulted in increased premiums (i.e. where the same level of demand with a decreased supply causes prices to increase). While construction professionals who testified at the proceedings explained that the greater certainty and fairness would be worth the additional cost, many are now citing this as the cause for their inactivity in the attached ownership market.

As such, EPS interviewed members of the insurance community and others familiar with its history to clarify a few issues, such as this one. Of importance, insurance providers articulated that general liability coverage (before and after the legislation) is highly dependent on the professional's risk profile and their loss history, and that premiums are dictated primarily by those key factors. Thus, an established builder with a solid track record typically will not have difficulties with coverage.

EPS also spoke with one of the drafters of the legislation to bring greater clarity to some of these issues. This attorney, who represented the interests of the construction professionals, indicated that while it is true that a few (*General Security* and *Greystone*) insurance carriers left the state, four new carriers have entered the market since adoption of the bill. It was also confirmed by other interviewees that Colorado has had a long history of insurance providers entering and exiting the market. As such, EPS believes the argument that a smaller supply of carriers is the cause for higher premiums (whether or not that is true) is not the case.

Conclusions

EPS believes that the impacts felt by the development community are largely the result of generally lower market demand, particularly multi-family ownership product, not the result of HB 10-1394.

- **Stricter underwriting standards**—as the lending industry had underwritten borrowers for home mortgages during the housing boom who were of questionable qualification, the insurance industry also underwrote policies for construction professionals without much scrutiny. Lenders were not properly quantifying the risk of borrowers and insurance providers were not properly examining the risk of their new policy-holders. As mentioned by several of the interviewees, those in the development community who have low risk profiles (i.e. take precautions and build to a high quality) need not be concerned.

- **Policy availability & higher premiums**—with more, not fewer, insurance providers in the state, the supply and demand argument that fewer supplies gives the insurance community greater opportunity to increase premiums is not the case. In terms of cost, insurance providers evaluate the individual risk profile and history of a prospective policy-holder to determine premiums. A construction professional with a low risk profile and a good history is not generally likely to have excessively high premiums.

- **Lower Demand**—perhaps the most compelling argument against the effects of the legislation is the assertion that market demand has dried up for attached ownership product. In the case of the Denver Metro area, this may be true, but not because of the legislation. In the past few years, all market segments have contracted. Developers have turned to entry-level single-family product as the alternative with the least risk, greatest demand, and the most likely to be financed.

County Challenges

EPS perceives that the biggest challenge for Douglas County is attempting to find a county solution to a state issue. The question of jurisdiction is necessary to ask before moving forward. As one developer articulated, a possible solution to riding out the lull in multi-family ownership demand is to go about development in a more old-fashioned way, i.e. to building apartments and plan for a condo conversion sometime down the road. Under the current market conditions, EPS

believes there is merit to this suggestion, given the high demand for apartments at the moment. Rents are increasing and vacancies continue to be very low metro-wide.

One of the challenges that faces the construction professional community is the prospect of a claim and the lengthy and costly process it must go through before settlement. Currently, another piece of legislation, HB 01-1166, known as Construction Defect Action Reform Act (CDARA), governs construction defects claims. Some perceive that this legislation allows for and even discourages pre-suit settlements. One possible solution would be to disincentivize defect claims by allowing for a pre-claim "fix", where the construction professional would be able to remedy the construction defect before going to court under CDARA's 90-day process. This would reduce legal costs for all parties, and EPS believes that, optimally, a change to the legislation should occur.

Balanced Community Alternative

Within the context of the business recruitment and retention issues and the regulatory environment, EPS believes that Douglas County can achieve a balanced state where detrimental trends are managed and positive fundamentals are capitalized upon. As indicated previously, approximately 80 percent of employed residents (laborforce) commute out for work and 65 percent of its workers (workforce) commute in. The current commuting patterns in Douglas County have economic, fiscal, workforce, and demographic impacts. A continuation of these patterns implies increased future transportation (especially fuel) costs for workers, increased maintenance costs for roads, potentially increased capital and infrastructure costs for roads, and the potential for foregone tax revenues from expenditure by households that do not live in the County.

EPS believes that local housing options could provide sufficient incentive to current in-commuters to take up County residency. EPS also believes that targeted economic development efforts to encourage attraction of higher-paying industries into the County could similarly mitigate commuting patterns and result in positive fiscal benefits for the County. Households with current in-commuters that become residents would be likely to spend a larger portion of their income in the County, as would the higher paid workforce if a portion of those jobs could be relocated in the County. This would not only save these households the cost of commuting, but translate potentially to increased capture of their expenditure and potentially result in spin-off employment (i.e. the multiplier effect).

Reduce In-Commuting

In 2009, as shown previously, there were approximately 87,100 jobs in the County, approximately 65 percent or 60,200 of which commuted in for work. If the County were able to incentivize approximately 30 percent of those commuters (approximately 18,000 jobs) to live locally, it could result in commuting cost savings for those households and potentially increased expenditure capture for the County.

Those 18,000 jobs would translate to approximately 12,700 households, applying the County jobs to household ratio. At 80 percent AMI, those households would have an aggregate income of an estimated $608 million. If the County can capture 40 to 60 percent of these households' expenditure on CES expenditure categories, such as food at home, housing maintenance, housekeeping supplies, furnishings, and apparel, which comprise approximately 18 percent of

annual income, that translates to approximately $42.5 million to $63.7 million in additional retail purchases in the County. This translates to an estimated $425,000 to $637,000 in additional sales tax revenues to the County per year.

Reduce Out-Commuting

Out of 124,900 employed residents in the County, approximately 80 percent or 98,500 commute out to their jobs. While it would largely be an economic development goal, if the County and its municipalities incentivized new business such that this number were reduced by 5 to 10 percent (4,925 to 9,850 jobs), it could increase the local capture of retail expenditures and sales tax revenues.

A portion of these workers' expenditure potential may already be captured within the County, but their daytime expenditures, however, are not. Because commuters often consolidate trips to and from work, daytime expenditures often include eating out, personal care products or services, gasoline, grocery stores, and other miscellaneous products and services. Using CES estimates by these various categories, a 50 percent capture of annual expenditure at this income level is approximately $3,100 and between $15.5 million and $30.9 million in aggregate annual spending. At the County's one percent sales tax rate, annual increased revenues would fall between $154,500 and $309,000.

No Action Alternative

On the other hand, while there are benefits to pursuing policies that expand the housing supply with a diverse range of costs and positive fundamentals in the County such as a strong laborforce and high household income compared to the Metro area, there are negative consequences to the current trajectory that are expected to continue if no action is taken. Alternatively, there are implications to the County in the event no action is taken. The following section provides a review of current trends that, if continued at the current rate without a diversification of the housing stock, will have significant long-term impacts. EPS provides examples and shows the degree of impact that may occur to the County's population and workforce.

1. Projection of Demographics

As the current population and workforce ages, there will be an impact to the available laborforce. This section will use DOLA projections by age cohort to identify laborforce expansion or contraction over time. The information illustrates that there are fewer households in the pipeline to replace the current households in larger, higher cost homes.

Over the next 20 years, Douglas County is anticipated to grow at an average rate of 2.3 percent per year, according to the Colorado Department of Labor and Employment. Growth rates by age category, however, vary widely, as shown in **Figure 20**. A few positive indications that Douglas County is not anticipated merely to be aging in place are the growth rates of persons under 35. On the other hand, the growth rates of persons 65 and over are more than three times as high as the County average. The population 65 to 74 is forecast to grow at an average of 7.4 percent, and the populations between 75 and 84, as well as 85 and older, are forecast to grow at 8.2 and 8.4 percent respectively.

While not alarming in itself, the growth rate of the population between the ages 45 to 54 is flat over time. Looking more closely at the trajectory of that age category, DOLA forecasts this population to peak in 2015 at approximately 53,500 persons, above the current 49,000. After that, this population is expected to flatten off to approximately 53,000, but decline sharply to 47,800.

The impact of shifting demographics will be felt most in the housing industry. Currently, trends in residential building indicate a strong market for product suited to a particular demographic moving up from entry-level housing. There are two concerns:

- That a portion of the aging population currently occupying large homes will want to downsize, but have few options in the County; and
- That the number of persons (i.e. households) aging behind them are not sufficient to replace and occupy the large inventory of this product type.

Figure 20
Forecast Growth Rates by Age
Douglas County Housing Nexus Study

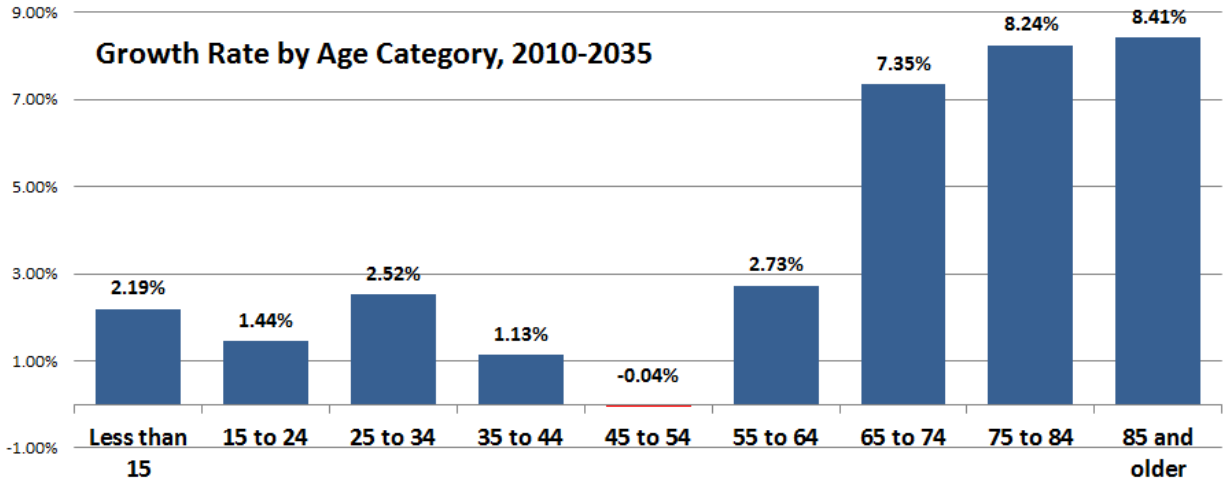
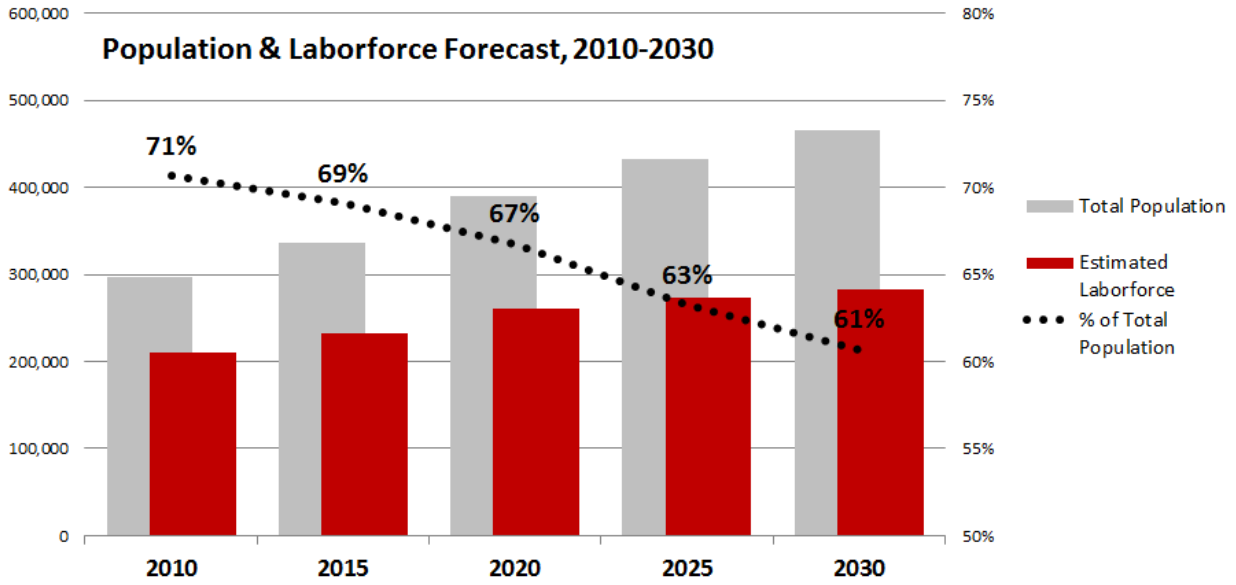


Figure 21 demonstrates how this demographic forecast affects the local laborforce. By 2030, participation rates are expected to fall from the current level of 71 percent to 61 percent, notwithstanding the increasing growth in total population. This ten percent drop equates to a loss of approximately 46,600 local resident employees in the laborforce. That is, if the laborforce participation rate remains constant over time, the number of people in the laborforce would be 46,600 higher.

