Final Report

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Housing Affordability Index Model

Singlefamily Model

Prepared for

City of Fort Collins
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Background

In 1996, the City of Fort Collins (City) retained BBC to create a computerized model that allowed the City to evaluate and test the impacts of certain variables on housing affordability in Fort Collins. Since this model was created, housing costs have continued to increase at a very rapid pace in the City, as well as in surrounding areas and throughout most of the Front Range.

This report and the accompanying Housing Affordability Index (HAI) model serve as an update to the original model. While providing an update, BBC took steps to improve on the capability and usability of the now dated 1996 effort.

The City had three objectives for the HAI project:

1. To quantify how housing affordability has changed in Fort Collins during the past five years (1999 to 2004).

2. To determine what role land costs, impact fees, construction costs, overhead costs and required profits have played in changing housing affordability; and

3. To compare the housing affordability in Fort Collins with that of five peer cities, with focus on their development fee structures.

Methodology

The methodology behind the HAI model involved three tasks:

Task 1. Data collection. In this task, BBC collected all of the variables and data needed to construct the HAI model and analyze housing affordability in Fort Collins and peer cities. Data was collected through a survey instrument and from various secondary sources. Collected data included:

- Household income distributions;
- Interest rates;
- Land costs;
- Costs of construction materials and labor;
- Home sales data;
- Development fees; and
- Mortgage products and terms.

Task 2. Development of Housing Affordability Model and Index (HAI). In this task, BBC built a prototype computerized model to measure the effect of development variables on housing affordability in Fort Collins.

The model was developed using Microsoft Excel® software. The model begins with an "input" worksheet that allows the user to easily change the development variables that feed the model (e.g., move interest rates on a FHA loan up or down). The model also contains citations of sources for updating the development cost variables to ensure that City staff can easily manipulate these variables individually and collectively to determine their effect(s) on housing affordability. Most construction cost data were obtained using a survey distributed to Front Range developers and homebuilders.

The "output" of the model measures the number and percentage of households in the City that can afford to buy a starter home—given changes in certain variables. The "guts" of the model processes the "input" variables, analyzes development costs for a typical starter home in Fort Collins and peer cities, and analyzes the affordability of current market-priced single family homes. Following an initial review and public comment period in June and July 2005, additional capacity was built to analyze both detached and attached single family homes.

The model determines to what extent various variables affect single family home prices in Fort Collins and peer cities. For example, the model allows the user to see how a 10 percent increase in development fees would reduce the number of households who could afford a starter home. The model also determines the affordability of current housing market offerings using data obtained from the Multiple Listing Service.

In essence, the model compares the cost of housing to the incomes of residents in Fort Collins and peer cities. If the affordability index is low in a particular city, several factors can be the cause, but it ultimately signals that there is a mismatch between housing costs and the incomes of area residents.

For example, median household income has not kept pace with rising property values in Fort Collins, and this situation is indicative of the other Front Range cities in this study. The median property value has increased from about $85,000 in 1990 to nearly $194,000 in 2004, an increase of 128 percent. Over the same period, median household income in Fort Collins has increased by 78 percent, from about $27,000 in 1990 to approximately $48,000 in 2004. Thus, low affordability index scores can indicate that housing costs are too high, or that area income growth has not kept pace with rising housing costs.

Task 3. Sensitivity analysis. An analysis was performed to determine the relative sensitivity of housing affordability on development costs and other variables such as interest rates and the amount of down payment on the mortgage.

Based on this methodology our summary of findings follows.

Summary of Findings

Exhibit 1 compares housing affordability in Fort Collins and five peer cities over the last 15 years. Please note that the 1996 study only analyzed housing affordability to renter households, and that the Town of Windsor was not included in the original analysis. The 1996 study defined a "potential buyer household" as a household that is a present renter

household. This study defines a "potential buyer household" as any owner or renter household. This definition has been changed to accommodate for a real-time housing market affordability comparison. Thus, the updated study provides three HAI results for each municipality: a renter, an owner, and a total HAI.

Fort Collins currently ranks second out of the six cities in overall affordability; however, housing is less affordable now in Fort Collins than in 1999. In 1999, Fort Collins had an overall HAI score of 62.4. In other words, 62.4 percent of Fort Collins residents could afford a starter home,[1] compared to 60.5 percent in 2004, a decrease of approximately 2 percentage points. A decrease of 2 index points represents about 825 households in Fort Collins that can no longer afford a starter home.

Exhibit 1.
Housing Affordability Index; 1990-2004

City/Tenure	1990	1995	1999	2004	Change 1999-2004
Fort Collins					
Renters	29.2	33.5	45.4	43.2	-2.2
Owners	-	-	69.8	67.3	-2.5
Total	-	-	62.4	60.5	-1.9
Colorado Springs					
Renters	38.9	47.7	35.9	30.8	-5.1
Owners	-	-	68.8	64.5	-4.2
Total	-	-	55.9	52.3	-3.6
Greeley					
Renters	26.4	35.8	34.5	29.5	-5.0
Owners	-	-	63.4	58.7	-4.8
Total	-	-	54.0	50.1	-4.0
Longmont					
Renters	26.0	37.4	36.8	35.5	-1.2
Owners	-	-	70.6	69.7	-0.9
Total	-	-	58.9	58.5	-0.4
Loveland					
Renters	32.9	41.7	33.1	29.3	-3.9
Owners	-	-	66.2	62.8	-3.4
Total	-	-	56.1	53.3	-2.8
Windsor					
Renters	-	-	39.9	32.8	-7.2
Owners	-	-	75.5	70.5	-5.0
Total	-	-	68.3	63.0	-5.3

