PACEY ECONOMICS GROUP
A Corporation
6688 Gunpark Drive, Suite 200 • Boulder, CO 80301 • (303) 530-5333 • fax (303) 530-5371

2001
COLORADO SCHOOL DISTRICT

COST OF LIVING STUDY

Final Report
Methodology and Results by District

December 17, 2001

2001 COLORADO SCHOOL DISTRICT COST OF LIVING STUDY

PREPARED FOR

COLORADO LEGISLATIVE COUNCIL
200 EAST COLFAX AVENUE
STATE CAPITOL BUILDING, ROOM 029
DENVER, COLORADO 80203

PREPARED BY

PACEY ECONOMICS GROUP
6688 GUNPARK DRIVE
SUITE 200
BOULDER, COLORADO 80301

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

APPENDICES:

TABLE OF CONTENTS (cont.)

APPENDICES (cont.):

CHAPTER I.

HISTORY OF COLORADO SCHOOL DISTRICT COST OF LIVING STUDY

Funding for the 178 Public School Districts of the State of Colorado is mandated by the Public School Finance Act of 1994. Each school district's total funding is the product of the number of pupils enrolled in the district and the district's per pupil funding. A school district's per pupil funding formula includes a base funding level, plus components relating to the proportion of the district's total costs attributable to personnel, the district's cost of living factor, the district's size factor, and the size of the district's "at risk" population.

This study addresses the cost of living component in the funding formula and measures the relative differences in the typical "market basket" of goods and services among the 178 school districts in the state of Colorado. As in earlier studies, the 2001 study addresses costs for housing operations, supplies, and maintenance, but does not address the principle, interest, taxes and insurance costs associated with mortgage payments. These costs are identified in a separate study conducted by other consultants. The Colorado General Assembly's Legislative Council combines the district cost of living factors identified by the 2001 study and these mortgage related costs for certification to the Colorado Department of Education.

CHAPTER II:

METHODOLOGY

To appropriately compare changes over time in the cost of living factors for each school district, the study methodology needs to consider the "benchmark" household, identify and weight a similar (but not necessarily identical) "market basket" of goods and services, and collect prices for selected items from a sample of the population of business establishments within the state. Then, the prices for the "market basket" must be tracked to school districts based on shopping patterns of the "benchmark" household, and finally these components are combined to measure the aggregate expenditures for the "benchmark" household.

A. Identifying the "Benchmark" Household

The "benchmark" household is outlined by Legislative Council and consists of a three-person family with a total annual family income of $38,000 (in 2001 dollars). Previous studies considered the same "benchmark" household, recognizing the need to adjust family income levels over time to reflect comparable purchasing power. As such, the household income of $37,000 considered appropriate for the 1999 study has been increased to $38,000 for the 2001 study.

B. Identifying the "Market Basket" of Goods & Services

Conceptually, the "market basket" of goods and services, although generally similar over time, has been subject to revision due to changes in consumer preferences, technological advances, etc. Fortunately, given the short time frame between the 1999 and 2001 studies, the *Bureau of Labor Statistics* (BLS) has not identified any significant changes in consumer preferences or technology. (Of note, if the cost of living studies continue over a long period of time, changes in the "market basket" of goods and services may need to be revisited.)

However, the selection of specific goods and services sampled from the "market basket" may change without altering the comparative attributes of the trend analysis. Expanding the number of items included in the sample from a major expenditure category and/or supplementing subcategories is expected to improve the overall measurement process. Also, eliminating certain items is appropriate if sampled items are duplicative, or if sampling requirements cannot be met. In the 2001 study, the items selected for sampling are and should be:

- a major percentage of the expenditure category;
- sufficiently homogeneous to allow for price comparisons; and

- a product (good), or service that is widely available throughout the state.

As noted above, the items selected for the "market basket" of goods and services are designed to represent the significant components of the typical or "benchmark" household's spending habits. *Bureau of Labor Statistics* (BLS) undertakes detailed statistical analyses of consumer expenditure patterns and these studies are then published annually as the *Consumer Expenditure Survey* (CES). The CES provides information on the buying habits of consumers, including data on expenditures by category, by income, and by composition of the consumer unit (size of family), among other characteristics. The CES identifies average annual expenditures for fourteen major categories across nine income brackets plus family sizes ranging from single persons to as many as five-person families, as well as several additional criteria not considered in this study. Within each of these major categories the CES data includes dozens of specific items, measuring the average annual expenditure for each item and also determining the relative value of each item to overall expenditures, given the composition and income level for the family. See the Appendix for the most recent and relevant *Consumer Expenditure Survey* table.

The specific items selected for price collection in the 2001 study include essentially the same goods and services as incorporated in the 1999 study, but has expanded to include *spaghetti*, *canned green beans*, *canned peaches*, *frozen waffles*, *men's haircuts*, *toothpaste*, and *shaving cream*. The only item excluded from the 2001 study is *apples*, in the subcategory "Fruits and Vegetables" for the major expenditure category Food at Home. For comparison purposes, Table I below identifies the specific items surveyed in the 2001 study as compared to the 1999 study.