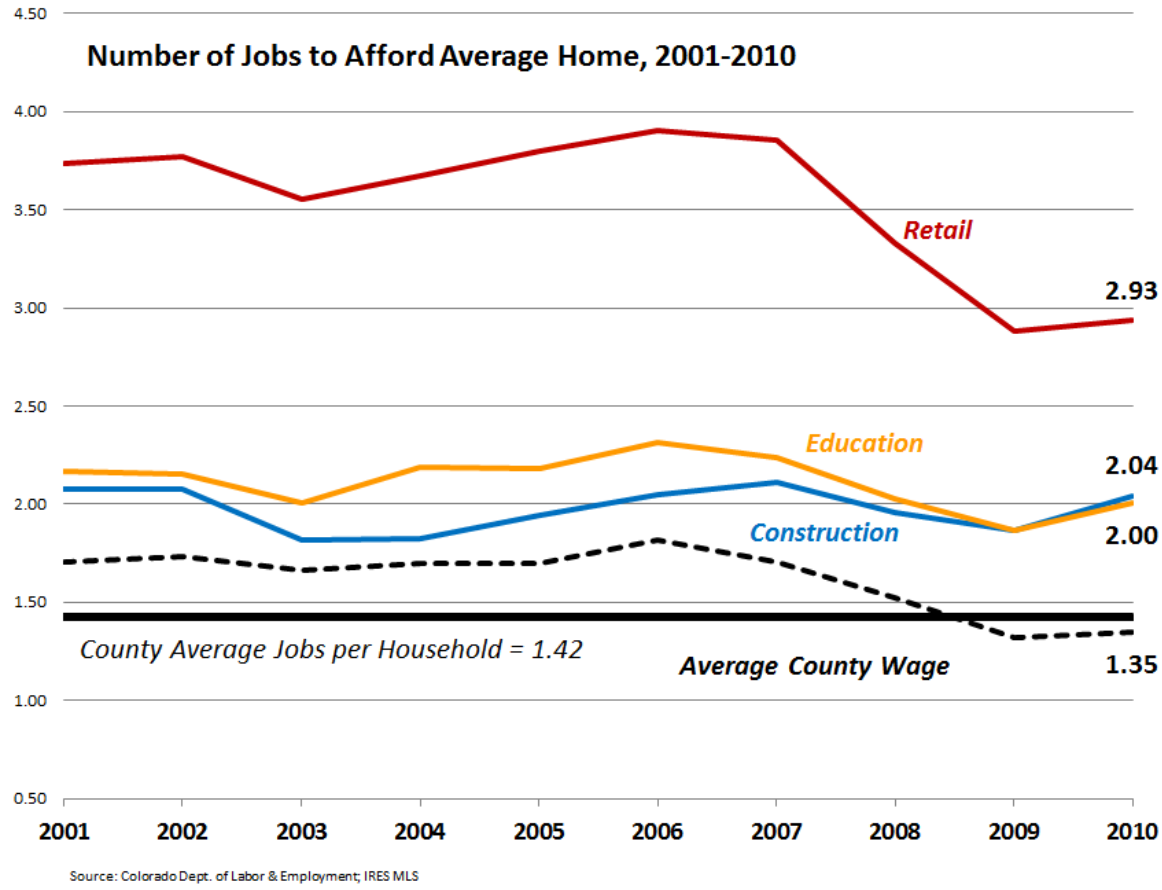
Figure 21
Laborforce Age Forecast, 2010-2035
Douglas County Housing Nexus Study



2. Affordability

To the extent that jobs in the retail, construction, and education industries are representative of typical wage earners in Douglas County, housing is unaffordable for these workers. As shown in **Figure 22,** the average wages in these industries are insufficient for households with the average number of jobs to afford the average-priced home. Trends from the past 10 years indicate that households with workers from these industries would often need more than two jobs per household. Even with the reset in housing prices that has occurred since 2007, the cost requires a minimum of 2.00 to 2.93 jobs per household, as compared to the county average of 1.42.

Figure 22
Number of Jobs to Afford Average Home, 2001-2010
Douglas County Housing Nexus Study



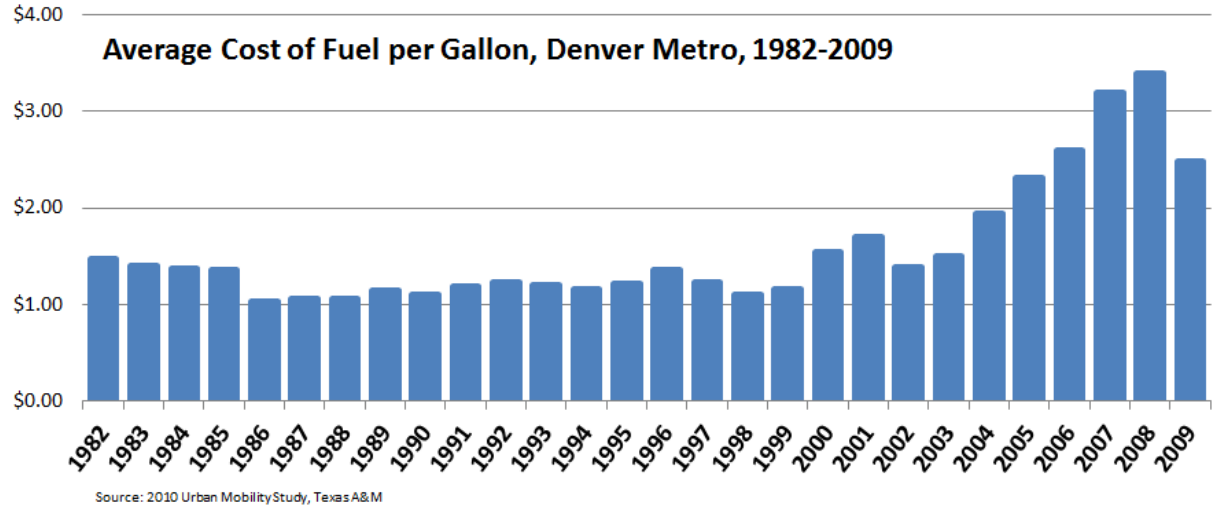
3. Commuting

This section discusses impacts from the continued trends of commuting. Using data from the U.S. Census LEHD, as presented previously, EPS projected both in- and out-commuting patterns. In addition, this section estimates the annual cost of commuting for the average commuter in fuel and ownership/operations expenses.

Cost of Commuting

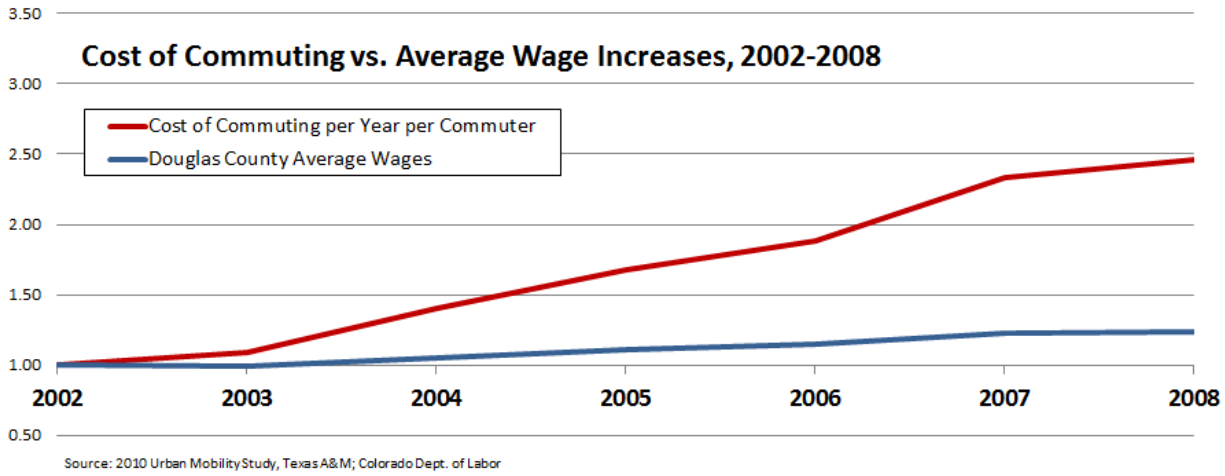
Over the last 30 years, the price of fuel has increased at an average of 2.0 percent per year. For much of this time, however, prices remained below $2.00 per gallon. In 2004, average prices per gallon in the State of Colorado passed $3.00 and peaked in 2008 at an average of nearly $3.50. Recently, gas prices spiked again near the $4.00 mark, but have since begun to come down. Still, fuel costs continue to play a larger role in the estimation of affordability, particularly for communities such as Douglas County where commuting is prevalent.

Figure 23
Average State Fuel Costs, 1982-2009
Douglas County Housing Nexus Study



Wages have not kept pace with fuel cost increases. Prior to 2002, the cost of commuting has risen generally with the cost of gasoline; however, from 2002 to 2008, the cost of commuting escalated much more quickly than average wages. **Figure 24** illustrates that commuting costs increased by a magnitude of nearly 2.5 over the seven years, while wages increased by a magnitude of approximately 0.25.

Figure 24
Commuting Costs vs. Wages
Douglas County Housing Nexus Study



There are two major components to the cost of commuting—fuel for commuting and maintenance and repairs associated with the mileage driven for commuting. **Table 8** shows estimates of average annual fuel costs associated with commuting to and from common locations (total operating costs are provided in the tables that follow). Excluding maintenance of vehicle or ownership costs, annual costs range between $1,500 and $2,300, depending on destination. This methodology estimates average annual expenditure using the round trip distance to each location, the miles driven per year, average fuel economy, and a recent average cost of fuel.

Table 8
Cost of Commuting Calculation
Douglas County Housing Nexus Study

		Calculation	Commuting Costs (to / from)			
			Denver	Tech Center	Aurora	Centennial
A	Roundtrip (RT) Commute Distance		58-mile RT	40-mile RT	58-mile RT	37-mile RT
B	Days Worked per Year (dpy)		250 dpy	250 dpy	250 dpy	250 dpy
C	Miles Travelled per Year (mpy)	A x B	14,500 mpy	10,000 mpy	14,500 mpy	9,250 mpy
D	Average Fuel Economy		24 mpg	24 mpg	24 mpg	24 mpg
E	Gallons Consumed per Year	C ÷ D	604 g	417 g	604 g	385 g
F	Average Fuel Cost		$3.77	$3.77	$3.77	$3.77
G	Total (Rounded to nearest $100)	E x F	**$2,300**	**$1,600**	**$2,300**	**$1,500**

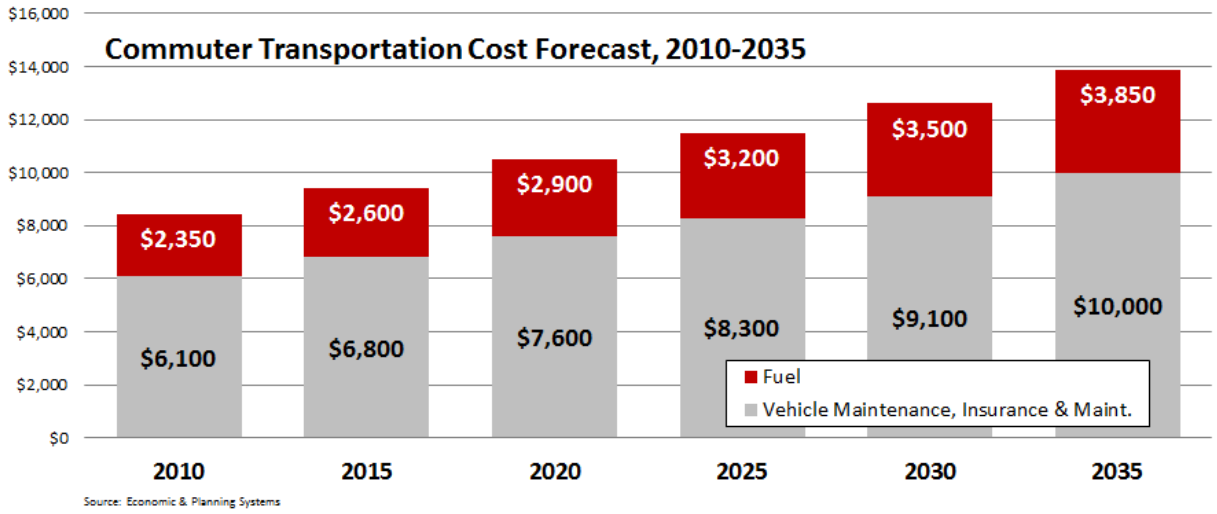
Source: Texas A & M 2010 Urban Mobility Study; AAA; EPA; Economic & Planning Systems
H:\20874-Douglas County Nexus Study\Data\[20874-TrafficImpacts-CDOT.xlsx]TABLE 2.1COMMUTE COST CALC

Overall, the average cost to commute (to and/or from Castle Rock, Denver, Aurora, the Tech Center, and Centennial) is estimated at $8,450 per year, as shown in **Figure 25**. Approximately $2,350 per year is spent currently on fuel alone, and approximately $6,100 spent on other vehicle-related expenses (defined as maintenance, insurance, ownership costs, etc.). As indicated previously, average fuel costs have escalated at 2.0 percent per year since 1982. Projected to 2035 using this rate, costs are anticipated to rise 64 percent to nearly $14,000 per year over the next 25 years.

Note that these costs are only those associated with mileage driven to and from work. Industry standards indicate that commuting to and from work accounts for 20 percent of all trips taken. This would indicate that the estimated costs shown below are approximately one fifth of total annual transportation costs.