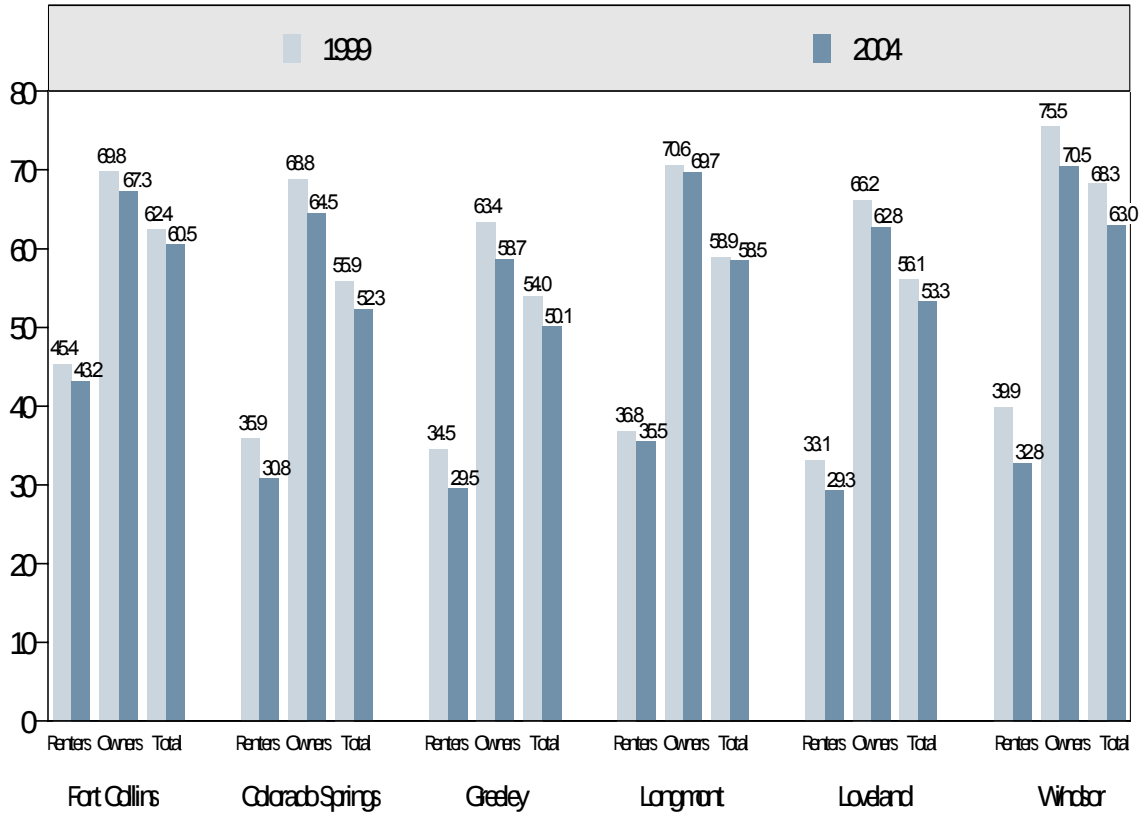
Note: The 1996 study only computed the renter HAI; Windsor was not part of the 1996 study.
Source: BBC Research & Consulting.

[1] For the purposes of this study, a "starter home" is defined as a 1,500 square foot home on a 5,000 square foot lot.

According to the HAI model, starter homes are less affordable across all cities in 2004 than they were in 1999. Windsor saw the biggest dip in overall housing affordability between 1999 and 2004, losing 5.3 percentage points. This figure includes both owner and renter populations. Overall, affordability dropped the least in Longmont, less than one percentage point.

Exhibit 2 presents the data from the previous exhibit in graphical form. The largest decline in affordability was experienced by the renter population in Windsor (-7.2).

Exhibit 2.
Housing Affordability Index; 1999-2004

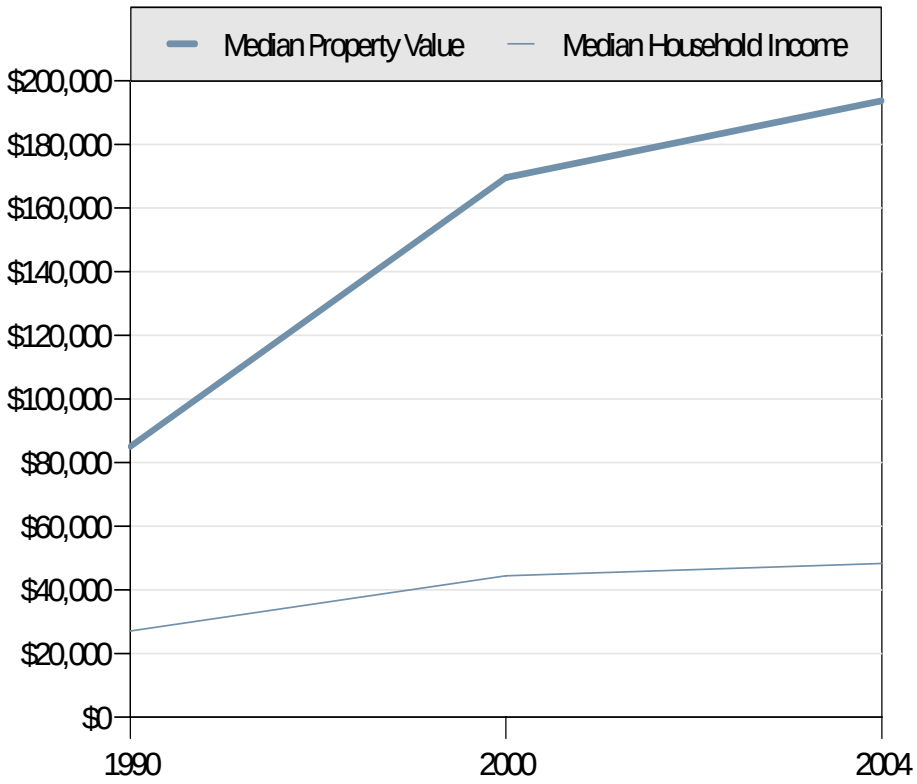


Source: BBC Research & Consulting.

The Fort Collins HAI declined the second-least of its peers, indicating that household income in Fort Collins has kept pace with rising housing costs better than other municipalities. Renters in Fort Collins have the highest affordability index scores than any other municipality, in both 1999 and 2004. A discussion of the factors that influence housing affordability follows.