TABLE I

Consumer Expenditure Categories and Specific Items Included in Cost of Living Index

Category/Subcategory	2001 Item	1999 Item
Food at Home		
Cereals and bakery products	White bread, Spaghetti	White bread
Meats, poultry, fish and eggs	Ground beef, Fryer chicken	Ground beef, Fryer chicken
Daily products	Milk	Milk
Fresh fruits and vegetables [1]	Potatoes, Bananas	Potatoes, Bananas, Apples
Other food at home	Coffee, Soup, Frozen waffles	Coffee, Soup
Food Away from Home	Cheeseburger Meal, Pizza, Steak Meal	Cheeseburger Meal, Pizza, Steak Meal
Alcoholic Beverages	Beer	Beer
Housing		
Shelter	Mortgage payment/property taxes to be added by Legislative Council Homeowners' insurance Home maintenance/repairs	Mortgage payment/property taxes to be added by Legislative Council Homeowners' insurance Home maintenance/repairs
Utilities	Electric, gas, phone, and water and sewer rates	Electric, gas, phone, and water and sewer rates
Household operations	Day care	Day care
Housekeeping supplies	Laundry soap	Laundry soap
Household furnishings and equipment	Mattress	Mattress

TABLE I

Consumer Expenditure Categories and Specific Items Included in Cost of Living Index

Category/Subcategory	2001 Item	1999 Item
Apparel and Services		
Men and boys	Men's dress shirt, T-shirts	Men's dress shirt, T-shirts
Women and girls	Women's turtleneck, Jeans	Women's turtleneck, Jeans
Footwear	Women's dress shoes	Women's dress shoes
Transportation		
Vehicle purchases (net outlay)	Car payment/Auto financing rate	Car payment/Auto financing rate
Gasoline and motor oil	Unleaded gasoline	Unleaded gasoline
Other vehicle expenses	Oil change Front-end alignment Vehicle Insurance	Oil change Front-end alignment Vehicle Insurance
Healthcare	Health insurance premium	Health insurance premium
Entertainment		
Fees and admissions	Movie	Movie
Television, radios, sound equipment	Color TV	Color TV
Pets, toys, and playground equipment	Pet food	Pet food
Other supplies, equipment & services	Film	Film
Personal Care Products & Services	Women's and Men's haircuts Feminine hygiene product Shaving Cream Toothpaste	Women's haircuts Feminine hygiene product

TABLE I

Consumer Expenditure Categories and Specific Items Included in Cost of Living Index

Category/Subcategory	2001 Item	1999 Item
Reading	N/A	N/A
Education	N/A	N/A
Tobacco Products/Smoking Supplies	King size cigarettes	King size cigarettes
Miscellaneous	N/A	N/A
Personal Insurance and Pensions	N/A	N/A

[1] 1999 Survey = Fruits and vegetables, 2001 Survey = Fresh fruit and vegetables AND Processed fruit and vegetables

C. Weighting the "Market Basket" of Goods & Services

Earlier cost of living studies for the Legislative Council incorporated one of two methods to weight the "market basket" of goods and services to estimate the spending patterns of the "benchmark" household. As a proxy for the spending patterns of the Colorado "benchmark" household, the 1993, 1995, and 1999 studies used the national expenditure profile as developed by the BLS from CES data. However, the 1997 study adopted a "modified" West region rather than the national expenditure profile. The present study and all of the earlier studies should and did assume similar economic and demographic characteristics, i.e., a three-person family with total family adjusted to $38,000 in 2001 dollars such that family income reflects constant purchasing power.

The 1997 study modified the expenditure profile by adjusting the West region expenditure profile to exclude California, given the previous consultants'

expectation of significantly different spending habits in that state compared to the rest of the West region states. In the 1999 study these same consultants evaluated the merits of both methods and concluded that the optimal approach would be to return to using the national average expenditure data. After reviewing the historical information regarding expenditure patterns for the West region vis-à-vis the national patterns, Pacey Economics Group found minimal variation in the major expenditure categories. Consequently, given the nominal differences plus the more lagged and less current availability of West region data, Pacey Economics Group also finds that the national expenditure profile is the optimal proxy for the buying habits of Colorado residents.

Table II below reflects the relative weights for the major expenditure categories and also for the specific subcategories sampled in this study. The table compares the weight or percentage of annual expenditures by category and subcategory relative to overall expenditures for both the 2001 study and the earlier 1999 study. (Dashes in the column for 1999 weights are noted when no specific information was available for a subcategory).

The expenditure levels and relative weights for each category and/or subcategory utilized in this analysis are determined by using the weighted average between the spending data for a three-person household in the CES data with family income of $30,000 to $39,999 and a three-person household in the $40,000 to $49,999 family income bracket. This weighted average most appropriately reflects the probable spending habits of the “benchmark” family with an annual income of $38,000.

TABLE II

***Consumer Expenditure Survey* Categories and Specific Weights Utilized in Cost of Living Index**
(Weight as a percentage of income)

Category/Subcategory	2001 Weight	1999 Weight
Food at Home	**8.88%**	**8.67%**
Cereals and bakery products	**1.40**	1.35
Meats, poultry, fish and eggs	**2.31**	2.11
Beef	1.38	
Poultry	.93	
Dairy products	**.96**	**.93**
Fruits and vegetables	**1.48**	**1.34**
Fresh fruit	.45	-
Fresh vegetables	.42	-
Processed fruit	.34	-
Processed vegetables	.26	-
Other food at home	**2.73**	**2.94**
Food Away from Home	**6.33**	**5.21**
Alcoholic Beverages	**.68**	**.72**
Housing	**31.20**	**31.56**
Shelter	**17.40**	**17.00**
Mortgage interest and charges	13.29	-
Property taxes	2.34	-
Maintenance, repairs, insurance, other expenses	1.77	-
Utilities	**7.03**	**7.43**
Natural gas	.79	-
Electricity	2.79	-
Telephone	2.57	-
Water and sewer	.88	-
Household operations	**1.61**	**2.21**
Housekeeping supplies	**1.31**	**1.32**
Household furnishings and equipment	**3.85**	**3.60**
Apparel and Services	**5.25**	**4.47**
Men and boys	1.41	1.47
Women and girls	2.40	1.98
Footwear	1.44	1.02

TABLE II

Consumer Expenditure Survey Categories and Specific Weights Utilized in Cost of Living Index
(Weight as a percentage of income)