Many residents do not quantify their annual commuting costs, relative to their housing choices. The purpose of this information is to quantify the cost to illuminate a trade-off that a typical employee traveling to Douglas County will make. To the extent housing options are made available locally and the commuting distances can be reduced, these dollars could be captured and spent within the County.

Figure 25
Projected Commuting Costs, 2010-2035
Douglas County Housing Nexus Study



4. Cost Burden

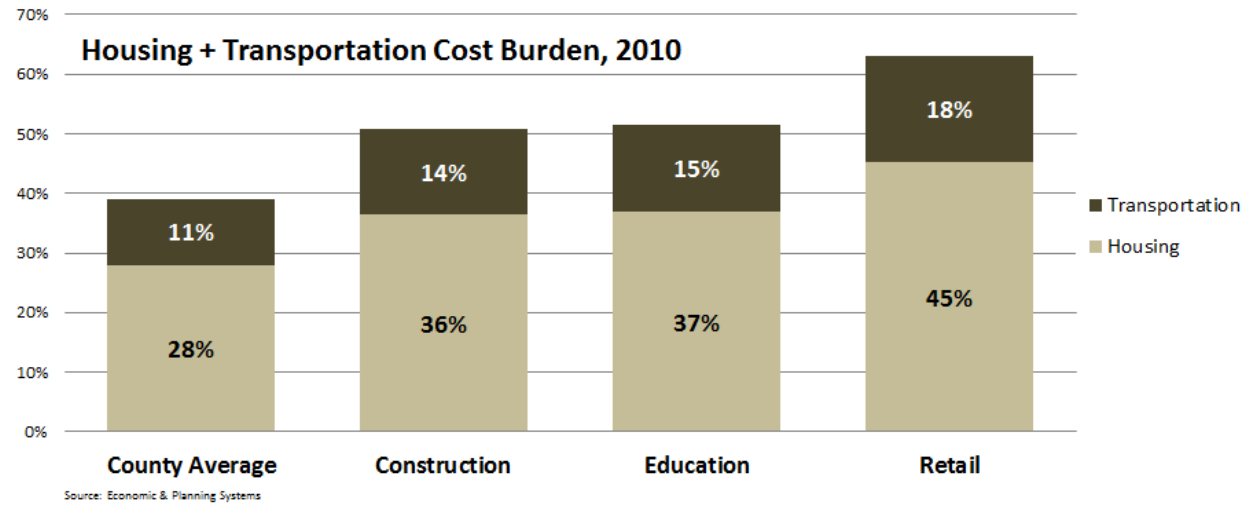
The Department of Housing and Urban Development (HUD) identifies housing as affordable when a household spends no more than 30 percent of its income on housing. When income spent on housing exceeds 30 percent, the household is considered cost-burdened. More recently, standard practice of the cost burden metric is evolving to include transportation costs as well as housing costs. Based on national averages of BLS data, average transportation costs are 12 percent, for a combined threshold of 42 percent. The cost-burden analysis that follows uses several statistics and factors that have been generated by research for this report, such as averages for:

- County wages (overall, and specific industries);
- Jobs per household;
- Sales price of home on standard lot;
- Cost of fuel for commuting; and
- Cost of vehicle maintenance, insurance, ownership, etc.

The average Douglas County household income, with 1.4 jobs earning the overall average County wage for 2010, would be approximately $76,400. The annual debt service for the average cost of housing (for all housing types) is estimated at approximately $22,280, or approximately 29.2 percent of that household's income. As estimated previously, the average cost of fuel for a commuter is $2,350 per year. Additionally, the cost of vehicle maintenance, insurance, and other ownership costs (only those associated with commuting, as the methodology is a per-mile cost basis) is approximately $6,100 per year. In total, transportation costs for commuting alone (i.e. not including other home-based trips or even trips, such as going to the grocery after work) are estimated to be $8,450 per year, or approximately 11 percent of the household's income. Therefore a household with average County-level salaries, commuting to and from work, spends approximately 40 percent of its income on housing-related costs.

As such, the average household in Douglas County falls two percentage points below the national standard of 42 percent for H + T costs. Typical wage earners identified in this study, however, exceed this threshold. For a household headed by a construction and education job-holder, their cost-burden is estimated to be 50 percent and 52 percent respectively, assuming they live outside of Douglas County. For a household headed by a retail job-holder, its level of cost burden is estimated at 63 percent, defined as severe cost-burden.

Figure 26
Housing and Transportation Cost Burden, 2010
Douglas County Housing Nexus Study

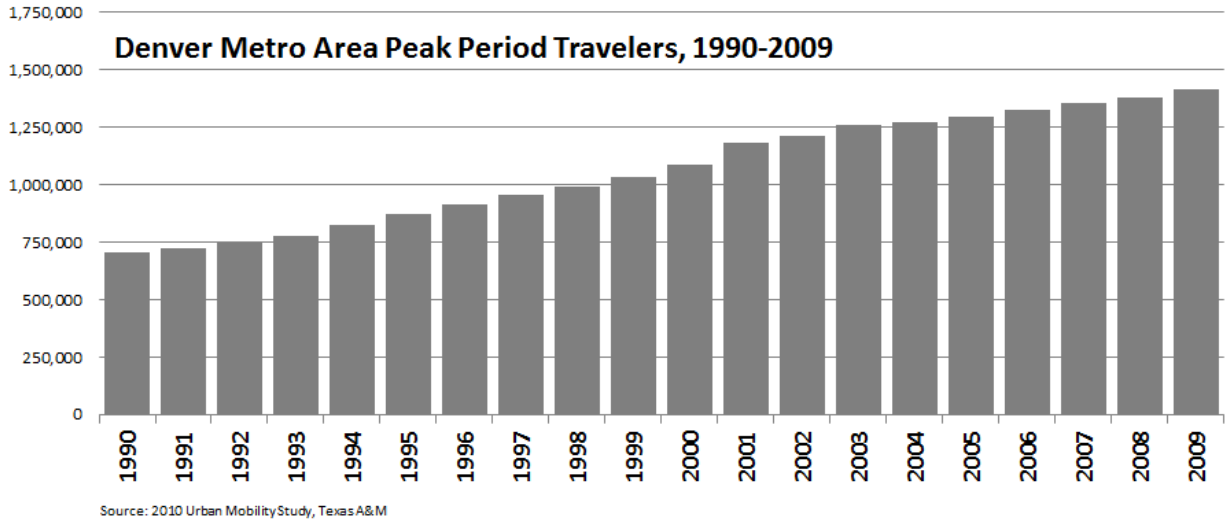


5. Aggregate Costs of Commuting

Commuting has direct household costs (as defined previously), costs to local government related to road construction and maintenance, and user costs related to time, particularly time lost due to congestion delays. While quantitative data on these factors exceeds the scope of this study, it is reasonable to recognize that a reduction in commuting would correlate to a reduction in state, county, and municipal expenditure on the transportation network. Given that road maintenance costs are a substantial portion of local government expenditure, a small percentage reduction would translate to a significant dollar amount.

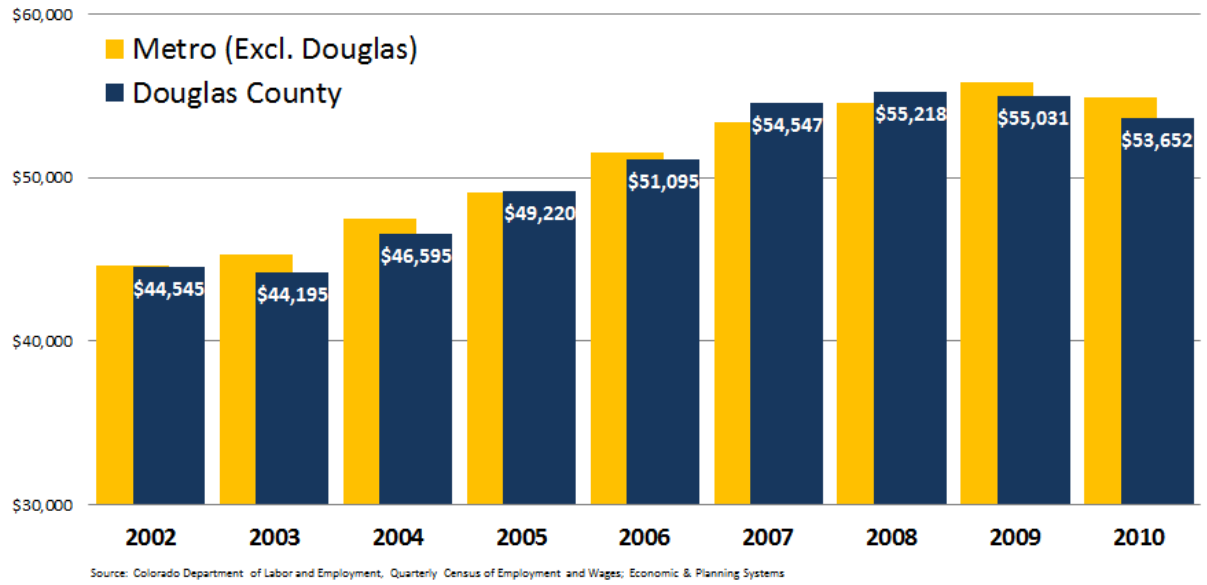
Commuting time spent in congestion is a factor evaluated by academic institutions. Peak period travel is represented below in **Figure 27,** and shows that from 1990 to 2000, the number of peak period travelers increased from approximately 706,000 to more than 1.4 million, an average increase of 3.7 percent per year. By contrast, the Metro Area's population grew by just 1.9 percent during the same period. The greater road utilization has costs associated with it that have, historically, been absorbed by governmental agencies responsible for the roads. As these costs increase, additional funding sources may be required. Alternatively, a reduction in usage may enable these agencies to shift resources to other civic needs.