Affordability trends 1995-2004. Affordability dropped in all cities between 1999 and 2004 despite a nationwide decline in interest rates. Interest rates have dropped by nearly 1.75 percentage points on average and median family incomes have risen by an average of approximately $4,000 over the same period in all municipalities in this study. Both of these factors are favorable to prospective homebuyers. The drop in affordability can be attributed to other factors, such as land costs, impact fees, hard building costs, and market forces, such as scarcity and regional growth outweighing the beneficial effects of falling interest rates and rising incomes. Exhibit 3 shows median property values compared to median household income in Fort Collins.

Exhibit 3.
Median Property Values and Median Household Income; City of Fort Collins, 1990-2004

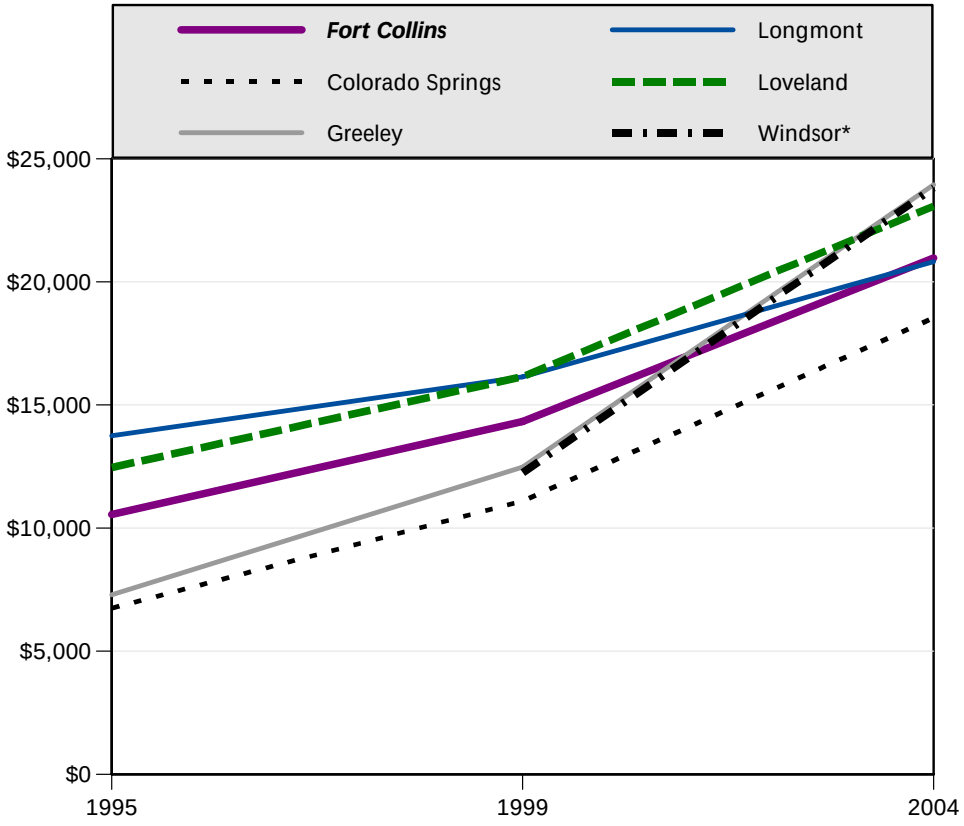


Source: U.S. Census Bureau, PCensus 2005, and CO Div. of housing, Cost of Housing Analysis.

Exhibit 3 indicates that median household income has not kept pace with rising property values in Fort Collins, and this situation is indicative of the other Front Range cities in this study. The median property value has increased from about $85,000 in 1990 to nearly $194,000 in 2004, an increase of 128 percent. Over the same period, median household income in Fort Collins has increased by 78 percent, from about $27,000 in 1990 to approximately $48,000 in 2004.

Municipal Building Fees. Another factor that may cause a decrease in housing affordability is the municipal fee structure that is imposed on new construction. As a city grows it faces pressure to provide a high level of service to an ever-increasing resident base. To mitigate the effects of growth in population and physical size, cities impose development fees to recoup the cost of expanding physical infrastructure and acquiring more water to serve its new residents. Exhibit 4 shows municipal fees for Fort Collins and its peer cities from 1995 to 2004. Fees used for Exhibit 4 include building permit and inspection fees, use tax, impact fees, and raw water requirements.

Exhibit 4.
Municipal Building Fees; 1995-2004



Note: (*) Windsor was not part of the 1995 study.
Source: BBC Research & Consulting, Northern Colorado HBA, City of Longmont, City of Colorado Springs.

Greeley and Windsor have the highest fee requirements due in large part to the raw water requirements that they impose on new building. Total municipal fees in Fort Collins rose from about $14,000 in 1999 to nearly $21,000 in 2004, an increase of 46.4 percent. Greeley and Windsor had the sharpest increases in fees between 1999 and 2004; both municipalities experienced increases of over 90 percent, from about $13,000 in 1999 to approximately $24,000 in 2004. Colorado Springs has consistently had the lowest total fees, but it too experience fee increases, from about $11,000 in 1999 to $18,534 in 2004.

1999 Results

The 1999 HAI analysis focuses on the affordability of housing costs derived from two separate data sources: a hypothetical starter home derived from builder cost surveys, and 2000 U.S. Census median home values.

Survey data. Exhibit 5 below portrays summary HAI model results for each City in 1999 in tabular form. As a reminder, the HAI ratings in Exhibit 1 correspond to the percent of total households that can afford to purchase a starter home—assuming a 5 percent down payment and a 7.49 percent 30-year fixed-rate mortgage—without a 30 percent cost burden, as defined below.

One important note is that, in this study, cost burden is defined as a household spending 30 percent or more of annual income on housing costs. The City of Fort Collins defines cost burden at 38 percent of annual household income spent on housing costs, by City Ordinance 19, adopted in 1999. To provide an "apples-to-apples" comparison, a 30 percent cost burden benchmark is used across all municipalities in this study.

Exhibit 5.
HAI Summary by City, Cost Survey Data, 1999

City	Households	Starter Home Price	Required Annual Income	HAI Rating
Fort Collins	37,426	$134,478	$42,569	62.4
Colorado Springs	141,672	$127,971	$40,510	55.9
Greeley	23,955	$124,557	$39,429	54.0
Longmont	26,725	$135,875	$43,012	58.9
Loveland	19,728	$132,709	$42,010	56.1
Windsor	3,597	$124,386	$39,375	68.3

Source: BBC Research & Consulting.