Category/Subcategory	2001 Weight	1999 Weight
Transportation	**20.78**	**22.11**
Vehicle purchases (net outlay)	**9.13**	**10.69**
Gasoline and motor oil	**3.51**	**4.05**
Other expenses	**8.15**	**7.37**
Vehicle finance charges	1.87	-
Maintenance and repairs	2.76	-
Vehicle insurance	3.52	-
Healthcare	**5.39**	**5.60**
Entertainment	**4.88**	**4.54**
Fees and admissions	.90	.98
Television, radios, sound equipment	1.77	1.80
Pets, toys, and playground equipment	.90	.88
Other supplies, equipment and services	1.31	.88
Personal Care Products and Services	**1.29**	**1.67**
Reading	**.37**	**.43**
Education	**1.06**	**.95**
Tobacco Products and Smoking Supplies	**1.05**	**1.02**
Miscellaneous	**3.06**	**2.70**
Personal Insurance and Pensions	**9.80**	**10.36**
TOTALS[2]	**100.02%**	**100.01%**

1 1999 Survey = Fruits and vegetables, 2001 Survey = Fresh fruit and vegetables AND Processed fruit and vegetables.
2 Total does not sum to exactly 100.0% due to rounding.

Of note, not every subcategory within a major expenditure component is represented in the sampling technique. For example, the 2001 detailed CES identifies 5.25% of overall expenditures for the Apparel and Service category where the subcategories include Men and boys, Women and girls, Children under age 2, Footwear, and Other apparel products and services where weights for these subcategories are 1.14%, 1.94%, 1.16%, .45%, and .55%, respectively. Yet the earlier cost of living studies, as well as the 2001 study, does not include sampling a specific item from the Children under age 2 subcategory or the Other apparel products and services subcategory. In order to maintain the appropriate total weight for this major expenditure category, (i.e., Apparel and Services of 5.25%), a reallocation of the internal weights across the three remaining sampled subcategories is necessary. This reallocation process maintains the same relative weights for the items sampled, i.e. approximately one-fourth of the expenditure for Children Under 2 subcategory is apportioned to the Men and boys subcategory, another one-fourth to the Footwear subcategory, and the remaining one-half to the Women and girls subcategory. This method allows for consistency in the relative importance of spending patterns across major expenditure categories. Also, as non-sampled subcategories comprise a small portion of the expenditure category, this methodology should not have any significant impact on the measurement of the overall cost of living factors for each school district.

D. Identifying Vendors/Business Establishments

In addition to determining the specific items to be sampled, identifying the location of all the business establishments across the state is necessary to establish the relevant population from which to obtain a sample. Vendor information is drawn primarily from *Dun & Bradstreet* (D&B) data where vendors are identified by various characteristics including location by city and type of business. This database is supplemented by obtaining QwestDex yellow pages information. A combination of these sources provides the best estimate of the total population of vendors/business establishments for the state of Colorado. From these data

sources, Pacey Economics Group identifies the list of vendors both by city and by major expenditure category to be sampled.

E. Data Collection Procedures

To obtain prices for the selected items in the "market basket" of goods and services, the following three avenues for data collection were undertaken:

- In-person for all items in the major expenditure categories of Food at Home, Food Away from Home, Alcoholic Beverages, Apparel and Services, Tobacco, and Entertainment (with the exception of *movies*), plus the representative item in Housekeeping Supplies (*laundry soap*) and Household Furnishing and Equipment (*mattress*) subcategories;

- Pacey Economics Group surveyed price information by telephone for *men's* and *women's haircuts*, *movies*, *oil changes*, *front-end alignment*, *gasoline prices*, *vehicle loan interest rates* and *bank fees*; and

- Pacey Economics Group obtained data via telephone interviews and/or personal interviews with third parties to obtain price information on *vehicle*, *health*, and *homeowner's insurance premiums* plus *daycare* and *home maintenance* and *repair costs*. Data from the Public Utilities Commission (PUC) was gathered for items in the Utilities subcategory including *electric*, *natural gas*, and *telephone* rates, while local municipalities provided *water* and *sewer charges*.

Notably, the major expenditure categories for Reading, Education, Miscellaneous and Personal Insurance and Pensions are not sampled and are considered constant across all "benchmark" households. Given the nature of these categories, it is reasonable to expect no significant geographic variation across the state for the

"benchmark" household. (This methodology is consistent with the earlier cost of living studies.)

F. Integrating the Shopping Pattern Survey

While price data is primarily collected at the city or county level, school districts do not usually correlate to these geographic boundaries nor is the "benchmark" household likely to confine their buying habits to that of the district in which they live. Consumers have a variety of purchasing options including:

- purchasing costly items such as automobiles from a more populated geographic region;
- consumers living in a school district near a metropolitan area may shop in their school district for some goods and services and in the metropolitan area for other goods and services;
- consumers residing in school districts in more rural areas with a substantial distance from a metropolitan area may still do a significant percentage of their buying in more urban areas.

Clearly, if households shop outside of the school district in which they live, the prices for these commodities need to be tracked to the location of the purchase in order to properly evaluate a cost of living measure for any given school district. To evaluate the shopping patterns of the "benchmark" household, a survey was conducted as part of the 1997 cost of living study. This survey sought to determine the "benchmark" family's spending within and/or outside of the school district in which they reside. This 1997 telephone survey, referred to as the Shopping Pattern Survey, contacted more than 10,700 households across the state to estimate where households in each district purchased selected items from the major expenditure categories. Based upon the household survey responses, the previous consultants developed matrices which rank and apportion shopping

activity by geographic locations for each school district. Based on the expectation of limited changes in the shopping patterns of the "benchmark" household over the past four years and the recommendation from the Legislative Council, the 2001 study continues to utilize these shopping pattern matrices.

Integrating the results of the 1997 shopping pattern survey allows for allocating costs for goods and services to the "benchmark" household in a particular school district in order to more accurately assess the overall annual expenditures for the "market basket". For example, 56 percent of the households residing in the Rangely school district indicated that they purchased groceries most of the time in Grand Junction while 44 percent of the respondents indicated they did most of their grocery shopping in Rangely. Thus, the district average price for Food At Home requires weighting the average price in Grand Junction by 56 percent and the average price in Rangely by 44 percent. The Shopping Pattern Survey provides responses to questions regarding shopping habits for grocery items, dining out at restaurants, and shopping for furniture, clothing, and televisions.