Figure 27
Peak Period Travelers, 1990-2009
Douglas County Housing Nexus Study



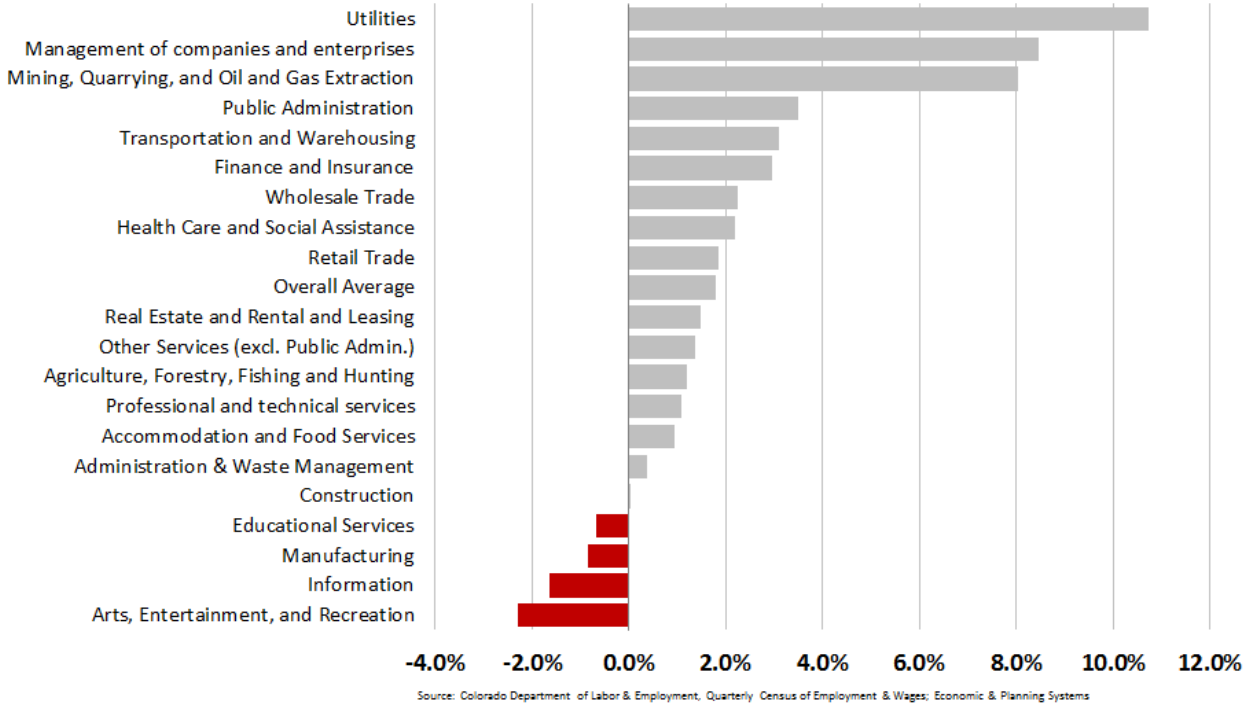
Appendix:
Supporting Information

Figure A1
County and Metro Wages, 2002-2010
Douglas County Housing Nexus Study



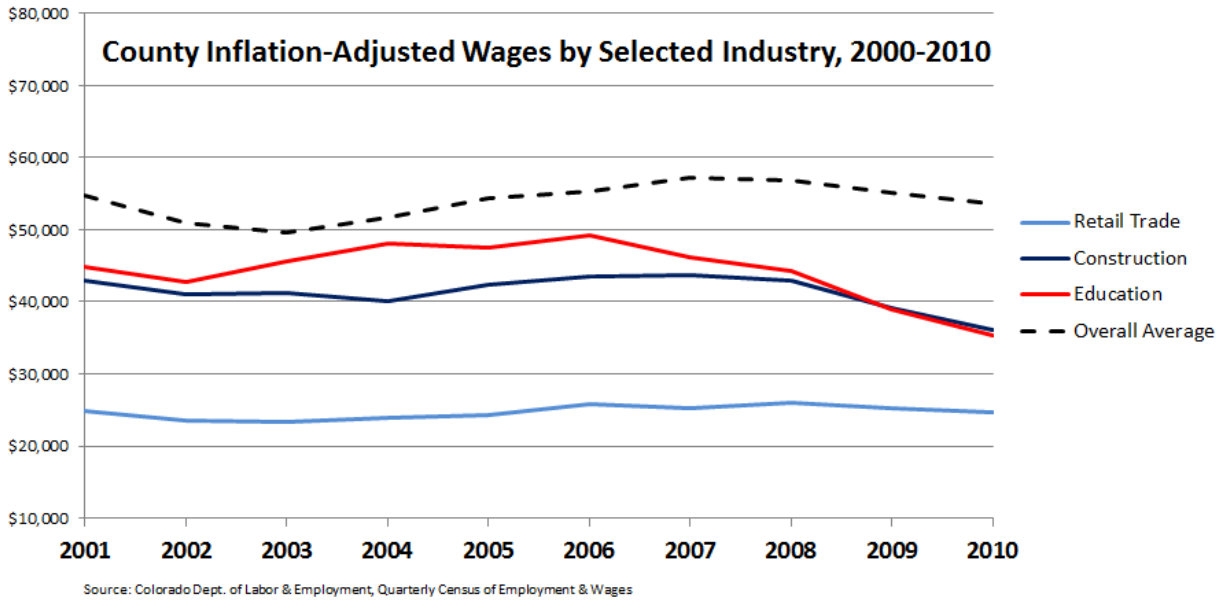
Source: Colorado Department of Labor and Employment, Quarterly Census of Employment and Wages; Economic & Planning Systems

Figure A2
Wage Change Unadjusted for Inflation, 2001-2010
Douglas County Housing Nexus Study



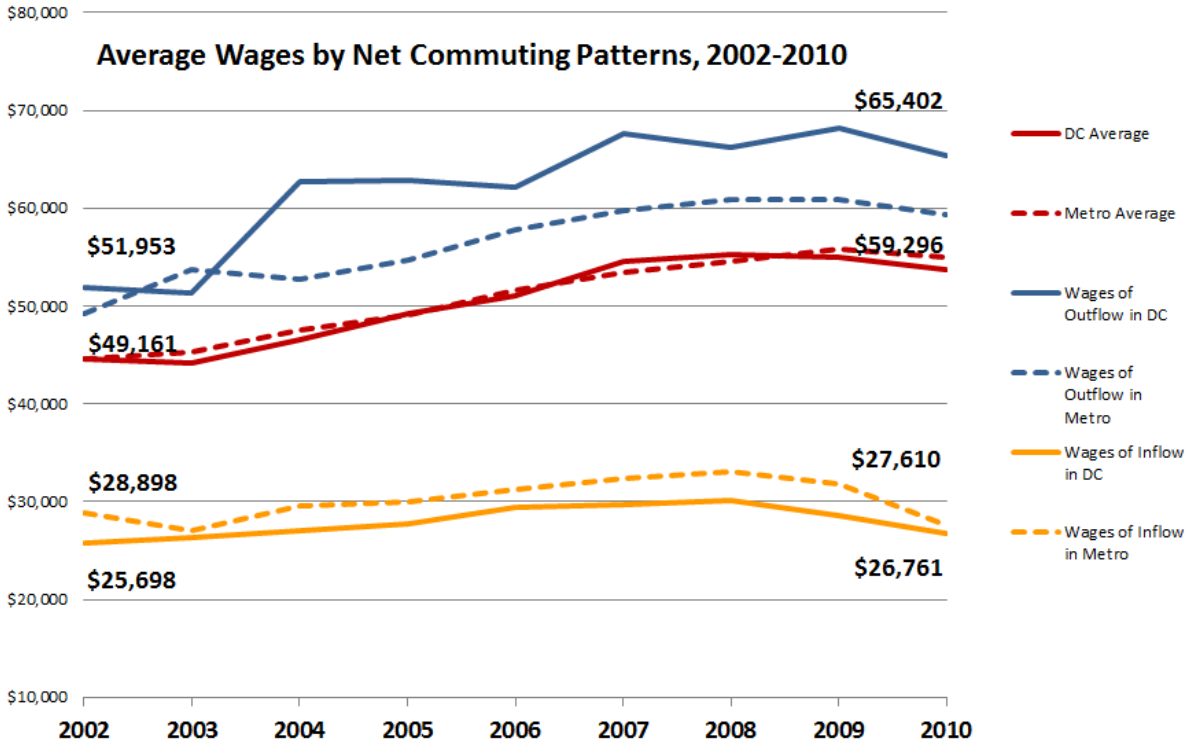
Source: Colorado Department of Labor & Employment, Quarterly Census of Employment & Wages; Economic & Planning Systems

Figure A3
Wage Level Comparisons
Douglas County Housing Nexus Study



Source: Colorado Dept. of Labor & Employment, Quarterly Census of Employment & Wages

Figure A4
Wages by Commuting Patterns
Douglas County Housing Nexus Study



Source: 2010 Urban Mobility Study, Texas A&M; Colorado Dept. of Labor

Table A1
Nine-County Metro Area Permits
Douglas County Housing Nexus Study

	2005	2006	2007	2008	2009	2005-2009 Total	2005-2009 Avg.
Municipality							
Aurora	3,225	3,584	1,733	1,653	1,559	11,754	2,351
Adams Co. (Unincorporated)	563	331	113	60	36	1,103	221
Arapahoe Co. (Unincorporated)	350	221	385	142	165	1,263	253
Boulder	203	293	442	509	188	1,635	327
Boulder Co. (Unincorporated)	104	127	84	73	38	426	85
Brighton	628	391	200	37	37	1,293	259
Broomfield	771	1,082	1,060	827	160	3,900	780
Castle Rock	1,544	1,121	603	309	261	3,838	768
Centennial	78	134	108	60	13	393	79
Clear Creek Co.	41	37	26	15	8	127	25
Commerce City	1,645	818	480	248	132	3,323	665
Denver	3,311	3,639	3,802	3,515	902	15,169	3,034
Douglas Co. (Unincorporated)	2,705	1,446	0	481	276	4,908	982
Elbert County	258	244	153	57	39	751	150
Erie	733	544	243	164	103	1,787	357
Gilpin Co.	23	26	30	18	7	104	21
Greenwood Village	88	406	355	24	14	887	177
Golden	20	18	42	12	78	170	34
Jefferson Co. (Unincorporated)	975	674	520	255	145	2,569	514
Lafayette	198	94	33	190	109	624	125
Lakewood	499	262	213	64	61	1,099	220
Littleton	11	38	5	7	282	343	69
Lonetree	148	73	34	0	31	286	57
Longmont	234	557	150	185	64	1,190	238
Louisville	68	9	92	36	17	222	44
Parker	1,110	602	235	142	43	2,132	426
Thornton	1,376	1,009	826	344	240	3,795	759
Westminster	315	302	281	132	48	1,078	216
Total	**21,224**	**18,082**	**12,248**	**9,559**	**5,056**	**66,169**	**13,234**
		-15%	-32%	-22%	-47%		
Nine-County Metro Area							
Douglas County	5,507	3,242	872	932	611	11,164	2,233
Remainder of Metro Area	15,717	14,840	11,376	8,627	4,445	55,005	11,001
Total	**21,224**	**18,082**	**12,248**	**9,559**	**5,056**	66,169	13,234
as % of Total							
Douglas County	26%	18%	7%	10%	12%	---	---
Remainder of Metro Area	74%	82%	93%	90%	88%	---	---

Source: Municipalities; U.S. Census C-40; Economic & Planning Systems

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Table A2
Expenditure-Based Demand from Average Home
Douglas County Housing Nexus Study

		Household Expenditure Estimate				Estimate of Retail Worker Wages					Estimate of Total Retail Households			2010	Affordable Households	
		Annual HH Expenditure by Category [1]			Expenditures	Gross	Annual Wages	Ratio:	# of Retail	Alt. 1: Avg.	Total 2007	Estimated	Estimated	Estimated		
	Allocation by Business Type	$ in 2009	as % of HH Income	Converted to 2007 $	per 100 Households	Receipts 2007 [2]	(in '000s) 2007 [2]	Gross Receipts to Wages	Workers on Payroll	Estimated Wages (2007)	Wages per X Households	Retail Workers	Households (1.42 jobs/hh)	Household Income [3]	Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$89,096	100.0%													
Expenditure on Retail Categories		$33,011	37.1%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$4,713	5.3%	$4,513											HH	AMI
Food and beverage stores	100%	$4,713		$4,513	$451,309	$691,770	$66,574	10.4	2,837	$23,466	$43,433	2	1	$47,240	1	79%
Food away from home		$3,646	4.1%	$3,491												
Food services and drinking places	100%	$3,646		$3,491	$349,135	$408,717	$130,204	3.1	9,546	$13,640	$111,223	8	6	$36,978	6	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$1,400	1.6%	$1,341												
Personal and laundry services	45%	$630		$603	$60,328	$69,224	$22,648	3.1	1,269	$17,847	$19,737	1	1	$41,372	1	69%
Building material and garden equipment and supplies dealers	45%	$630		$603	$60,328	$345,607	$38,991	8.9	1,290	$30,226	$6,806	0	0	$54,299	0	91%
Real estate	10%	$140		$134	$13,406	$200,107	$36,775	5.4	1,058	$34,759	$2,464	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$179	0.2%	$171												
Nonstore retailers	100%	$179		$171	$17,141	$69,218	$7,873	8.8	239	$32,941	$1,950	0	0	$57,135	0	95%
Water and Other Public Services		$626	0.7%	$599												
Waste management and remediation services	100%	$626		$599	$59,945	$13,731	$3,485	3.9	75	$46,467	$15,214	0	0	$71,259	0	119%
Household Operations, Personal Services		$1,309	1.5%	$1,253												
Nursing and residential care facilities	40%	$524		$501	$50,139.06	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$785		$752	$75,209	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$824	0.9%	$789												
Building material and garden equipment and supplies dealers	10%	$82		$79	$7,890	$345,607	$38,991	8.9	1,290	$30,226	$890	0	0	$54,299	0	91%
Food and beverage stores	35%	$288		$276	$27,617	$691,770	$66,574	10.4	2,837	$23,466	$2,658	0	0	$47,240	0	79%
General merchandise stores	35%	$288		$276	$27,617	$817,331	$75,149	10.9	3,415	$22,006	$2,539	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$165		$158	$15,781	$79,326	$10,648	7.4	686	$15,522	$2,118	0	0	$38,943	0	65%
Household Furnishings and Equipment		$2,247	2.5%	$2,152												
Furniture and home furnishings stores	40%	$899		$861	$86,068	$140,027	$15,067	9.3	725	$20,782	$9,261	0	0	$44,437	0	74%
Electronics and appliance stores	40%	$899		$861	$86,068	$182,271	$14,421	12.6	597	$24,156	$6,810	0	0	$47,960	0	80%
General merchandise stores	10%	$225		$215	$21,517	$817,331	$75,149	10.9	3,415	$22,006	$1,978	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$225		$215	$21,517	$79,326	$10,648	7.4	686	$15,522	$2,888	0	0	$38,943	0	65%
Apparel and Services		$2,388	2.7%	$2,287												
Clothing and clothing accessories stores	40%	$955		$915	$91,468	$383,551	$48,275	7.9	2,567	$18,806	$11,513	1	0	$42,373	0	71%
General merchandise stores	40%	$955		$915	$91,468	$817,331	$75,149	10.9	3,415	$22,006	$8,410	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$239		$229	$22,867	$79,326	$10,648	7.4	686	$15,522	$3,069	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$119		$114	$11,434	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$119		$114	$11,434	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$3,386	3.8%	$3,242												
Motor vehicle and parts dealers	100%	$3,386		$3,242	$324,238	$511,842	$48,732	10.5	1,112	$43,824	$30,870	1	0	$68,499	0	114%
Gasoline and Motor Oil		$2,669	3.0%	$2,556												
Gasoline stations	100%	$2,669		$2,556	$255,579	$293,681	$6,525	45.0	344	$18,968	$5,678	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$929	1.0%	$890												
Automotive repair and maintenance	100%	$929		$890	$88,959	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$1,168	1.3%	$1,118												
Ambulatory health care services	40%	$467		$447	$44,738	$406,016	$159,965	2.5	3,237	$49,418	$17,626	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$350		$336	$33,554	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$350		$336	$33,554	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$573	0.6%	$549												
Health and personal care stores	100%	$573		$549	$54,870	$155,483	$19,406	8.0	789	$24,596	$6,848	0	0	$48,419	0	81%
Medical Supplies		$153	0.2%	$147												
Health and personal care stores	100%	$153		$147	$14,651	$155,483	$19,406	8.0	789	$24,596	$1,829	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$809	0.9%	$775												
Arts, entertainment, and recreation	100%	$809		$775	$77,468	$120,643	$34,582	3.5	1,885	$18,346	$22,206	1	1	$41,893	1	70%
Audio and Visual Equipment and Services		$1,289	1.4%	$1,234												
Electronics and appliance stores	100%	$1,289		$1,234	$123,432	$182,271	$14,421	12.6	597	$24,156	$9,766	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$882	1.0%	$845												
Sporting goods, hobby, book, and music stores	50%	$441		$422	$42,229	$95,343	$10,220	9.3	745	$13,718	$4,527	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$441		$422	$42,229	$79,326	$10,648	7.4	686	$15,522	$5,668	0	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$645	0.7%	$618												
Sporting goods, hobby, book, and music stores	100%	$645		$618	$61,764	$95,343	$10,220	9.3	745	$13,718	$6,621	0	0	$37,060	0	62%
Personal Care Products and Services		$782	0.9%	$749												
Personal care services	100%	$782		$749	$74,883	$38,042	$14,211	2.7	837	$16,978	$27,973	2	1	$40,465	1	68%
Reading		$130	0.1%	$124												
Sporting goods, hobby, book, and music stores	100%	$130		$124	$12,449	$95,343	$10,220	9.3	745	$13,718	$1,334	0	0	$37,060	0	62%
Education		$1,259	1.4%	$1,206												
Educational services	100%	$1,259		$1,206	$120,560	$46,796	$15,017	3.1	732	$20,515	$38,688	2	1	$44,158	1	74%
Miscellaneous		$1,005	1.1%	$962												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$352		$337	$33,683	$45,446	$18,120	2.5	456	$39,737	$13,430	0	0	$64,231	0	107%
Activities related to real estate	35%	$352		$337	$33,683	$55,939	$12,504	4.5	371	$33,704	$7,529	0	0	$57,930	0	97%
Special food services	30%	$302		$289	$28,871	$12,228	$4,322	2.8	184	$23,489	$10,205	0	0	$47,264	0	79%
Totals per 100 Households		**33,011**	**37.1%**	$31,611	**3,161,078**	**8,620,796**	**1,155,788**	7.5	**50,887**	**824,366**	**$421,477**	**24**	**17**	**$43,328**		