The data in Exhibit 5 suggest that, in 1999, Windsor was the most affordable of the cities compared to its peers with an HAI rating of 68.3 and Greeley was the least affordable with an HAI rating of 54.0. In other words, 68.3 percent of households (2,456 out of 3,597) could afford the hypothetical starter home in Windsor, compared with only 54.0 percent of households (12,935 out of 23,955) in Greeley.

Windsor had the highest HAI score in 1999 since starter home prices were the lowest of all its peers. Greeley, like Windsor, had a relatively low starter home price, but the median family income in Greeley was the lowest of all cities in the study ($45,904). Windsor had the highest median family income of all its peers ($60,305), according to the 2000 U.S. Census. While a starter home may be similar in cost across two cities, they may have widely

varying HAI scores due an income disparity. The next section evaluates housing affordability based on the median home value as reported by the 2000 U.S. Census. This analysis is useful to evaluate median family incomes against median home values in the study cities.

Census data. Exhibit 6 shows summary model HAI results for each city in 1999 using the U.S. Census Bureau's median home value figures from the 2000 U.S. Census. The 1999 market data was evaluated assuming a 5 percent down payment and a 7.49 percent 30-year fixed-rate mortgage.

Exhibit 6.
HAI Summary by City, Census Data, 1999

City	Households	Median Home Value	Required Annual Income	HAI Rating
Fort Collins	37,426	$169,562	$53,675	51.1
Colorado Springs	141,672	$147,053	$46,550	48.6
Greeley	23,955	$135,440	$42,874	49.6
Longmont	26,725	$177,865	$56,304	45.2
Loveland	19,728	$155,888	$49,347	47.7
Windsor	3,597	$158,637	$50,217	56.7

Source: U.S. Census Bureau and BBC Research & Consulting.

The data in Exhibit 6 suggest that, in 1999, Windsor was the most affordable of the cities with an HAI rating of 56.7 and Longmont was the least affordable with an HAI rating of 45.2. In other words, 56.7 percent of households (2,039 out of 3,597) could afford the median-valued home in Windsor, compared with only 45.2 percent of households (10,828 out of 23,955) in Longmont.

2004 Results

The 2004 HAI analysis focuses on the affordability of housing costs derived from two separate data sources: a hypothetical starter home derived from builder cost surveys, and current market offerings, accessed through several Front Range Multiple Listing Service websites.

Survey data. Exhibit 7 below portrays summary HAI model results for each City in 2004 in tabular form. As a reminder, the HAI ratings in Exhibit 7 correspond to the percent of total households that can afford to purchase a starter home—assuming a 5 percent down payment and a 5.78 percent 30-year fixed-rate mortgage—without cost burden. The difference in the interest rate from 1999 to 2004 reflects the actual reduction in the prevailing market rate experienced in the last 5 years.

Exhibit 7.
HAI Summary by City, Cost Survey Data, 2004

City	Households	Starter Home Price	Required Annual Income	HAI Rating
Fort Collins	41,243	$181,274	$48,164	60.5
Colorado Springs	153,556	$181,840	$48,315	52.3
Greeley	27,974	$180,343	$47,917	50.1
Longmont	28,534	$181,122	$48,124	58.5
Loveland	22,248	$183,376	$48,723	53.3
Windsor	4,237	$178,123	$47,327	63.0

Source: BBC Research & Consulting.

The data in Exhibit 7 suggest that, in 2004, Windsor was again the most affordable city with an HAI rating of 63.0 and Greeley was the least affordable with an HAI rating of 50.1. In other words, 63.0 percent of total households (2,669 out of 4,237) could afford the hypothetical starter home in Windsor, compared to only 50.1 percent of total households (14,015 out of 27,974) in Greeley.

Comparing starter home prices in the 2004 cost survey scenario reveals that they are similar across all municipalities. Variations in affordability may be due to disparities in income.

When comparing survey data to market data, one should note that market home prices vary more. This is due to external market forces that do not affect the cost components of homebuilding. A discussion of housing affordability based on data obtained from current market offerings follows.

Market data. Exhibit 8 on the following page shows summary model HAI results for each city in 2004 using Multiple Listing Service (MLS) data. The 2004 market data was evaluated assuming a 5 percent down payment and a 5.78 percent 30-year fixed-rate mortgage.

The data in Exhibit 8 suggest that, in 2004, Windsor was the most affordable of the cities with an HAI rating of 63.0 and Longmont was the least affordable with an HAI rating of 49.8.

Exhibit 8.
HAI Summary by City, Market Data, 2005

City	Households	Average List Price	Required Annual Income	HAI Rating
Fort Collins	41,243	$201,460	$53,528	55.4
Colorado Springs	153,556	$164,237	$43,638	57.6
Greeley	27,974	$144,476	$38,387	61.0
Longmont	28,534	$215,736	$57,321	49.8
Loveland	22,248	$191,521	$50,887	51.1
Windsor	4,237	$178,007	$47,296	63.0

Source: www.coloproperty.com, Pike's Peak Association of Realtors, and BBC Research & Consulting.

In other words, 63.0 percent of households (2,669 out of 4,237) could afford the median-valued home in Fort Collins, compared with only 49.8 percent of households (14,210 out of 28,534) in Longmont.

Why does market data differ from cost survey data? Cost survey data was derived from BBC's residential cost survey that was distributed to homebuilders. The hypothetical starter home price reflects the average costs experienced by builders, and are useful to determine the role a municipality's fee structure plays in the overall cost of building a new house. Market data comes from actual listings on the housing market from March 2005-July 2005. Supply and demand, perceived scarcity, and other external forces affect the average list price of a house on the market in 2005. Cost survey data is used to analyze the endogenous cost components that drive housing costs. Market data is used to analyze the exogenous forces on housing markets that may drive housing costs up or down.

Housing Affordability Index: Model Overview

The housing affordability index model is an updateable Excel workbook that contains five worksheets.