G. Calculating Annual Expenditures

To obtain the annual expenditure for a particular item in a given school district, it is necessary to find the average price of the selected item by city (or county, where relevant), incorporating the appropriate city, county, and/or state tax rates. The average city (county) price of a particular item is aggregated to the relevant school district based either on the weights identified by the shopping pattern survey or by geographical location. This procedure is repeated for each item and category for all 178 school districts.

Once a school district average price for a given item has been determined, a statewide average price by item can be calculated. The statewide average price is based on the average price in each school district weighted by the teacher population for each district. Of note, the 1999 study did not weight the statewide average by the population of each district, but rather considered the statewide

average population to be an unweighted average of all school district prices for each item.

The school district's price for a particular item relative to the statewide average price for that item can then be determined by taking the ratio of the district average price relative to the statewide average price. This ratio is then multiplied by the average annual expenditure for the item per information from the *Consumer Expenditure Survey* regarding the typical expenditures of the "benchmark" household.

This procedure is repeated for each item is then aggregated across the particular school district to obtain the school district's total annual expenditures for a particular category. Total annual expenditures for each district are the summation of annual totals for each major expenditure category.

CHAPTER III:

SPECIFICS OF DATA COLLECTION PROCEDURES FOR MAJOR EXPENDITURE CATEGORIES

Chapter II provided an overview of the on-site and telephone survey methods employed by Pacey Economics Group. Chapter III presents, by major expenditure category, a more detailed description of the sampling procedures followed and discusses relevant adjustments, how and which items required integrating weights from the Shopping Pattern Survey, and also the number of observations collected for each category and/or subcategory.

A. Description of Items Selected for the "Market Basket"

Table III provides a detailed description of each item considered in the "market basket" of goods and services purchased by the "benchmark" household.

TABLE III

Description of Goods and Services by Major Expenditure Category

GROCERY ITEMS	DESCRIPTION
Potatoes……..	Price for a 10 lb. bag of lowest price Russet potatoes. If 10 lb. bag is not available, substitute nearest sack size. DO NOT USE PRICE OF POTATOES BY THE POUND.
Bananas……..….	Price per pound. If bananas are priced by the bag or by the banana, report the price and weigh a bunch.
Canned Green Beans…….……..…	Price of store brand cut green beans, 14.5 oz.
Canned Peaches……..…….	Price of store brand sliced peaches in heavy syrup, 15.25 oz.
Ground Beef…….……...	Price per pound of regular ground beef, 80% lean or most comparable. Note if different percent lean. Average size package, loose pre-packaged, i.e., 1 to 2 pound package. DO NOT PRICE FAMILY PACK.
Chicken, whole fryer…….…….	Price per pound of one whole fryer chicken. If whole fryer not available, price whole fryer chicken, cut up. Least expensive brand.
White Bread……	Price for store brand 24 oz. (1.5 lb.) loaf of sliced white bread. If store brand not available, record price of lowest priced brand.
Spaghetti…….	Price of store brand spaghetti noodles, 16 oz. package. If store brand is not available, record price of lowest priced brand.
Coffee…….….	Price for a 39 oz. can of Folgers Classic Roast Coffee, ground, red can. DO NOT PRICE DECAFFINATED.
Soup…….……....	Price for a 10 ¾ oz. can of original Campbell's Chicken Noodle Soup. Not "HomeStyle" or "Classic" packaging or other variations.
Milk…….…	Price for one gallon (128 Fl. oz.) 2% milk, store brand or lowest price.
Frozen Waffles…….……..	Price of 10 waffles, buttermilk or plain flavored, store brand, pre-baked, 12.3 oz.
Shaving Cream…….……..	Price of Colgate regular shaving cream 11.0 oz.

TABLE III

Description of Goods and Services by Major Expenditure Category

GROCERY ITEMS (cont.)	DESCRIPTION
Toothpaste……...……	Price of Crest regular Paste Tartar Protection 6.4 oz.
Tampons…….……	Price for one box of 20 Tampax Regular Absorbency (not the slender style.) Note if different size box.
Laundry Soap…….…….	Price for 100 Fl. oz. of Tide liquid household laundry detergent. If Tide is not available, price of Cheer.
Pet Food…….…….	Price for a 5.5 oz. can of Friskies cat food. If Friskies not available, price of 9 Lives or Whiskas.
Camera Film…….……..	Price for 35mm, 24 exposure, 200 ASA Kodak camera film
Beer……...……..	Price for a 6-pack of 12 oz. cans Coors Light or Original beer, 3.2% alcohol by volume.
Cigarettes…….……..	Price for one carton (200 cigarettes) of Winston Filter, king size, soft pack cigarettes.
RESTAURANTS	
Lunch……...	Price for cheeseburger, French fries and regular Coke.
Dinner…….…….	Price for pepperoni pizza, regular or thin crust, 14” diameter (note size if other).
Dinner…….…….	Price for 12 oz. New York Strip steak, potato, soup or salad, and coffee. If New York strip not available, price Sirloin or Ribeye. Note size of steak if not 12 oz. *DO NOT PRICE CHOPPED SIRLOIN.*