[1] From the BLS Consumer Expenditure Survey
[2] From U.S. Census Economic Census (Retail Trade).
[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.
Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems
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Table A3
Expenditure-Based Demand from Standard Lot Home
Douglas County Housing Nexus Study

	Allocation by Business Type	Household Expenditure Estimate: Annual HH Expenditure by Category [1] $ in 2009	as % of HH Income	Converted to 2007 $	Expenditures per 100 Households	Estimate of Retail Worker Wages: Gross Receipts 2007 [2]	Annual Wages (in '000s) 2007 [2]	Ratio: Gross Receipts to Wages	# of Retail Workers on Payroll	Alt. 1: Avg. Estimated Wages (2007)	Estimate of Total Retail Households: Total 2007 Wages per X Households	Estimated Retail Workers	Estimated Households (1.42 jobs/hh)	2010 Estimated Household Income [3]	Affordable Households: Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$74,594	100.0%													
Expenditure on Retail Categories		$29,696	39.8%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$4,471	6.0%	$4,281											HH	AMI
Food and beverage stores	100%	$4,471		$4,281	$428,135	$691,770	$66,574	10.4	2,837	$23,466	$41,203	2	1	$47,240	1	79%
Food away from home		$3,347	4.5%	$3,205												
Food services and drinking places	100%	$3,347		$3,205	$320,503	$408,717	$130,204	3.1	9,546	$13,640	$102,102	7	5	$36,978	5	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$1,507	2.0%	$1,443												
Personal and laundry services	45%	$678		$649	$64,939	$69,224	$22,648	3.1	1,269	$17,847	$21,246	1	1	$41,372	1	69%
Building material and garden equipment and supplies dealers	45%	$678		$649	$64,939	$345,607	$38,991	8.9	1,290	$30,226	$7,326	0	0	$54,299	0	91%
Real estate	10%	$151		$144	$14,431	$200,107	$36,775	5.4	1,058	$34,759	$2,652	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$154	0.2%	$147												
Nonstore retailers	100%	$154		$147	$14,747	$69,218	$7,873	8.8	239	$32,941	$1,677	0	0	$57,135	0	95%
Water and Other Public Services		$548	0.7%	$525												
Waste management and remediation services	100%	$548		$525	$52,476	$13,731	$3,485	3.9	75	$46,467	$13,319	0	0	$71,259	0	119%
Household Operations, Personal Services		$1,054	1.4%	$1,009												
Nursing and residential care facilities	40%	$422		$404	$40,371.71	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$632		$606	$60,558	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$776	1.0%	$743												
Building material and garden equipment and supplies dealers	10%	$78		$74	$7,431	$345,607	$38,991	8.9	1,290	$30,226	$838	0	0	$54,299	0	91%
Food and beverage stores	35%	$272		$260	$26,008	$691,770	$66,574	10.4	2,837	$23,466	$2,503	0	0	$47,240	0	79%
General merchandise stores	35%	$272		$260	$26,008	$817,331	$75,149	10.9	3,415	$22,006	$2,391	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$155		$149	$14,862	$79,326	$10,648	7.4	686	$15,522	$1,995	0	0	$38,943	0	65%
Household Furnishings and Equipment		$1,716	2.3%	$1,643												
Furniture and home furnishings stores	40%	$686		$657	$65,729	$140,027	$15,067	9.3	725	$20,782	$7,072	0	0	$44,437	0	74%
Electronics and appliance stores	40%	$686		$657	$65,729	$182,271	$14,421	12.6	597	$24,156	$5,200	0	0	$47,960	0	80%
General merchandise stores	10%	$172		$164	$16,432	$817,331	$75,149	10.9	3,415	$22,006	$1,511	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$172		$164	$16,432	$79,326	$10,648	7.4	686	$15,522	$2,206	0	0	$38,943	0	65%
Apparel and Services		$1,795	2.4%	$1,719												
Clothing and clothing accessories stores	40%	$718		$688	$68,754	$383,551	$48,275	7.9	2,567	$18,806	$8,654	0	0	$42,373	0	71%
General merchandise stores	40%	$718		$688	$68,754	$817,331	$75,149	10.9	3,415	$22,006	$6,322	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$180		$172	$17,189	$79,326	$10,648	7.4	686	$15,522	$2,307	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$90		$86	$8,594	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$90		$86	$8,594	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$3,410	4.6%	$3,265												
Motor vehicle and parts dealers	100%	$3,410		$3,265	$326,536	$511,842	$48,732	10.5	1,112	$43,824	$31,089	1	0	$68,499	0	114%
Gasoline and Motor Oil		$2,470	3.3%	$2,365												
Gasoline stations	100%	$2,470		$2,365	$236,523	$293,681	$6,525	45.0	344	$18,968	$5,255	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$890	1.2%	$852												
Automotive repair and maintenance	100%	$890		$852	$85,225	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$974	1.3%	$933												
Ambulatory health care services	40%	$390		$373	$37,307	$406,016	$159,965	2.5	3,237	$49,418	$14,699	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$292		$280	$27,981	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$292		$280	$27,981	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$555	0.7%	$531												
Health and personal care stores	100%	$555		$531	$53,146	$155,483	$19,406	8.0	789	$24,596	$6,633	0	0	$48,419	0	81%
Medical Supplies		$132	0.2%	$126												
Health and personal care stores	100%	$132		$126	$12,640	$155,483	$19,406	8.0	789	$24,596	$1,578	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$672	0.9%	$643												
Arts, entertainment, and recreation	100%	$672		$643	$64,350	$120,643	$34,582	3.5	1,885	$18,346	$18,446	1	1	$41,893	1	70%
Audio and Visual Equipment and Services		$1,096	1.5%	$1,050												
Electronics and appliance stores	100%	$1,096		$1,050	$104,951	$182,271	$14,421	12.6	597	$24,156	$8,304	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$857	1.1%	$821												
Sporting goods, hobby, book, and music stores	50%	$429		$410	$41,032	$95,343	$10,220	9.3	745	$13,718	$4,398	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$429		$410	$41,032	$79,326	$10,648	7.4	686	$15,522	$5,508	0	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$739	1.0%	$708												
Sporting goods, hobby, book, and music stores	100%	$739		$708	$70,765	$95,343	$10,220	9.3	745	$13,718	$7,585	1	0	$37,060	0	62%
Personal Care Products and Services		$653	0.9%	$625												
Personal care services	100%	$653		$625	$62,530	$38,042	$14,211	2.7	837	$16,978	$23,359	1	1	$40,465	1	68%
Reading		$118	0.2%	$113												
Sporting goods, hobby, book, and music stores	100%	$118		$113	$11,299	$95,343	$10,220	9.3	745	$13,718	$1,211	0	0	$37,060	0	62%
Education		$783	1.0%	$750												
Educational services	100%	$783		$750	$74,979	$46,796	$15,017	3.1	732	$20,515	$24,061	1	1	$44,158	1	74%
Miscellaneous		$979	1.3%	$937												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$343		$328	$32,812	$45,446	$18,120	2.5	456	$39,737	$13,082	0	0	$64,231	0	107%
Activities related to real estate	35%	$343		$328	$32,812	$55,939	$12,504	4.5	371	$33,704	$7,334	0	0	$57,930	0	97%
Special food services	30%	$294		$281	$28,124	$12,228	$4,322	2.8	184	$23,489	$9,941	0	0	$47,264	0	79%
Totals per 100 Households		**29,696**	**39.8%**	$28,436	**2,843,639**	**8,620,796**	**1,155,788**	7.5	**50,887**	**824,366**	**413,007**	**21**	**15**	**$43,346**		

[1] From the BLS Consumer Expenditure Survey
[2] From U.S. Census Economic Census (Retail Trade)
[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.
Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems
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Table A4
Expenditure-Based Demand from Large Lot Home
Douglas County Housing Nexus Study