Income data. The income data worksheet contains income distributions by percentage of area median family income for 1999 and 2004 for Fort Collins and the five peer cities. BBC designed this worksheet to be easily updated by the user. Data from HUD was used to obtain separate income distributions for owner and renter households. Renter and owner households were separated into groups based on standard HUD classifications. Housing affordability is then determined by comparing the family income distributions on this worksheet to housing costs derived on the average building cost worksheet.

Average building costs. This worksheet is used to compile and average residential building costs obtained from completed builder surveys and construction cost-estimating manuals. The following costs are averaged:

- Carrying costs
- Site and lot development
- Construction labor
- Construction materials
- Builder overhead
- Builder profit

These costs are averaged to isolate the effects of impact fees on housing affordability. There is no evidence so far that these costs vary significantly across the Front Range and therefore they are held constant.

Cost input. The cost input worksheet combines the average building costs with the following city-specific building costs to derive the total housing cost for each city.

- Land acquisition
- Building fees—contains building permit, plan check, inspection, and administrative fees.
- Impact fees—contains impact and plant investment fees.
- Use tax—this is an excise tax on building materials, collected in the municipality where construction occurs.

The average 30-year mortgage interest rate for 1999 and 2004 and the amount of down payment is reported on the cost input worksheet and can be updated by the user along with all cost data. This worksheet also allows the user to change the model to analyze affordability based on current market prices for both detached and attached homes, and historical U.S. Census data.

Model calculations. This worksheet takes the cost and income data from above and calculates the housing affordability index by calculating the total annual household income necessary to be non cost-burdened. We assume a 30-year mortgage with a 5 percent down payment and an additional 20 percent for private mortgage insurance, taxes, and hazard insurance. We calculate the percentage of current renters, owners, and the total population that can afford a starter home.

Model output. The model output worksheet reports the number of renter and owner households that can afford the starter home without cost burden and housing affordability

percentages for the renter, owner, and total population for Fort Collins and the five peer cities. The user can view all results on this worksheet.

Quick summary. The quick summary worksheet allows users to determine the impact of changes in all housing cost variables on overall housing affordability. Users can raise the interest, for example, and see how many households become cost-burdened as a result. The same analysis can be performed for impact fees, land acquisition, and use tax.

This worksheet has additional capability to evaluate the effects of any fee. For example, if a subdivision homeowners association (HOA) levies additional fees, the effects on affordability can be modeled by entering the HOA fees in the fee category titled "additional building costs/fees."

Sensitivity Analysis

A sensitivity analysis was performed to determine the relative magnitude of the effect of changes in housing cost variables on affordability. Exhibit 9 documents this process.

Exhibit 9.
Example Sensitivity Analysis, City of Fort Collins

Impact	*Effect on Fort Collins HAI*	*Households Affected*
Increase in Interest Rate by 1 percent	↓ 5.0%	2,083
Down Payment Assistance decreases by 1 percent	↓ 0.5%	187
Increase in Impact Fees by $1000*	↓ 0.2%	98

Note: * Changes in any construction costs, land prices, or building fees will have a similar magnitude of impact.
Source: BBC Research & Consulting.

Housing affordability is more sensitive to interest rate fluctuations when compared to shocks to down payment amount, and impact fees. A 1 percent rise in the interest rate causes the Fort Collins HAI to drop by 5.0 percentage points. In other words, a 1 percent increase in the interest rate sends 2,083 households into a cost burden situation. In comparison, a 1 percent drop in the amount of down payment lowers the Fort Collins HAI by 0.5 percentage points, or 187 households. An impact fee increase of $1,000 has the smallest relative impact, lowering the Fort Collins HAI by 0.2 percentage points, or 98 households.[2] These impact assessments are unique to each municipality, since they have different income distributions. For instance, a 1 percent increase in interest rates can have a different effect in Greeley, than in Fort Collins.

[2] Fluctuations in impact fees will have the same effect as fluctuations in all construction and development costs, e.g. land prices, hard construction costs, permit and inspection fees, etc.

Summary and Conclusions

The HAI for all study cities declined between 1999 and 2004. There are several factors that have affected affordability, some of them are under municipal control and others are not. The following factors affected housing affordability during the study period:

- Decreasing interest rates—positive
- Increasing median family and household income—positive
- Increasing hard construction costs—negative
- Increasing cost of water rights—negative
- Increasing building, impact, and development fees—negative
- Housing market appreciation—negative

The net effect of the aforementioned factor on affordability is negative. Housing affordability has decreased across the Front Range, indicating a widening gap between area incomes and regional home values.

The appendices that follow this report contain information on data sources, screen shots of the HAI model and our builder cost survey instrument.

APPENDIX A.
Housing Affordability Index Model

This Page Contains Income Distribution Data
Any Yellow Cell Can Be Changed By The User.

Income Data

Fort Collins 2004

Renter Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	2,973	7.2%
31 - 50%	2,044	5.0%
51 - 80%	1,841	4.5%
81 - 95%	1,263	3.1%
96 - 100%	320	0.8%
101 - 120%	1,279	3.1%
120%+	1,916	4.6%

Owner Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	2,271	5.5%
31 - 50%	2,917	7.1%
51 - 80%	5,192	12.6%
81 - 95%	2,660	6.4%
96 - 100%	883	2.1%
101 - 120%	3,523	8.5%
120%+	12,160	29.5%

Totals

	Households	*Percentage*
Renters	11,638	28.2%
Owners	29,605	71.8%
Total	41,243	100.0%

Fort Collins MFI

30%	$19,018
50%	$31,697
80%	$50,714
95%	$60,223
100%	$63,393
120%	$76,072

Colorado Springs 2004

Renter Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	12,442	8.1%
31 - 50%	11,790	7.7%
51 - 80%	13,425	8.7%
81 - 95%	5,283	3.4%
96 - 100%	925	0.6%
101 - 120%	3,700	2.4%
120%+	8,246	5.4%

Owner Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	6,629	4.3%
31 - 50%	8,798	5.7%
51 - 80%	17,606	11.5%
81 - 95%	9,145	6.0%
96 - 100%	2,652	1.7%
101 - 120%	10,608	6.9%
120%+	42,307	27.6%