TABLE III

Description of Goods and Services by Major Expenditure Category

APPAREL	DESCRIPTION
Men's Dress Shirt…….……..	Price for white or solid color Oxford (button-down collar), long sleeve, button cuff shirt. Arrow brand where possible, poly/cotton blend. If store does not have Arrow, price comparable label (inexpensive).
Men's T Shirt…...…….……..	Price for one 3-pack of men's white t-shirts, v-neck. Hanes brand where possible, Fruit of the Loom or Jockey, otherwise 100% cotton. Must be in a 3 pack.
Women's Turtleneck…….……..…	Price of long sleeve turtleneck shirt, black, store label, with minimum trim. Poly/cotton blend if available. If there is no store label, price least expensive brand.
Women's Jeans…….…….…….	Price of Lee Jeans, relaxed fit, not shone washed, 5-pocket. The "Circle-X" label where possible, "Riders" otherwise. If Lee not available record brand and price of least expensive store brand.
Women's Shoes…….…….	Price of black leather women's pump, 1" heel, no trim, store brand, size 7 ½, with leather uppers and sole. If store has no brand label, price least expensive brand.
HOUSING ITEMS	
Homeowners' Insurance…….	$100,000 frame dwelling built in 1970. $80,000 contents coverage, $100,000 liability/medical payments. $250 deductible
Day Care Services…….	Price of daycare for a 3-year-old child for one month. Assume, 5-day week, approximately 8 hours per day. If a monthly rate is not available, please indicate weekly or daily rate. If monthly, weekly, or daily rates not available, indicate hourly rate. *SPECIFIY PRICING INCREMENT (MONTHLY, WEEKLY, DAILY, HOURLY)*
Mattress……..	Price of Queen size mattress. Sealy Posturepedic with 736 coils where possible. *If not available*, price Simmons Beautyrest with 759 coils, then SpringAir with 700 coils, then Serta with 800 coils. Price full set (mattress / box spring.) *Find out if price includes bed frame and delivery in local area. If not, get prices for frame and delivery.*

TABLE III

Description of Goods and Services by Major Expenditure Category

TRANSPORTATION	DESCRIPTION
Car……..	1999 Honda Civic LX Sedan, 4-door. Engine: 4-cyl. 1.6 liters. Trans: 5-speed manual. Mileage: 24,000. Amenities: air conditioning, pwr. steering, cruise control, AM/FM cass. stereo, air bags
Truck……..	1995 Ford Ranger XL Long Bed Pickup. Engine: V6 4.0 liter, Trans: 5-speed manual, Drive: 2-wheel drive. Mileage: 60,000. Amenities: A/C, pwr. steering, cruise control, AM/FM cass. stereo, no air bags
Oil and Filter Change…….	Price of an oil and filter change for a 1995 Ford Ranger pickup. Oil must not be synthetic; filter should be the least expensive available.
Front-End Alignment……..	Price of front-end alignment for a 1995 Ford Ranger pickup; 2 wheel drive.
Gasoline……..……..……	Price of self-serve, 85 Octane, unleaded gasoline.
Vehicle Financing……...	Interest rate on loan for full purchase price and bank charges for 1999 Honda Civic for four years.
Vehicle Insurance……	Insurance premiums for 1995 Ford Ranger and 1999 Honda Civic
ENTERTAINMENT	
Color Television…….	Price of 20 inch, RCA TV with remote control, sleep timer, stereo sound. *If RCA is not available, price Philips or Philips/Magnavox. DO NOT PRICE TV/VCR COMBINATION.* Note the model number.
Movie…….	Price of adult admission to a first-run, full-length movie.

B. Sampling Techniques/Procedures by Major Expenditure Category

Below is a detailed discussion of the techniques/procedures followed to obtain the aggregate prices for each of the major expenditure categories. Following this discussion are three tables which summarize, for each major expenditure category, the sampling technique, the method for aggregating prices to the district level, and how many observations were collected.

1) Food At Home

As described previously, all food at home items were collected through in-person visits to stores throughout the state. A random sample of grocery outlets was obtained from the *Dun & Bradstreet* data set, including selection of various discount retailers now selling food items, such as Wal-Marts and K-Marts. In addition, the random sample also included warehouse type outlets such as Sam's Club. If it was determined that the *Dun & Bradstreet* data did not identify enough vendors to meet the sampling requirement in a particular city, then the list of stores to be sampled was supplemented with information from QwestDex yellow pages. This method of supplementing the *Dun & Bradstreet* data was also used for all other categories in which in-person or telephone surveying was completed.

The number of outlets sampled in the 2001 study was, at a minimum, the number of outlets sampled in each city for the 1999 study. This approach was taken as it is understood that during the 1999 study, it was determined that in smaller locations at least one-half of the vendors would be sampled. This standard was met, with a few exceptions when in small towns a store/business had closed (i.e., Siebert). Also, the number of overall observations collected was increased for the larger cities.

The pricing data collected was ultimately aggregated to the district level by integrating the weights from the Shopping Pattern Survey responses.

2) Food Away from Home

Food away from home prices were also collected through in-person visits to dining establishments. As the *Dun & Bradstreet* data did not provide an automated way to identify which restaurants served the particular items sampled (i.e., which restaurants served pizza, cheeseburgers, and/or steaks), a randomly ordered list of dining establishments was prepared for each city. Surveyors were then responsible for collecting, at a minimum, the same number of observations collected in 1999 in each city for pizza, cheeseburgers, and steaks. They were also responsible for surveying the appropriate type of restaurant, i.e., not fast food or take-out type of restaurants, and supplemented the price data collection with additional establishments, when possible.

When reviewing the data collected, some prices for meals in the resort towns such as Vail, Breckenridge, or Steamboat Springs were not used in the final calculations. The significantly higher prices for these meals (especially steak dinners) indicated that they were not comparable items and were not likely to be the typical dining choice for the "benchmark" family identified in this study.

The average prices for each item were aggregated to the school district level by using the Shopping Pattern Survey. The Shopping Pattern Survey asks respondents specifically where they would normally "dine out at restaurants." However, there were a few discrepancies when applying the Shopping Pattern data for the Food Away From Home items, especially with regard to pizza. For example, some respondents indicated that they would normally eat out at a restaurant in Sedgwick, yet an in-person visit and follow-up telephone calls revealed there was not a restaurant in Sedgwick where pizza could be purchased. (It could be that in earlier years a restaurant which served pizza was available.) However, in this instance, the Shopping Pattern responses were re-weighted to reflect the responses for all the other cities identified for the district, without the responses for Sedgwick related to pizza.