	Allocation by Business Type	Household Expenditure Estimate: Annual HH Expenditure by Category [1] $ in 2009	as % of HH Income	Converted to 2007 $	Expenditures per 100 Households	Estimate of Retail Worker Wages: Gross Receipts 2007 [2]	Annual Wages (in '000s) 2007 [2]	Ratio: Gross Receipts to Wages	# of Retail Workers on Payroll	Alt. 1: Avg. Estimated Wages (2007)	Estimate of Total Retail Households: Total 2007 Wages per X Households	Estimated Retail Workers	Estimated Households (1.42 jobs/hh)	2010 Estimated Household Income [3]	Affordable Households: Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$108,564	100.0%													
Expenditure on Retail Categories		$39,771	36.6%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$5,319	4.9%												HH	AMI
Food and beverage stores	100%	$5,319		$5,093	$509,338.53	$691,770	$66,574	10.4	2,837	$23,466	$49,017	2	1	$47,240	1	79%
Food away from home		$4,303	4.0%	$4,120												
Food services and drinking places	100%	$4,303		$4,120	$412,048.07	$408,717	$130,204	3.1	9,546	$13,640	$131,265	10	7	$36,978	7	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$1,779	1.6%	$1,704												
Personal and laundry services	45%	$801		$767	$76,659	$69,224	$22,648	3.1	1,269	$17,847	$25,081	1	1	$41,372	1	69%
Building material and garden equipment and supplies dealers	45%	$801		$767	$76,659	$345,607	$38,991	8.9	1,290	$30,226	$8,649	0	0	$54,299	0	91%
Real estate	10%	$178		$170	$17,035	$200,107	$36,775	5.4	1,058	$34,759	$3,131	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$195	0.2%	$187												
Nonstore retailers	100%	$195		$187	$18,673	$69,218	$7,873	8.8	239	$32,941	$2,124	0	0	$57,135	0	95%
Water and Other Public Services		$657	0.6%	$629												
Waste management and remediation services	100%	$657		$629	$62,913	$13,731	$3,485	3.9	75	$46,467	$15,968	0	0	$71,259	0	119%
Household Operations, Personal Services		$1,587	1.5%	$1,520												
Nursing and residential care facilities	40%	$635		$608	$60,787.39	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$952		$912	$91,181	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$944	0.9%	$904												
Building material and garden equipment and supplies dealers	10%	$94		$90	$9,040	$345,607	$38,991	8.9	1,290	$30,226	$1,020	0	0	$54,299	0	91%
Food and beverage stores	35%	$330		$316	$31,639	$691,770	$66,574	10.4	2,837	$23,466	$3,045	0	0	$47,240	0	79%
General merchandise stores	35%	$330		$316	$31,639	$817,331	$75,149	10.9	3,415	$22,006	$2,909	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$189		$181	$18,079	$79,326	$10,648	7.4	686	$15,522	$2,427	0	0	$38,943	0	65%
Household Furnishings and Equipment		$2,567	2.4%	$2,458												
Furniture and home furnishings stores	40%	$1,027		$983	$98,325	$140,027	$15,067	9.3	725	$20,782	$10,580	1	0	$44,437	0	74%
Electronics and appliance stores	40%	$1,027		$983	$98,325	$182,271	$14,421	12.6	597	$24,156	$7,779	0	0	$47,960	0	80%
General merchandise stores	10%	$257		$246	$24,581	$817,331	$75,149	10.9	3,415	$22,006	$2,260	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$257		$246	$24,581	$79,326	$10,648	7.4	686	$15,522	$3,300	0	0	$38,943	0	65%
Apparel and Services		$2,595	2.4%	$2,485												
Clothing and clothing accessories stores	40%	$1,038		$994	$99,397	$383,551	$48,275	7.9	2,567	$18,806	$12,510	1	0	$42,373	0	71%
General merchandise stores	40%	$1,038		$994	$99,397	$817,331	$75,149	10.9	3,415	$22,006	$9,139	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$260		$248	$24,849	$79,326	$10,648	7.4	686	$15,522	$3,336	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$130		$124	$12,425	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$130		$124	$12,425	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$4,800	4.4%	$4,596												
Motor vehicle and parts dealers	100%	$4,800		$4,596	$459,640	$511,842	$48,732	10.5	1,112	$43,824	$43,762	1	1	$68,499	1	114%
Gasoline and Motor Oil		$2,942	2.7%	$2,817												
Gasoline stations	100%	$2,942		$2,817	$281,721	$293,681	$6,525	45.0	344	$18,968	$6,259	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$1,202	1.1%	$1,151												
Automotive repair and maintenance	100%	$1,202		$1,151	$115,102	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$1,152	1.1%	$1,103												
Ambulatory health care services	40%	$461		$441	$44,125	$406,016	$159,965	2.5	3,237	$49,418	$17,385	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$346		$331	$33,094	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$346		$331	$33,094	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$632	0.6%	$605												
Health and personal care stores	100%	$632		$605	$60,519	$155,483	$19,406	8.0	789	$24,596	$7,553	0	0	$48,419	0	81%
Medical Supplies		$192	0.2%	$184												
Health and personal care stores	100%	$192		$184	$18,386	$155,483	$19,406	8.0	789	$24,596	$2,295	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$1,282	1.2%	$1,228												
Arts, entertainment, and recreation	100%	$1,282		$1,228	$122,762	$120,643	$34,582	3.5	1,885	$18,346	$35,189	2	1	$41,893	1	70%
Audio and Visual Equipment and Services		$1,317	1.2%	$1,261												
Electronics and appliance stores	100%	$1,317		$1,261	$126,114	$182,271	$14,421	12.6	597	$24,156	$9,978	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$1,262	1.2%	$1,208												
Sporting goods, hobby, book, and music stores	50%	$631		$604	$60,424	$95,343	$10,220	9.3	745	$13,718	$6,477	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$631		$604	$60,424	$79,326	$10,648	7.4	686	$15,522	$8,111	1	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$755	0.7%	$723												
Sporting goods, hobby, book, and music stores	100%	$755		$723	$72,298	$95,343	$10,220	9.3	745	$13,718	$7,750	1	0	$37,060	0	62%
Personal Care Products and Services		$960	0.9%	$919												
Personal care services	100%	$960		$919	$91,928	$38,042	$14,211	2.7	837	$16,978	$34,341	2	1	$40,465	1	68%
Reading		$174	0.2%	$167												
Sporting goods, hobby, book, and music stores	100%	$174		$167	$16,662	$95,343	$10,220	9.3	745	$13,718	$1,786	0	0	$37,060	0	62%
Education		$1,828	1.7%	$1,750												
Educational services	100%	$1,828		$1,750	$175,046	$46,796	$15,017	3.1	732	$20,515	$56,173	3	2	$44,158	2	74%
Miscellaneous		$1,327	1.2%	$1,271												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$464		$445	$44,475	$45,446	$18,120	2.5	456	$39,737	$17,733	0	0	$64,231	0	107%
Activities related to real estate	35%	$464		$445	$44,475	$55,939	$12,504	4.5	371	$33,704	$9,941	0	0	$57,930	0	97%
Special food services	30%	$398		$381	$38,121	$12,228	$4,322	2.8	184	$23,489	$13,474	1	0	$47,264	0	79%
Totals per 100 Households		39771	**36.6%**									**29**	**20**	**$43,342**		

[1] From the BLS Consumer Expenditure Survey

[2] From U.S. Census Economic Census (Retail Trade)

[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.

Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems

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Table A5
Expenditure-Based Demand from Estate Lot Home
Douglas County Housing Nexus Study

		Household Expenditure Estimate				Estimate of Retail Worker Wages					Estimate of Total Retail Households			2010	Affordable Households	
		Annual HH Expenditure by Category [1]			Expenditures	Gross	Annual Wages	Ratio:	# of Retail	Alt. 1: Avg.	Total 2007	Estimated	Estimated	Estimated		
	Allocation by Business Type	$ in 2009	as % of HH Income	Converted to 2007 $	per 100 Households	Receipts 2007 [2]	(in '000s) 2007 [2]	Gross Receipts to Wages	Workers on Payroll	Estimated Wages (2007)	Wages per X Households	Retail Workers	Households (1.42 jobs/hh)	Household Income [3]	Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$236,246	100.0%													
Expenditure on Retail Categories		$61,380	26.0%													
Expenditure Category / Business Type															*Below is DSUM array.*	
Food at home		$6,529	2.8%												HH	AMI
Food and beverage stores	100%	$6,529		$6,252	$625,206	$691,770	$66,574	10.4	2,837	$23,466	$60,168	3	2	$47,240	2	79%
Food away from home		$6,704	2.8%	$6,420												
Food services and drinking places	100%	$6,704		$6,420	$641,964	$408,717	$130,204	3.1	9,546	$13,640	$204,509	15	11	$36,978	11	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$2,789	1.2%	$2,671												
Personal and laundry services	45%	$1,255		$1,202	$120,181	$69,224	$22,648	3.1	1,269	$17,847	$39,320	2	2	$41,372	2	69%
Building material and garden equipment and supplies dealers	45%	$1,255		$1,202	$120,181	$345,607	$38,991	8.9	1,290	$30,226	$13,559	0	0	$54,299	0	91%
Real estate	10%	$279		$267	$26,707	$200,107	$36,775	5.4	1,058	$34,759	$4,908	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$282	0.1%	$270												
Nonstore retailers	100%	$282		$270	$27,004	$69,218	$7,873	8.8	239	$32,941	$3,071	0	0	$57,135	0	95%
Water and Other Public Services		$838	0.4%	$802												
Waste management and remediation services	100%	$838		$802	$80,245	$13,731	$3,485	3.9	75	$46,467	$20,367	0	0	$71,259	0	119%
Household Operations, Personal Services		$3,330	1.4%	$3,189												
Nursing and residential care facilities	40%	$1,332		$1,276	$127,550.09	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$1,998		$1,913	$191,325	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$1,526	0.6%	$1,461												
Building material and garden equipment and supplies dealers	10%	$153		$146	$14,613	$345,607	$38,991	8.9	1,290	$30,226	$1,649	0	0	$54,299	0	91%
Food and beverage stores	35%	$534		$511	$51,145	$691,770	$66,574	10.4	2,837	$23,466	$4,922	0	0	$47,240	0	79%
General merchandise stores	35%	$534		$511	$51,145	$817,331	$75,149	10.9	3,415	$22,006	$4,702	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$305		$292	$29,225	$79,326	$10,648	7.4	686	$15,522	$3,923	0	0	$38,943	0	65%
Household Furnishings and Equipment		$4,190	1.8%	$4,012												
Furniture and home furnishings stores	40%	$1,676		$1,605	$160,491	$140,027	$15,067	9.3	725	$20,782	$17,269	1	1	$44,437	1	74%
Electronics and appliance stores	40%	$1,676		$1,605	$160,491	$182,271	$14,421	12.6	597	$24,156	$12,698	1	0	$47,960	0	80%
General merchandise stores	10%	$419		$401	$40,123	$817,331	$75,149	10.9	3,415	$22,006	$3,689	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$419		$401	$40,123	$79,326	$10,648	7.4	686	$15,522	$5,386	0	0	$38,943	0	65%
Apparel and Services		$4,508	1.9%	$4,317												
Clothing and clothing accessories stores	40%	$1,803		$1,727	$172,671	$383,551	$48,275	7.9	2,567	$18,806	$21,733	1	1	$42,373	1	71%
General merchandise stores	40%	$1,803		$1,727	$172,671	$817,331	$75,149	10.9	3,415	$22,006	$15,876	1	1	$45,714	1	76%
Miscellaneous store retailers	10%	$451		$432	$43,168	$79,326	$10,648	7.4	686	$15,522	$5,794	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$225		$216	$21,584	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$225		$216	$21,584	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$7,506	3.2%	$7,188												
Motor vehicle and parts dealers	100%	$7,506		$7,188	$718,762	$511,842	$48,732	10.5	1,112	$43,824	$68,433	2	1	$68,499	1	114%
Gasoline and Motor Oil		$3,257	1.4%	$3,119												
Gasoline stations	100%	$3,257		$3,119	$311,885	$293,681	$6,525	45.0	344	$18,968	$6,929	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$1,515	0.6%	$1,451												
Automotive repair and maintenance	100%	$1,515		$1,451	$145,074	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$1,552	0.7%	$1,486												
Ambulatory health care services	40%	$621		$594	$59,447	$406,016	$159,965	2.5	3,237	$49,418	$23,421	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$466		$446	$44,585	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$466		$446	$44,585	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$715	0.3%	$685												
Health and personal care stores	100%	$715		$685	$68,467	$155,483	$19,406	8.0	789	$24,596	$8,545	0	0	$48,419	0	81%
Medical Supplies		$243	0.1%	$233												
Health and personal care stores	100%	$243		$233	$23,269	$155,483	$19,406	8.0	789	$24,596	$2,904	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$2,643	1.1%	$2,531												
Arts, entertainment, and recreation	100%	$2,643		$2,531	$253,089	$120,643	$34,582	3.5	1,885	$18,346	$72,547	4	3	$41,893	3	70%
Audio and Visual Equipment and Services		$1,829	0.8%	$1,751												
Electronics and appliance stores	100%	$1,829		$1,751	$175,142	$182,271	$14,421	12.6	597	$24,156	$13,857	1	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$1,650	0.7%	$1,580												
Sporting goods, hobby, book, and music stores	50%	$825		$790	$79,001	$95,343	$10,220	9.3	745	$13,718	$8,468	1	0	$37,060	0	62%
Miscellaneous store retailers	50%	$825		$790	$79,001	$79,326	$10,648	7.4	686	$15,522	$10,604	1	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$1,105	0.5%	$1,058												
Sporting goods, hobby, book, and music stores	100%	$1,105		$1,058	$105,813	$95,343	$10,220	9.3	745	$13,718	$11,342	1	1	$37,060	1	62%
Personal Care Products and Services		$1,492	0.6%	$1,429												
Personal care services	100%	$1,492		$1,429	$142,871	$38,042	$14,211	2.7	837	$16,978	$53,371	3	2	$40,465	2	68%
Reading		$292	0.1%	$280												
Sporting goods, hobby, book, and music stores	100%	$292		$280	$27,961	$95,343	$10,220	9.3	745	$13,718	$2,997	0	0	$37,060	0	62%
Education		$4,831	2.0%	$4,626												
Educational services	100%	$4,831		$4,626	$462,608	$46,796	$15,017	3.1	732	$20,515	$148,453	7	5	$44,158	5	74%
Miscellaneous		$2,054	0.9%	$1,967												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$719		$688	$68,841	$45,446	$18,120	2.5	456	$39,737	$27,448	1	0	$64,231	0	107%
Activities related to real estate	35%	$719		$688	$68,841	$55,939	$12,504	4.5	371	$33,704	$15,388	0	0	$57,930	0	97%
Special food services	30%	$616		$590	$59,006	$12,228	$4,322	2.8	184	$23,489	$20,856	1	1	$47,264	1	79%
Totals per 100 Households		61380	**26.0%**									**48**	**34**	**$43,212**		

[1] From the BLS Consumer Expenditure Survey
[2] From U.S. Census Economic Census (Retail Trade)
[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.
Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems
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Table A6
Expenditure-Based Demand from Duplex or Townhome
Douglas County Housing Nexus Study