Totals

	Households	*Percentage*
Renters	55,811	36.3%
Owners	97,745	63.7%
Total	153,556	100.0%

Colorado Springs MFI

30%	$17,534
50%	$29,224
80%	$46,758
95%	$55,525
100%	$58,447
120%	$70,136

Greeley 2004

Renter Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	2,214	7.9%
31 - 50%	1,461	5.2%
51 - 80%	1,420	5.1%
81 - 95%	761	2.7%
96 - 100%	254	0.9%
101 - 120%	700	2.5%
120%+	1,431	5.1%

Owner Households at Percentage of MFI

	Households	*Percentage*
0 - 30%	1,519	5.4%
31 - 50%	1,767	6.3%
51 - 80%	3,253	11.6%
81 - 95%	1,725	6.2%
96 - 100%	575	2.1%
101 - 120%	1,996	7.1%
120%+	8,899	31.8%

Totals

	Households	*Percentage*
Renters	8,240	29.5%
Owners	19,734	70.5%
Total	27,974	100.0%

Greeley MFI

30%	$15,283
50%	$25,471
80%	$40,754
95%	$48,395
100%	$50,942
120%	$61,130

Average Building Costs

Housing Cost Components from Surveys and Estimation manuals

	Location +3%	Location -9%		Enter Survey Below to Row Z		
	NAHB	RS Means	Greeley 1	Loveland 1	Greeley 2 *	Anonymous
Land Acquisition (1)	20,296	20,296	30,000	55,000	37,000	40,000
Carrying Costs	10,000	10,000	6,000	2,000	3,000	2,000
Building Fees	2,843	2,843	10,000	8,000	21,500	8,000
Site & Lot Developm	18,000	18,000	18,000	18,000	18,000	18,000
Use Tax	2,600	2,600	4,000	2,000		2,000
Impact Fees	16,141	16,141	6,000	6,000		6,000
Labor per Unit	51,516	38,347	46,000	68,000	45,000	46,000
Materials per Unit	57,350	42,689	50,000	68,000	45,000	50,000
Builder Overhead	13,810	10,280	10,000	20,000	10,000	20,000
Builder Profit	6,905	5,140	20,000	10,000	8,000	8,000
Total	***$199,462***	***$166,335***	***$200,000***	***$257,000***	***$187,500***	***$200,000***

Average Costs

*Building Fees contain Impact, use tax, and Building fees

Carrying Costs	5,500
Site & Lot Developm	18,000
Labor per Unit	49,144
Materials per Unit	52,173
Builder Overhead	14,015
Builder Profit	9,674
Total	***$148,506***

Cost Input

This Page Contains Cost and Other Variables Which Drive Housing Prices.

Any Yellow Cell Can Be Changed By The User.

Use Market Data?

Fort Collins Costs/Fees

	2004	1999	1995	Yearly Growth
Land Acquisition (1)	$11,800	$17,200	$23,250	-0.073
Building Fees	$2,227	$1,264	$803	0.12
Use Tax	$2,600	$2,307	$1,966	
Wet Utilities	$9,691			
Dry Impact Fees	$6,450	$10,755	$7,773	0.0846
Total	***$32,768***	***$31,526***	***$33,792***	

Colorado Springs Costs/Fees

	2004	1999	1995	Yearly Growth
Land Acquisition (1)	$14,800	$13,918	$13,250	0.0124
Building Fees	$1,151	$535		
Use Tax	$4,695	$2,780	$1,474	
Wet Utilities	$9,456			
Dry Impact Fees	$3,232	$7,787	$5,269	0.1026
Total	***$33,334***	***$25,020***	***$19,993***	

Greeley Costs/Fees

	2004	1999	1995	Yearly Growth
Land Acquisition (1)	$7,900	$9,130	$10,250	-0.029
Building Fees	$1,355	$791	$515	0.1136
Use Tax	$2,186	$2,101	$1,537	
Wet Utilities	$14,802			
Dry Impact Fees	$5,594	$9,583	$5,237	0.1631
Total	***$31,837***	***$21,605***	***$17,539***	

Longmont Costs/Fees

	2004	1999	1995	Yearly Growth
Land Acquisition (1)	$11,800	$16,785	$22,250	-0.068
Building Fees	$3,196	$1,137	$497	0.2296
Use Tax	$2,603	$2,125	$1,869	
Wet Utilities	$9,022			
Dry Impact Fees	$5,994	$12,876	$11,386	0.0312
Total	***$32,616***	***$32,923***	***$36,002***	

Common Housing Cost Components

	2004	1999	1995	Yearly Growth
Carrying Costs	$5,500	$4,943	$4,539	0.022
Site & Lot Developme	$18,000	$14,202	$11,750	0.049
Labor per Unit	$49,144	$30,580	$20,922	0.100
Materials per Unit	$52,173	$37,571	$28,892	0.068
Builder Overhead	$14,015	$9,927	$7,533	0.071
Builder Profit	$9,674	$5,728	$3,767	0.110
Total	***$148,506***	***$102,952***	***$77,403***	0.075
Mortgage Interest Rat	5.78%	7.49%		
Down Payment (%)	5.00%	5.00%		

Single Family Detached Market Price 2004

Fort Collins	$201,460
Colorado Springs	$164,237
Greeley	$144,476
Longmont	$215,736
Loveland	$191,521
Windsor	$178,007

Source: www.coloproperty.com - regional MLS

Single Family Attached Market Price 2004

Fort Collins	$150,000
Colorado Spring	$150,000
Greeley	$150,000
Longmont	$150,000
Loveland	$150,000
Windsor	$150,000

Median Home Value 1999

Fort Collins	$169,562
Colorado Springs	$147,053
Greeley	$135,440
Longmont	$177,865
Loveland	$155,888
Windsor	$158,637