3) Alcoholic Beverages

Beer prices and food at home items were collected at the same time and utilized the same methodology. Thus, for the most part, beer prices were collected at grocery stores. In addition, in generating the random sample of establishments to be sampled for beer prices, convenience stores were included. The inclusion of convenience stores allowed for a significant increase in the sample size for beer prices, especially in the small towns where the local grocer often did not sell beer.

Again, average beer prices for each city were aggregated to the district level by integrating the results of the Shopping Pattern Survey.

4) Housing

The Housing component included the major subcategories of shelter and utilities.

Shelter

The Shelter subcategory estimated the cost of housing which included *mortgage payments, property taxes, homeowner's insurance*, etc. While Pacey Economics Group provided raw data concerning homeowner's insurance premiums, the annual costs associated with home mortgage payments is handled separately by the Legislative Council and was not addressed in the 2001 study or in any previous cost of living study.

As with previous cost of living studies, Pacey Economics Group conducted telephone interviews with various banking institutions and mortgage lenders to confirm that mortgage rates offered in the state do not typically vary by geographic location. For the most part, nationwide institutions, such as mortgage brokers or large banks handle mortgage lending needs. Thus, rates are not expected to vary within smaller geographic areas, given that local lenders do not have much control over the supply of funds available for lending. Further confirmation of this principle came from research which indicated that over one-

half of consumers do, in fact, obtain mortgage loans through mortgage brokers rather than traditional banking institutions.

Homeowner's Insurance

The available data from the Colorado Division of Insurance indicated that there were over 700 companies authorized to provide *homeowner's insurance* within the state of Colorado (although approximately fifty companies were actively involved in the state). Pacey Economics Group surveyed four of the major providers of coverage where these four companies account for nearly 60% of the market share in Colorado. The description of coverage requested considered information on the cost (premium) for a $100,000 frame dwelling built in 1970 with $80,000 of contents coverage, $100,000 liability/medical coverage, homeowner's hazard insurance, and a $250 deductible. The premium information was provided to us such that county costs could be identified and these costs were then easily tracked to the relevant school districts.

Maintenance and Repairs

The Shelter subcomponent also included the costs for *household maintenance and repairs*. These costs were evaluated and measured in the 2001 study. In order to gain a better understanding of the type of services and the relative amounts spent on such services by the typical household, we relied upon a survey published by the *Bureau of Census*. This *Bureau of Census* information, referred to as *Expenditure for Residential Improvements and Repairs*, details expenditures by type of service for owner-occupied properties over the past eight years.

This data source provided information regarding the typical costs residents spent on maintenance and repairs such as painting, plumbing, heating/air conditioning, electrical, and other miscellaneous services. After reviewing the trend over time for these costs, Pacey Economics Group determined that the 2000 data and costs were consistent with historical trends. Given this information, we considered the relative weights of each item as a percentage of the total spending on maintenance and repairs in order to identify the services which were most relevant to the 2001 cost of living study. As the 2001 study needed to identify maintenance and repair costs for the "benchmark" household by school district, it was important to recognize that costs for certain services such as plumbing, heating, electrical among other services, were likely to vary by geographic location. Consequently, adjustments for the local area wage rates were necessary to best measure these costs by school district.

The first step in analyzing these costs was to determine the relative importance of each service, e.g., painting, plumbing, electrical, etc. in terms of overall average expenditures, and then identify the relative importance to maintenance and repair costs. For example, painting was approximately 30 percent of the total maintenance and repair costs that a typical family incurred, while plumbing and roofing each represented just over 10 percent of these total costs for a typical household.

Once relative weights for the services were determined, Pacey Economics Group obtained regional wage data by occupation for the state of Colorado. The *Occupational Employment Statistics* (OES) dataset provided wage information for specific occupations such as plumbers, painters, roofers, basic maintenance and/or general labor workers, etc. in addition to sorting these wages by six different regions within the state. These wage levels and their relative differences across the regions of the state were used as a

proxy for measuring the relative costs of household maintenance and repairs. Overall costs for the maintenance and repairs component were measured by region and then mapped into the appropriate school districts.

Utilities, Fuels, and Public Services

The subcategory referred to as Utilities, Fuels and Public Services represented the average annual bill for electric, natural gas, telephone, and water and sewer services for each of the 178 school districts. The methodology used to compile these four expenditure subcategories is described below.

Electricity

Electricity service price data utilized in this study was obtained from the PUC plus information from a supplemental telephone survey. Like the natural gas bill, the average monthly electricity bill was calculated based on annual filings with the PUC by electricity providers concerning their revenues and average number of customers. Therefore, the data utilized in this analysis contained all monthly base fees and usage fees that a customer would have to pay for electricity service. Unlike natural gas providers, electricity providers only file one average statewide bill with the PUC rather than an average bill for a particular city or area. Telephone calls were made to several of the providers to obtain information on company service areas. Also, supplemental telephone calls were made to several towns to identify electricity providers for certain areas. Once an average monthly electricity bill was calculated for each city/school district, applicable taxes were applied.

Additionally, a few of the municipalities provide electric service to their residents. When the data was obtained either from documents or by telephone, it was utilized to compute an average monthly bill; however, if no information could be obtained, the average monthly bill of the nearest town was used.

Natural Gas

Natural gas service data was obtained from the PUC plus a supplemental telephone survey. Specifically, the average monthly bill was calculated based on the annual filings with the PUC by natural gas providers concerning their revenues and average number of customers. Therefore, the data utilized in this analysis contains all monthly base fees and usage fees that a customer would have to pay for natural gas service. Additionally, with the exception of smaller towns, a natural gas provider has to report this information separately for each community it services, allowing for optimal measurement of the natural gas bill for a particular area. Also, telephone calls by Pacey Economics Group were made to several of the providers to obtain information on company service areas and supplemental telephone calls were made to several towns to identify natural gas providers for certain areas. Once an average monthly natural gas bill was calculated for each city/school district, applicable taxes were included.