	Allocation by Business Type	Household Expenditure Estimate: Annual HH Expenditure by Category [1] $ in 2009	as % of HH Income	Converted to 2007 $	Expenditures per 100 Households	Estimate of Retail Worker Wages: Gross Receipts 2007 [2]	Annual Wages (in '000s) 2007 [2]	Ratio: Gross Receipts to Wages	# of Retail Workers on Payroll	Alt. 1: Avg. Estimated Wages (2007)	Estimate of Total Retail Households: Total 2007 Wages per X Households	Estimated Retail Workers	Estimated Households (1.42 jobs/hh)	2010 Estimated Household Income [3]	Affordable Households: Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$59,009	100.0%													
Expenditure on Retail Categories		$24,806	42.0%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$3,755	6.4%												HH	AMI
Food and beverage stores	100%	$3,755		$3,596	$359,573	$691,770	$66,574	10.4	2,837	$23,466	$34,604	1	1	$47,240	1	79%
Food away from home		$2,666	4.5%	$2,553												
Food services and drinking places	100%	$2,666		$2,553	$255,292	$408,717	$130,204	3.1	9,546	$13,640	$81,328	6	4	$36,978	4	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$1,118	1.9%	$1,071												
Personal and laundry services	45%	$503		$482	$48,176	$69,224	$22,648	3.1	1,269	$17,847	$15,762	1	1	$41,372	1	69%
Building material and garden equipment and supplies dealers	45%	$503		$482	$48,176	$345,607	$38,991	8.9	1,290	$30,226	$5,435	0	0	$54,299	0	91%
Real estate	10%	$112		$107	$10,706	$200,107	$36,775	5.4	1,058	$34,759	$1,967	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$172	0.3%	$165												
Nonstore retailers	100%	$172		$165	$16,470	$69,218	$7,873	8.8	239	$32,941	$1,873	0	0	$57,135	0	95%
Water and Other Public Services		$504	0.9%	$483												
Waste management and remediation services	100%	$504		$483	$48,262	$13,731	$3,485	3.9	75	$46,467	$12,249	0	0	$71,259	0	119%
Household Operations, Personal Services		$845	1.4%	$809												
Nursing and residential care facilities	40%	$338		$324	$32,366.31	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$507		$485	$48,549	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$632	1.1%	$605												
Building material and garden equipment and supplies dealers	10%	$63		$61	$6,052	$345,607	$38,991	8.9	1,290	$30,226	$683	0	0	$54,299	0	91%
Food and beverage stores	35%	$221		$212	$21,182	$691,770	$66,574	10.4	2,837	$23,466	$2,038	0	0	$47,240	0	79%
General merchandise stores	35%	$221		$212	$21,182	$817,331	$75,149	10.9	3,415	$22,006	$1,948	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$126		$121	$12,104	$79,326	$10,648	7.4	686	$15,522	$1,625	0	0	$38,943	0	65%
Household Furnishings and Equipment		$1,424	2.4%	$1,364												
Furniture and home furnishings stores	40%	$570		$545	$54,544	$140,027	$15,067	9.3	725	$20,782	$5,869	0	0	$44,437	0	74%
Electronics and appliance stores	40%	$570		$545	$54,544	$182,271	$14,421	12.6	597	$24,156	$4,315	0	0	$47,960	0	80%
General merchandise stores	10%	$142		$136	$13,636	$817,331	$75,149	10.9	3,415	$22,006	$1,254	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$142		$136	$13,636	$79,326	$10,648	7.4	686	$15,522	$1,830	0	0	$38,943	0	65%
Apparel and Services		$1,608	2.7%	$1,540												
Clothing and clothing accessories stores	40%	$643		$616	$61,592	$383,551	$48,275	7.9	2,567	$18,806	$7,752	0	0	$42,373	0	71%
General merchandise stores	40%	$643		$616	$61,592	$817,331	$75,149	10.9	3,415	$22,006	$5,663	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$161		$154	$15,398	$79,326	$10,648	7.4	686	$15,522	$2,067	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$80		$77	$7,699	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$80		$77	$7,699	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$2,742	4.6%	$2,626												
Motor vehicle and parts dealers	100%	$2,742		$2,626	$262,569	$511,842	$48,732	10.5	1,112	$43,824	$24,999	1	0	$68,499	0	114%
Gasoline and Motor Oil		$2,250	3.8%	$2,155												
Gasoline stations	100%	$2,250		$2,155	$215,456	$293,681	$6,525	45.0	344	$18,968	$4,787	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$827	1.4%	$792												
Automotive repair and maintenance	100%	$827		$792	$79,192	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$806	1.4%	$772												
Ambulatory health care services	40%	$322		$309	$30,872	$406,016	$159,965	2.5	3,237	$49,418	$12,163	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$242		$232	$23,154	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$242		$232	$23,154	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$507	0.9%	$485												
Health and personal care stores	100%	$507		$485	$48,549	$155,483	$19,406	8.0	789	$24,596	$6,060	0	0	$48,419	0	81%
Medical Supplies		$147	0.2%	$141												
Health and personal care stores	100%	$147		$141	$14,076	$155,483	$19,406	8.0	789	$24,596	$1,757	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$489	0.8%	$468												
Arts, entertainment, and recreation	100%	$489		$468	$46,826	$120,643	$34,582	3.5	1,885	$18,346	$13,422	1	1	$41,893	1	70%
Audio and Visual Equipment and Services		$1,026	1.7%	$982												
Electronics and appliance stores	100%	$1,026		$982	$98,248	$182,271	$14,421	12.6	597	$24,156	$7,773	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$642	1.1%	$615												
Sporting goods, hobby, book, and music stores	50%	$321		$307	$30,738	$95,343	$10,220	9.3	745	$13,718	$3,295	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$321		$307	$30,738	$79,326	$10,648	7.4	686	$15,522	$4,126	0	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$453	0.8%	$434												
Sporting goods, hobby, book, and music stores	100%	$453		$434	$43,379	$95,343	$10,220	9.3	745	$13,718	$4,650	0	0	$37,060	0	62%
Personal Care Products and Services		$578	1.0%	$553												
Personal care services	100%	$578		$553	$55,348	$38,042	$14,211	2.7	837	$16,978	$20,676	1	1	$40,465	1	68%
Reading		$108	0.2%	$103												
Sporting goods, hobby, book, and music stores	100%	$108		$103	$10,342	$95,343	$10,220	9.3	745	$13,718	$1,109	0	0	$37,060	0	62%
Education		$654	1.1%	$626												
Educational services	100%	$654		$626	$62,626	$46,796	$15,017	3.1	732	$20,515	$20,097	1	1	$44,158	1	74%
Miscellaneous		$853	1.4%	$817												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$299		$286	$28,589	$45,446	$18,120	2.5	456	$39,737	$11,399	0	0	$64,231	0	107%
Activities related to real estate	35%	$299		$286	$28,589	$55,939	$12,504	4.5	371	$33,704	$6,390	0	0	$57,930	0	97%
Special food services	30%	$256		$245	$24,505	$12,228	$4,322	2.8	184	$23,489	$8,661	0	0	$47,264	0	79%
Totals per 100 Households		24806	**42.0%**									**17**	**12**	**$43,564**		

[1] From the BLS Consumer Expenditure Survey

[2] From U.S. Census Economic Census (Retail Trade)

[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.

Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems

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Table A7
Expenditure-Based Demand from Condominium
Douglas County Housing Nexus Study

	Allocation by Business Type	Household Expenditure Estimate: Annual HH Expenditure by Category [1]: $ in 2009	as % of HH Income	Converted to 2007 $	Expenditures per 100 Households	Estimate of Retail Worker Wages: Gross Receipts 2007 [2]	Annual Wages (in '000s) 2007 [2]	Ratio: Gross Receipts to Wages	# of Retail Workers on Payroll	Alt. 1: Avg. Estimated Wages (2007)	Estimate of Total Retail Households: Total 2007 Wages per X Households	Estimated Retail Workers	Estimated Households (1.42 jobs/hh)	2010 Estimated Household Income [3]	Affordable Households: Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$44,733	100.0%													
Expenditure on Retail Categories		$20,127	45.0%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$3,362	7.5%												HH	AMI
Food and beverage stores	100%	$3,362		$3,219	$321,939	$691,770	$66,574	10.4	2,837	$23,466	$30,983	1	1	$47,240	1	79%
Food away from home		$2,022	4.5%	$1,936												
Food services and drinking places	100%	$2,022		$1,936	$193,623	$408,717	$130,204	3.1	9,546	$13,640	$61,682	5	3	$36,978	3	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$818	1.8%	$783												
Personal and laundry services	45%	$368		$352	$35,249	$69,224	$22,648	3.1	1,269	$17,847	$11,532	1	0	$41,372	0	69%
Building material and garden equipment and supplies dealers	45%	$368		$352	$35,249	$345,607	$38,991	8.9	1,290	$30,226	$3,977	0	0	$54,299	0	91%
Real estate	10%	$82		$78	$7,833	$200,107	$36,775	5.4	1,058	$34,759	$1,440	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$115	0.3%	$110												
Nonstore retailers	100%	$115		$110	$11,012	$69,218	$7,873	8.8	239	$32,941	$1,253	0	0	$57,135	0	95%
Water and Other Public Services		$456	1.0%	$437												
Waste management and remediation services	100%	$456		$437	$43,666	$13,731	$3,485	3.9	75	$46,467	$11,083	0	0	$71,259	0	119%
Household Operations, Personal Services		$706	1.6%	$676												
Nursing and residential care facilities	40%	$282		$270	$27,042.15	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$424		$406	$40,563	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$540	1.2%	$517												
Building material and garden equipment and supplies dealers	10%	$54		$52	$5,171	$345,607	$38,991	8.9	1,290	$30,226	$583	0	0	$54,299	0	91%
Food and beverage stores	35%	$189		$181	$18,098	$691,770	$66,574	10.4	2,837	$23,466	$1,742	0	0	$47,240	0	79%
General merchandise stores	35%	$189		$181	$18,098	$817,331	$75,149	10.9	3,415	$22,006	$1,664	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$108		$103	$10,342	$79,326	$10,648	7.4	686	$15,522	$1,388	0	0	$38,943	0	65%
Household Furnishings and Equipment		$1,072	2.4%	$1,027												
Furniture and home furnishings stores	40%	$429		$411	$41,061	$140,027	$15,067	9.3	725	$20,782	$4,418	0	0	$44,437	0	74%
Electronics and appliance stores	40%	$429		$411	$41,061	$182,271	$14,421	12.6	597	$24,156	$3,249	0	0	$47,960	0	80%
General merchandise stores	10%	$107		$103	$10,265	$817,331	$75,149	10.9	3,415	$22,006	$944	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$107		$103	$10,265	$79,326	$10,648	7.4	686	$15,522	$1,378	0	0	$38,943	0	65%
Apparel and Services		$1,336	3.0%	$1,279												
Clothing and clothing accessories stores	40%	$534		$512	$51,173	$383,551	$48,275	7.9	2,567	$18,806	$6,441	0	0	$42,373	0	71%
General merchandise stores	40%	$534		$512	$51,173	$817,331	$75,149	10.9	3,415	$22,006	$4,705	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$134		$128	$12,793	$79,326	$10,648	7.4	686	$15,522	$1,717	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$67		$64	$6,397	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$67		$64	$6,397	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$2,099	4.7%	$2,010												
Motor vehicle and parts dealers	100%	$2,099		$2,010	$200,997	$511,842	$48,732	10.5	1,112	$43,824	$19,137	0	0	$68,499	0	114%
Gasoline and Motor Oil		$1,955	4.4%	$1,872												
Gasoline stations	100%	$1,955		$1,872	$187,208	$293,681	$6,525	45.0	344	$18,968	$4,159	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$665	1.5%	$637												
Automotive repair and maintenance	100%	$665		$637	$63,679	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$607	1.4%	$581												
Ambulatory health care services	40%	$243		$233	$23,250	$406,016	$159,965	2.5	3,237	$49,418	$9,160	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$182		$174	$17,438	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$182		$174	$17,438	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$528	1.2%	$506												
Health and personal care stores	100%	$528		$506	$50,560	$155,483	$19,406	8.0	789	$24,596	$6,310	0	0	$48,419	0	81%
Medical Supplies		$97	0.2%	$93												
Health and personal care stores	100%	$97		$93	$9,289	$155,483	$19,406	8.0	789	$24,596	$1,159	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$370	0.8%	$354												
Arts, entertainment, and recreation	100%	$370		$354	$35,431	$120,643	$34,582	3.5	1,885	$18,346	$10,156	1	0	$41,893	0	70%
Audio and Visual Equipment and Services		$891	2.0%	$853												
Electronics and appliance stores	100%	$891		$853	$85,321	$182,271	$14,421	12.6	597	$24,156	$6,750	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$512	1.1%	$490												
Sporting goods, hobby, book, and music stores	50%	$256		$245	$24,514	$95,343	$10,220	9.3	745	$13,718	$2,628	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$256		$245	$24,514	$79,326	$10,648	7.4	686	$15,522	$3,291	0	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$235	0.5%	$225												
Sporting goods, hobby, book, and music stores	100%	$235		$225	$22,503	$95,343	$10,220	9.3	745	$13,718	$2,412	0	0	$37,060	0	62%
Personal Care Products and Services		$476	1.1%	$456												
Personal care services	100%	$476		$456	$45,581	$38,042	$14,211	2.7	837	$16,978	$17,027	1	1	$40,465	1	68%
Reading		$86	0.2%	$82												
Sporting goods, hobby, book, and music stores	100%	$86		$82	$8,235	$95,343	$10,220	9.3	745	$13,718	$883	0	0	$37,060	0	62%
Education		$441	1.0%	$422												
Educational services	100%	$441		$422	$42,229	$46,796	$15,017	3.1	732	$20,515	$13,552	1	0	$44,158	0	74%
Miscellaneous		$738	1.6%	$707												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$258		$247	$24,734	$45,446	$18,120	2.5	456	$39,737	$9,862	0	0	$64,231	0	107%
Activities related to real estate	35%	$258		$247	$24,734	$55,939	$12,504	4.5	371	$33,704	$5,529	0	0	$57,930	0	97%
Special food services	30%	$221		$212	$21,201	$12,228	$4,322	2.8	184	$23,489	$7,493	0	0	$47,264	0	79%
Totals per 100 Households		20127	**45.0%**									**13**	**9**	**$43,816**		

[1] From the BLS Consumer Expenditure Survey
[2] From U.S. Census Economic Census (Retail Trade)
[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.
Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems
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Table A8
Expenditure-Based Demand from Apartment
Douglas County Housing Nexus Study