Source 2000 U.S. Census

Model Calculations

		Housing Cost	Cost Less Down Payment	Principal & Interest	PMI, escrow exp.	Total monthly expense	Monthly income required for non-burden	Annual income required for non-burden
	2004	$ 181,274	$ 172,211	$ 1,003	$ 201	$ 1,204	$ 4,014	$ 48,164
Fort Collins	***1999***	134,478	127,754	887	177	1,064	3,547	42,569
	2004	181,840	172,748	1,007	201	1,208	4,026	48,315
Colorado Sprin	***1999***	127,971	121,573	844	169	1,013	3,376	40,510
	2004	180,343	171,326	998	200	1,198	3,993	47,917
Greeley	***1999***	124,557	118,329	821	164	986	3,286	39,429
	2004	181,122	172,066	1,003	201	1,203	4,010	48,124
Longmont	***1999***	135,875	129,081	896	179	1,075	3,584	43,012
	2004	183,376	174,207	1,015	203	1,218	4,060	48,723
Loveland	***1999***	132,709	126,074	875	175	1,050	3,501	42,010
	2004	178,123	169,217	986	197	1,183	3,944	47,327
Windsor	***1999***	124,386	118,167	820	164	984	3,281	39,375

Fort Collins
2004

	Percentage of income class that	Renters with Affordable	Total Renter Population	Owners With Affordable	Total Owner Population	Total Households with Affordable Options	Total Population
0 - 30%	0%	-	2,973	-	2,271	-	5,243
31 - 50%	0%	-	2,044	-	2,917	-	4,961
51 - 80%	13%	247	1,841	696	5,192	943	7,033
81 - 95%	100%	1,263	1,263	2,660	2,660	3,923	3,923
96 - 100%	100%	320	320	883	883	1,203	1,203
101 - 120%	100%	1,279	1,279	3,523	3,523	4,802	4,802
120%+	100%	1,916	1,916	12,160	12,160	14,077	14,077
Total		***5,026***	***11,638***	***19,922***	***29,605***	***24,948***	***41,243***

HAI
Renters ***43.2%***
Owners ***67.3%***
Total ***60.5%***

Model Output

Fort Collins

Home Price Basis	$134,478					
1999	Renter	Total	Owner	Total	Total	
Percent of Households with affordable options	Households with affordable options	Renter Households	Households with affordable options	Owner Households	Households with affordable options	Total Households
0.0%	0	2,880	0	2,006	0	4,886
0.0%	0	1,980	0	2,577	0	4,557
27.5%	491	1,784	1,262	4,586	1,752	6,370
100.0%	1,224	1,224	2,349	2,349	3,573	3,573
100.0%	310	310	780	780	1,090	1,090
100.0%	1,239	1,239	3,112	3,112	4,351	4,351
100.0%	1,857	1,857	10,742	10,742	12,598	12,598
62.4%	5,121	11,274	18,245	26,152	23,365	37,426

Renter HAI	45.4%
Owner HAI	69.8%
Total HAI	62.4%

Home Price Basis	$181,274					
2004	Renter	Total	Owner	Total	Total	
Percent of Households with affordable options	Households with affordable options	Renter Households	Households with affordable options	Owner Households	Households with affordable options	Total Households
0.0%	0	2,973	0	2,271	0	5,243
0.0%	0	2,044	0	2,917	0	4,961
13.4%	247	1,841	696	5,192	943	7,033
100.0%	1,263	1,263	2,660	2,660	3,923	3,923
100.0%	320	320	883	883	1,203	1,203
100.0%	1,279	1,279	3,523	3,523	4,802	4,802
100.0%	1,916	1,916	12,160	12,160	14,077	14,077
60.5%	5,026	11,638	19,922	29,605	24,948	41,243

Renter HAI	43.2%
Owner HAI	67.3%
Total HAI	60.5%

Colorado Springs

Home Price Basis	$127,971					
1999	Renter	Total	Owner	Total	Total	
Percent of Households with affordable options	Households with affordable options	Renter Households	Households with affordable options	Owner Households	Households with affordable options	Total Households
0.0%	0	12,394	0	5,838	0	18,232
0.0%	0	11,744	0	7,747	0	19,491
14.2%	1,894	13,373	2,196	15,504	4,091	28,878
100.0%	5,263	5,263	8,053	8,053	13,316	13,316
100.0%	921	921	2,335	2,335	3,257	3,257
100.0%	3,686	3,686	9,342	9,342	13,027	13,027
100.0%	8,215	8,215	37,256	37,256	45,471	45,471
55.9%	19,978	55,596	59,183	86,076	79,161	141,672

Renter HAI	35.9%
Owner HAI	68.8%
Total HAI	55.9%

Home Price Basis	$181,840					
2004	Renter	Total	Owner	Total	Total	
Percent of Households with affordable options	Households with affordable options	Rental Households	Households with affordable options	Owner Households	Households with affordable options	Total Households
0.0%	0	12,442	0	6,629	0	19,072
0.0%	0	11,790	0	8,798	0	20,587
0.0%	0	13,425	0	17,606	0	31,031
82.2%	4,345	5,283	7,520	9,145	11,865	14,428
100.0%	925	925	2,652	2,652	3,577	3,577
100.0%	3,700	3,700	10,608	10,608	14,308	14,308
100.0%	8,246	8,246	42,307	42,307	50,553	50,553
52.3%	17,216	55,811	63,088	97,745	80,303	153,556

Renter HAI	30.8%
Owner HAI	64.5%
Total HAI	52.3%

Common Cost Components

Mortgage Interest Rate	5.78%
Down Payment (%)	5.00%

Fort Collins Costs/Fees

	2004
Land Acquisition	$ 11,800
Building Fees	$ 2,227
Use Tax	$ 2,600
Wet Utilities	$ 9,691
Dry Impact Fees	$ 6,450
Additional Building Costs/F	$ -
Total	***$ 32,768***

Colorado Springs Costs/Fees

	2004
Land Acquisition	$ 14,800
Building Fees	$ 1,151
Use Tax	$ 4,695
Wet Utilities	$ 9,456
Dry Impact Fees	$ 3,232
Additional Building Costs/F	$ -
Total	***$ 33,334***

Greeley Costs/Fees

	2004
Land Acquisition	$ 7,900
Building Fees	$ 1,355
Use Tax	$ 2,186
Wet Utilities	$ 14,802
Dry Impact Fees	$ 5,594
Additional Building Costs/F	$ -
Total	***$ 31,837***

Quick Summary

Baseline 9/8/05		New Cost Scenario			
Households with affordable options	Percentage with affordable options	Households with affordable options	Percentage with affordable options	Change in Households	HAI Change
24,948	60.5%	24,948	60.5%	0	0.0%
80,303	52.3%	80,303	52.3%	0	0.0%
14,010	50.1%	14,010	50.1%	0	0.0%

APPENDIX B.
Data Sources

Data Sources

Exhibit B1 shows all types of data used for the housing affordability index and whether they are fixed or variable across each city. Certain data categories are held fixed across all cities to isolate the effects of impact fees, use tax, building fees, and raw land prices for sensitivity analysis.