As would be expected, several areas and/or school districts do not have natural gas service available and instead utilize propane gas. These geographic areas were confirmed via telephone survey. Pacey Economics Group performed a survey of propane dealers around the state and information was gathered concerning the usage of propane gas in place of natural gas. To calculate an average monthly "imputed" natural gas bill for those areas without natural gas service, the state was divided into regions and an average was taken for propane service in that region based on

price/cost information from the propane dealers surveyed. Additionally, as with electric, a few of the municipalities provide natural gas services to their residents. On some occasions, the data for these towns was not available and a telephone survey was done to obtain the necessary data. If the data could be obtained, it was utilized to compute an average monthly bill, but if not, the average monthly bill of the nearest town, no matter the provider, was used.

Telephone

Telephone rates used in this analysis were based directly on information from the Public Utilities Commission (PUC) on each company's rate for basic residential telephone service for the year 2000. Of note, telephone companies have a single rate for all customers across the state, with the exception of Century Tel, which has three rate classes depending on location. Additionally, a telephone company has to file a petition with the PUC to change its basic residential rate, although no company applied for an adjustment in the year 2001. Therefore, rates were identified as those for the year 2000 but would also be correct for the year 2001. Once the rates were obtained, the provider for cities and school districts were then identified given data from the PUC and a supplemental telephone survey.

In addition to a customer's basic service, it was necessary to add a number of charges to more accurately reflect a monthly telephone bill. These charges were the high cost surcharge, TDD/TRS charge, and the FCC subscriber line charge, and were consistent charges throughout the state. Two additional charges that change, depending on geographic location, were the 911 surcharge and, of course, applicable taxes. Information to track 911 surcharges with counties and cities was obtained from the PUC and supplemental telephone calls were also made to several counties to obtain clarification. (Of note, the telephone companies also have a

monthly "distance charge" which varied depending on the household's proximity to a call center. This charge was expected to be, on average, similar for all "benchmark" households and, hence, was not incorporated into this analysis.)

Water and Sewer

Water and sewer service rates were calculated based on an extensive telephone survey of water and sewer providers across the state of Colorado. The survey resulted in over 500 water and sewer observations, which was considerably more than the previous survey. This survey was performed by Pacey Economics Group and data obtained on each provider's particular charges included flat fees, usage fees, drainage fees, base fees, etc. An average monthly water bill was calculated based on 6,000 gallons of water consumption in an average month. The sewer bill was also calculated based on 6,000 gallons of average usage in a month, and together these two components comprise the water/sewer bill. Once this total was calculated, applicable tax rates were included.

The telephone survey for this component identified several towns and/or school district areas that do not have sewer and/or water service available and instead utilize drinking wells and septic tanks. A proxy value was imputed for these towns or areas to recognize that there are costs involved with wells and septic tanks, although they are usually much more infrequent than the monthly costs identified for those towns with water and sewer service. The proxy value utilized in this analysis was the cost for water and/or sewer service for the nearest town.

Household Operations – Day Care

Day care costs incorporated in this study were based on information provided by the *Colorado Office of Resource and Referral Agencies, Inc*. (CORRA). CORRA conducted a study in the Spring/Summer of 2001 from which they obtained day care costs for services across the state, and this data, as in earlier cost of living studies, was utilized in our 2001 study. CORRA identified the average weekly wage for childcare services provided by childcare centers and by family licensed providers in each county. However, three counties in the state did not have any observations (Costilla, Hinsdale and Kiowa). In these three cases, the counties were linked to counties with cities nearby that would most likely provide services to that particular county.

We have utilized data gathered by CORRA which reflected average weekly prices for children age 3 to 4 requiring daily care. The weekly costs for each observation were converted to a monthly cost (multiplying the weekly cost of care by 52 weeks per year and divided by 12 months).

For the purposes of our study, there was not specific differentiation between childcare centers and family licensed providers. However, it may be more likely that family licensed providers will be prevalent in less populated, rural areas whereas childcare centers may be more prevalent in areas with higher populations.

Housekeeping Supplies

The representative item sampled for the Housekeeping Supplies subcategory was *laundry soap*. Prices were collected at the same time and using the same methodology identified for food at home (grocery) items. Thus, for the most part, prices were collected at grocery stores, as well as general discount retailers such as Wal-Mart and Target stores.

Again, average *laundry soap* prices for each city were aggregated to the district level by using the results of the Shopping Pattern Survey.

Household Furnishings and Equipment

Mattress prices were collected in-person and gathered for the cities in which respondents to the Shopping Pattern Survey indicated they shopped for home furnishings. Pacey Economics Group had a staff person visit several stores in the Denver metropolitan area prior to actual price collection activities in order to gather information and detailed descriptions about comparable mattress brands and their specific coil counts, if available. Thus, as can be seen in the detailed item descriptions from Table III, three specific brands of mattresses were identified as relatively comparable items which were expected to be commonly available.

Of course, given the characteristics of this item, not every store offered exactly the brand and/or coil counts we had identified in the "market basket". Thus, surveyors were instructed to ask for assistance from salespersons in order to obtain prices for comparable items if the specific brand requested was not available. Again, after the data collection was completed, there were some observations which were eliminated given that their price was substantially higher than the other observations, indicating that they were not, in fact, comparable items or not likely purchases for the "benchmark" household.

The average city prices were then aggregated to the district level using the Shopping Pattern Survey.

5) Apparel and Services

Apparel prices were gathered in-person for the cities in which respondents to the Shopping Pattern Survey indicated they did their clothing shopping. In comparison to the 1999 survey, the 2001 survey includes not only more clothing observations from discount outlets such as Wal-Mart and Target stores, but also increases in the overall number of observations was still larger than previously sampled for each apparel item.