		Household Expenditure Estimate				Estimate of Retail Worker Wages					Estimate of Total Retail Households			2010	Affordable Households	
		Annual HH Expenditure by Category [1]														
	Allocation by Business Type	$ in 2009	as % of HH Income	Converted to 2007 $	Expenditures per 100 Households	Gross Receipts 2007 [2]	Annual Wages (in '000s) 2007 [2]	Ratio: Gross Receipts to Wages	# of Retail Workers on Payroll	Alt. 1: Avg. Estimated Wages (2007)	Total 2007 Wages per X Households	Estimated Retail Workers	Estimated Households (1.42 jobs/hh)	Estimated Household Income [3]	Total Households	Households at % AMI
Household Income & Expenditure																
Annual Household Income		$44,733	100.0%													
Expenditure on Retail Categories		$20,127	45.0%													
Expenditure Category / Business Type															*Below is DSUM array*	
Food at home		$3,362	7.5%												HH	AMI
Food and beverage stores	100%	$3,362		$3,219	$321,939	$691,770	$66,574	10.4	2,837	$23,466	$30,983	1	1	$47,240	1	79%
Food away from home		$2,022	4.5%	$1,936												
Food services and drinking places	100%	$2,022		$1,936	$193,623	$408,717	$130,204	3.1	9,546	$13,640	$61,682	5	3	$36,978	3	62%
Housing, Maintenance, Repairs, Insurance, Other Expenses		$818	1.8%	$783												
Personal and laundry services	45%	$368		$352	$35,249	$69,224	$22,648	3.1	1,269	$17,847	$11,532	1	0	$41,372	0	69%
Building material and garden equipment and supplies dealers	45%	$368		$352	$35,249	$345,607	$38,991	8.9	1,290	$30,226	$3,977	0	0	$54,299	0	91%
Real estate	10%	$82		$78	$7,833	$200,107	$36,775	5.4	1,058	$34,759	$1,440	0	0	$59,033	0	99%
Fuel Oil, and Other Fuels		$115	0.3%	$110												
Nonstore retailers	100%	$115		$110	$11,012	$69,218	$7,873	8.8	239	$32,941	$1,253	0	0	$57,135	0	95%
Water and Other Public Services		$456	1.0%	$437												
Waste management and remediation services	100%	$456		$437	$43,666	$13,731	$3,485	3.9	75	$46,467	$11,083	0	0	$71,259	0	119%
Household Operations, Personal Services		$706	1.6%	$676												
Nursing and residential care facilities	40%	$282		$270	$27,042.15	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Social assistance	60%	$424		$406	$40,563	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Housekeeping Supplies		$540	1.2%	$517												
Building material and garden equipment and supplies dealers	10%	$54		$52	$5,171	$345,607	$38,991	8.9	1,290	$30,226	$583	0	0	$54,299	0	91%
Food and beverage stores	35%	$189		$181	$18,098	$691,770	$66,574	10.4	2,837	$23,466	$1,742	0	0	$47,240	0	79%
General merchandise stores	35%	$189		$181	$18,098	$817,331	$75,149	10.9	3,415	$22,006	$1,664	0	0	$45,714	0	76%
Miscellaneous store retailers	20%	$108		$103	$10,342	$79,326	$10,648	7.4	686	$15,522	$1,388	0	0	$38,943	0	65%
Household Furnishings and Equipment		$1,072	2.4%	$1,027												
Furniture and home furnishings stores	40%	$429		$411	$41,061	$140,027	$15,067	9.3	725	$20,782	$4,418	0	0	$44,437	0	74%
Electronics and appliance stores	40%	$429		$411	$41,061	$182,271	$14,421	12.6	597	$24,156	$3,249	0	0	$47,960	0	80%
General merchandise stores	10%	$107		$103	$10,265	$817,331	$75,149	10.9	3,415	$22,006	$944	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$107		$103	$10,265	$79,326	$10,648	7.4	686	$15,522	$1,378	0	0	$38,943	0	65%
Apparel and Services		$1,336	3.0%	$1,279												
Clothing and clothing accessories stores	40%	$534		$512	$51,173	$383,551	$48,275	7.9	2,567	$18,806	$6,441	0	0	$42,373	0	71%
General merchandise stores	40%	$534		$512	$51,173	$817,331	$75,149	10.9	3,415	$22,006	$4,705	0	0	$45,714	0	76%
Miscellaneous store retailers	10%	$134		$128	$12,793	$79,326	$10,648	7.4	686	$15,522	$1,717	0	0	$38,943	0	65%
Personal and household goods repair and maintenance	5%	$67		$64	$6,397	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drycleaning and laundry services	5%	$67		$64	$6,397	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Vehicle Purchases		$2,099	4.7%	$2,010												
Motor vehicle and parts dealers	100%	$2,099		$2,010	$200,997	$511,842	$48,732	10.5	1,112	$43,824	$19,137	0	0	$68,499	0	114%
Gasoline and Motor Oil		$1,955	4.4%	$1,872												
Gasoline stations	100%	$1,955		$1,872	$187,208	$293,681	$6,525	45.0	344	$18,968	$4,159	0	0	$42,542	0	71%
Vehicle Maintenance and Repairs		$665	1.5%	$637												
Automotive repair and maintenance	100%	$665		$637	$63,679	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Medical Services		$607	1.4%	$581												
Ambulatory health care services	40%	$243		$233	$23,250	$406,016	$159,965	2.5	3,237	$49,418	$9,160	0	0	$74,341	0	124%
Medical and diagnostic laboratories	30%	$182		$174	$17,438	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Nursing and residential care facilities	30%	$182		$174	$17,438	$0	$0	0.0	0	$0	$0	0	0	$22,734	0	38%
Drugs		$528	1.2%	$506												
Health and personal care stores	100%	$528		$506	$50,560	$155,483	$19,406	8.0	789	$24,596	$6,310	0	0	$48,419	0	81%
Medical Supplies		$97	0.2%	$93												
Health and personal care stores	100%	$97		$93	$9,289	$155,483	$19,406	8.0	789	$24,596	$1,159	0	0	$48,419	0	81%
Entertainment Fees and Admissions		$370	0.8%	$354												
Arts, entertainment, and recreation	100%	$370		$354	$35,431	$120,643	$34,582	3.5	1,885	$18,346	$10,156	1	0	$41,893	0	70%
Audio and Visual Equipment and Services		$891	2.0%	$853												
Electronics and appliance stores	100%	$891		$853	$85,321	$182,271	$14,421	12.6	597	$24,156	$6,750	0	0	$47,960	0	80%
Pets, Toys, Hobbies, and Playground Equipment		$512	1.1%	$490												
Sporting goods, hobby, book, and music stores	50%	$256		$245	$24,514	$95,343	$10,220	9.3	745	$13,718	$2,628	0	0	$37,060	0	62%
Miscellaneous store retailers	50%	$256		$245	$24,514	$79,326	$10,648	7.4	686	$15,522	$3,291	0	0	$38,943	0	65%
Other Entertainment Supplies, Equipment, and Services		$235	0.5%	$225												
Sporting goods, hobby, book, and music stores	100%	$235		$225	$22,503	$95,343	$10,220	9.3	745	$13,718	$2,412	0	0	$37,060	0	62%
Personal Care Products and Services		$476	1.1%	$456												
Personal care services	100%	$476		$456	$45,581	$38,042	$14,211	2.7	837	$16,978	$17,027	1	1	$40,465	1	68%
Reading		$86	0.2%	$82												
Sporting goods, hobby, book, and music stores	100%	$86		$82	$8,235	$95,343	$10,220	9.3	745	$13,718	$883	0	0	$37,060	0	62%
Education		$441	1.0%	$422												
Educational services	100%	$441		$422	$42,229	$46,796	$15,017	3.1	732	$20,515	$13,552	1	0	$44,158	0	74%
Miscellaneous		$738	1.6%	$707												
Accounting, tax preparation, bookkeeping, and payroll services	35%	$258		$247	$24,734	$45,446	$18,120	2.5	456	$39,737	$9,862	0	0	$64,231	0	107%
Activities related to real estate	35%	$258		$247	$24,734	$55,939	$12,504	4.5	371	$33,704	$5,529	0	0	$57,930	0	97%
Special food services	30%	$221		$212	$21,201	$12,228	$4,322	2.8	184	$23,489	$7,493	0	0	$47,264	0	79%
Totals per 100 Households		20127	**45.0%**									**13**	**9**	**$43,816**		

[1] From the BLS Consumer Expenditure Survey

[2] From U.S. Census Economic Census (Retail Trade)

[3] Assuming the remaining portion of 0.42 job is at average County wage level for 2010. This estimate is also adjusted for inflation since year of data series for other datapoints in this methodology.

Source: 2009 Consumer Expenditure Survey, BLS; U.S. Census, 2007 Economic Census; Economic & Planning Systems

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Table A9
Student Generation Rate and Ratios
Douglas County Housing Nexus Study

	Density	Student Generation Factor	Total Estimated Students	Student Teacher Ratio	Total Estimated Teachers	Persons per Household	Estimated Households
Single-Family							
per 100 Standard Lots	5.00 d.u./ac.	0.90	90	15.2	6	1.42	4
per 100 Large Lots	2.50 d.u./ac.	0.90	90	15.2	6	1.42	4
per 100 Estate Lots	1.00 d.u./ac.	0.96	96	15.2	6	1.42	4
per 100 Duplex / Townhomes	12.00 d.u./ac.	0.37	37	15.2	2	1.42	1
per 100 Single-Family [1]		**0.78**	**78**	**15.2**	**5**	**1.42**	**4**
Multi-Family							
per 100 Condominiums	20.00 d.u./ac.	0.15	15	15.2	1	1.42	1
per 100 Apartments	20.00 d.u./ac.	0.15	15	15.2	1	1.42	1
per 100 Multi-Family [1]		**0.15**	**15**	**15.2**	**1**	**1.42**	**1**

Source: Douglas County School District Re. 1; Economic & Planning Systems

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Table A10
Employment Trends by Industry, 2001-2010
Douglas County Housing Nexus Study

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2001-2010 Total	2001-2010 Ann. #	2001-2010 Ann. %
Total Employment													
Agriculture, Forestry, Fishing and Hunting	97	98	97	105	120	114	107	120	105	88	-8	-1	-1.0%
Mining, Quarrying, and Oil and Gas Extraction	77	83	85	102	118	213	280	336	302	257	180	20	14.4%
Utilities	424	314	319	330	327	337	347	358	370	362	-62	-7	-1.7%
Construction	8,241	7,858	7,746	9,286	10,111	9,956	9,409	8,803	6,986	6,199	-2,043	-227	-3.1%
Manufacturing	1,780	1,980	1,947	1,877	2,262	2,164	2,262	2,418	2,280	2,230	450	50	2.5%
Wholesale Trade	2,492	2,673	2,753	3,019	3,170	3,357	3,405	3,279	3,261	3,045	553	61	2.3%
Retail Trade	12,893	13,442	13,580	14,535	15,446	15,619	16,013	16,091	15,109	14,613	1,720	191	1.4%
Transportation and Warehousing	509	550	531	576	1,013	1,036	1,034	1,307	1,153	1,060	551	61	8.5%
Information	6,739	5,566	5,427	5,560	6,325	6,043	5,783	6,236	5,802	5,394	-1,345	-149	-2.4%
Finance and Insurance	3,568	3,084	2,932	3,310	3,996	5,411	5,909	5,640	5,470	5,439	1,871	208	4.8%
Real Estate and Rental and Leasing	804	902	1,003	1,093	1,262	1,372	1,406	1,232	1,166	1,213	409	45	4.7%
Professional and technical services	3,524	3,508	3,687	4,220	6,043	6,430	7,383	8,265	8,194	8,487	4,963	551	10.3%
Management of companies and enterprises	468	177	146	2,340	2,371	2,437	2,566	2,493	2,522	2,388	1,919	213	19.8%
Administration & Waste Management	2,069	2,115	2,296	2,611	2,599	2,993	3,392	3,406	3,252	3,433	1,365	152	5.8%
Educational Services	5,428	5,788	6,167	6,615	6,975	7,518	8,282	8,855	9,141	9,481	4,052	450	6.4%
Health Care and Social Assistance	2,495	2,838	3,214	4,193	4,945	5,421	5,840	6,617	7,136	7,521	5,026	558	13.0%
Arts, Entertainment, and Recreation	1,205	1,270	1,409	1,669	1,907	2,623	2,712	3,068	3,122	2,934	1,728	192	10.4%
Accommodation and Food Services	6,843	7,201	7,508	8,441	9,151	9,528	9,820	10,096	9,733	9,759	2,916	324	4.0%
Other Services (excl. Public Admin.)	2,316	2,569	2,709	2,865	3,039	2,795	2,882	2,925	2,903	2,869	553	61	2.4%
Public Administration	1,940	2,258	2,242	2,194	2,284	2,479	2,615	2,727	2,607	2,626	686	76	3.4%
Other	7	3	2	6	11	19	27	25	35	26	19	2	16.0%
Total	**63,943**	**64,302**	**65,822**	**74,975**	**83,500**	**87,894**	**91,504**	**94,324**	**90,676**	**89,455**	**25,511**	**2,835**	**3.8%**

Source: CDLE, QCEW; Economic & Planning Systems

H:\20874-Douglas County Nexus Study\Data\[20874-QCEW-022111.xlsx]Table 1B County