Exhibit B1.
Data
Characteristics

Source:
BBC Research & Consulting.

Data Type	*Fixed*	*Variable*
Household Income		✓
Land Acquisition		✓
Carrying Costs	✓	
Building Fees		✓
Site & Lot Development	✓	
Use Tax		✓
Impact Fees		✓
Labor per Unit	✓	
Materials per Unit	✓	
Builder Overhead	✓	
Builder Profit	✓	

Household income distributions. These data were necessary to get a picture of the buying power of the population of Fort Collins and the five comparable cities. Income distribution data was combined with housing cost data to compute the housing affordability index.

What was done in the 1996 study? Data on income distributions was gathered from HUD's Comprehensive Housing Affordability Strategy (CHAS) database for 1990. For 1995, data was obtained from the Colorado Department of Local Government. The data was grouped according to HUD standards. Median family income was gathered from the 1990 Census.

What was done in the 2005 study? Data for the baseline year (1999) was harvested from the HUD CHAS database. Since the CHAS database has not been updated for 2004, BBC obtained the latest household income data from PCensus, a demographic information software package. Median family income for 1999 was gathered from the 2000 Census.

While we were able to obtain an updated household income distribution for 2004, we were not able to determine the tenure status of households in their respective income brackets. To circumvent this problem, we assumed that, in each income category, the same distribution of owners and renters existed as in 2000. We used the 2000 CHAS data to obtain the appropriate tenure mix in each income bracket.

The City of Fort Collins is the home of Colorado State University, and therefore a large student population. The City has a methodology for filtering out the student population from household statistics, since they are not truly permanent City residents. BBC followed the City's methodology for removing the student population from household income distributions in this study.

Interest rates. Interest rate data was obtained from the interest rate page of the Mortgage Bankers' Association of America (MBAA) website (www.mbaa.org). The site includes monthly and annual national average 30-yr fixed rate mortgage information. The interest rate was used to assess the affordability of a single-family mortgage.

What was done in the 1996 study? A 10.25 percent interest rate was used for the starter home model.

What was done in the 2005 study? The MBAA page has average yearly and monthly interest rate data available for the past 15 years. A 30-year fixed rate mortgage was used in the HAI model to accurately reflect the most widely used financing options. The average interest rate in 2004 was 5.78 percent; it was used as the baseline rate of the model.

Development fee data. These data are necessary to calculate the costs associated with residential construction.

What was done in the 1996 study? The Fort Collins Current Planning Department provided these data to BBC. The data included development fee figures for Fort Collins and all peer cities.

What was done in the 2005 study? The City of Fort Collins and the HBA has provided 2004 figures for Larimer and Weld Counties. Longmont (Boulder County) fee data was obtained from the Department of Community Development, City of Longmont. Fee data for Colorado Springs was collected from the Pikes Peak Regional building department and Colorado Springs Utilities. Data for fees in 1999 was obtained by comparing 1995 information to the current data, and calculating growth rates (if any) over time.

Raw land costs. This is an important cost component of the overall consumer housing cost.

What was done in the 1996 study? The Fort Collins Current Planning Department provided these data to BBC. The data included raw land costs for Fort Collins and all peer cities.

What was done in the 2005 study? Raw land costs from the City of Fort Collins were obtained from the BAE Land Bank Feasibility study and from www.coloproperty.com, a Front Range Multiple Listing Service website.

Costs of construction and labor. This is another important cost component of the overall consumer housing cost.

What was done in the 1996 study? The Fort Collins Current Planning Department provided this information for Fort Collins and all peer cities.

What was done in for the 2005 study? This information was obtained through BBC's residential cost survey. Completed cost surveys were averaged to isolate the effects of development fees on housing affordability. At the time of this printing, we have obtained 6 data points for the model. The data points include builder surveys and nationally respected builder cost books from the National Association of Home Builders, and RS Means. Incorporating additional surveys will increase the model's predictive power. The model has been built to allow for the constant addition of new builder surveys.

Home sales data. These data allow BBC to assess the adequacy of the current stock of affordable housing in Fort Collins. Current listings and historical home values are used in the HAI model to determine the affordability of actual homes on the market.

What was done in the 1996 study? The original study did not contain this type of data. The 1996 study did not attempt to make the connection between housing affordability and affordable housing availability.

What was done in the 2005 study? Current home sales data was harvested from www.coloproperty.com, a Front Range Multiple Listing Service website, and from the Pike's Peak Association of Realtors. The market price data include average prices of 1400-1600 square foot detached single family homes. These data were compiled on July 25, 2005 and represent a snapshot of the housing market only.

APPENDIX C.
Builder Cost Survey Instrument

Exhibit 1.
"Starter Home"
Residential Cost
Analysis

Source:
BBC Research & Consulting, Arizona Housing Commission and Nebraska Affordable Housing Commission

Types of Costs	*Cost Amount*	*Cost %*	*Suggested %*
Land Acquisition	$40,000	20 %	%
Carrying Costs	$2,000	1 %	%
Building Fees	$8,000	4 %	%
Site & Lot Development	$18,000	9 %	%
Construction Use Tax	$2,000	1 %	%
Impact Fees	$6,000	3 %	%
Construction Labor for Unit	$46,000	23 %	%
Construction Material for Unit	$50,000	25 %	%
Builder Overhead	$20,000	10 %	%
Builder Profit	$8,000	4 %	%
Total:	$200,000	100 %	100%