The Shopping Pattern Survey asked respondents specifically where they would purchase "long pants." However, the market basket for which prices were collected included Men's Dress shirts and T-shirts as well as Women's Turtleneck, Jeans, and Shoes. This difference in relevant item descriptions created a few discrepancies when applying the shopping pattern data for clothing items. For example, some respondents indicated that they would buy long pants (clothing) in Julesburg. However, despite an in-person visit and follow-up telephone calls, Women's shoes which match the description of that in the "market basket," were simply not available for sale. In that instance, the shopping pattern responses were re-weighted to reflect the responses for all the other cities identified, without the responses for Julesburg.

6) Transportation

Vehicle Purchases

The purchase price of the 1999 Honda Civic was the base price used to determined annual car payments. The actual purchase price is assumed to be constant throughout the state, as had been done in previous cost of living studies. The actual purchase price for the car amounted to $14,850 per blue book information. Financing rates for vehicle loans were obtained from telephone surveys of banking institutions and credit unions throughout the state. The list of banking institutions to survey came from information provided by the *Federal Deposit Insurance Corporation* (FDIC) and National Credit Union Administration

(NCUA) which provided market share information for the institutions. Financing rates were based on a four year loan for a 1999 Honda Civic. This data was gathered on a county basis and then mapped to the district level to obtain the rate for each district.

Average monthly car payments were then calculated, given the total amount financed (including the purchase price, all bank loan charges, and any applicable tax and registration fees) and the interest rate charged by the bank or credit union.

Gasoline and Motor Oil

Unleaded grade 85 octane gasoline was identified as the item to represent this category. Given this item was easily defined without differences in quality and was widely available, even in very rural locations, we were able to sample at the city level. Due to gasoline price fluctuations even over short periods of time, Pacey Economics Group sampled via telephone across the state in one day. All gasoline prices were surveyed on October 2, 2001. To the extent that gasoline prices have fallen since this date, Pacey Economics Group expected that decreases should be relatively similar across the state. The average gas prices by city were then mapped into the appropriate district to arrive at district average prices.

Other Vehicle Expenses

Maintenance and Repairs

Prices for *front-end alignments* and *oil changes* for the "benchmark" household's 1995 Ford Ranger were gathered through telephone surveys of various businesses throughout the state. Again, a randomly ordered list of the automobile service providers was generated from the *Dun & Bradstreet* data and supplemented with QwestDex data if not enough observations were obtained to meet the sampling requirement. The average prices for front-end alignments and oil changes were calculated at

the county level and then mapped into the appropriate school district. In a few of the very rural counties we were unable to obtain a front-end alignment price observation, i.e., Hinsdale county. In this instance, Gunnison county was utilized because it was the nearest locale where the family would most likely obtain these services.

Vehicle Insurance Premiums

Information on the cost of automobile insurance premiums were gathered through telephone inquiries by Pacey Economics Group to insurance companies that provide automobile coverage.

Automobile insurance coverage prices were based on the cost for the "benchmark" household to insure two vehicles. The first vehicle is considered to be a 1999 Honda Civic LX Sedan, 4 door, 4 cylinder, 1.6 liter, 5-speed manual transmission equipped with air conditioning, power steering, power windows and door locks, tilt wheel, cruise control, AM/FM cassette stereo, and dual air bags. The mileage on this vehicle was considered to be 24,000 and the request was for comprehensive coverage with liability policy limits of $25,000, $50,000, and $15,000 with a $250 deductible and 15,000 miles per year of usage. The second vehicle for which coverage was requested was considered to be a 1995 Ford Range XL, long-bed pick-up with a V6, 4.0 liter engine, and 5-speed manual transmission. This truck was also to be V6, two-wheel drive, and equipped with air conditioning, power steering, cruise control, AM/FM cassette stereo, but no air bags. The request was for liability coverage only with liability policy limits of $25,000, $50,000, and $15,000 with 15,000 miles per year usage on a truck with 60,000 miles on the odometer.

While there were approximately 700 companies authorized in the state of Colorado to offer automobile insurance, there were

approximately four companies that made up nearly 50 percent of all coverage offered in the state. Pacey Economics Group contacted these four companies and acquired information from two of these major vehicle insurance providers. These insurance companies provided data which could be tracked to counties, and thus allowed the auto insurance costs to be mapped into the relevant school districts.

7) Health Care

The seven largest health care insurance companies in the state of Colorado were contacted for premium information for the "benchmark" family. While HMO, PPO, and Indemnity coverage are offered in the Denver and Colorado Springs metropolitan areas, individuals in rural areas have access to only PPO and Indemnity plans. Although the seven largest companies per information from the Division of Insurance were contacted, four companies provided data to Pacey Economics Group. Two companies provided PPO and/or Indemnity premium information that covered the entire state of Colorado, while two other companies provided HMO premium information for the metropolitan areas. These four carriers represent approximately 42 percent of the market share in Colorado.

The health care premiums were gathered on a county basis and then aggregated to the district level to obtain the average rate for each school district.

8) Entertainment

Fees and Admissions

Movie prices were collected by telephone survey for adult admission prices at the county level, given that many rural towns do not have a movie theater. For counties which did not have a movie theater, i.e., Washington county, the county

data for the nearest location the family would likely travel to see a movie is applied. For instance, average movie price data for Logan county was also used to represent the average movie price for Washington county. The county averages for movie prices were then mapped to the appropriate school district.

Television, Radios, Sound Equipment

Television prices were sampled in-person, according to the cities in the Shopping Pattern Survey responses for which residents indicated they would purchase televisions. Television prices were then aggregated to the district level based on the Shopping Pattern Survey. In some instances, prices which were significantly higher than typical findings were excluded, as they were not likely comparable products.

Pets, Toys, and Playground Equipment

Pet food prices were sampled in-person at the same time grocery prices were collected. City averages were then aggregated to the district level based on the Shopping Pattern Survey.

Other Supplies

Camera film prices were sampled in-person at the same time grocery prices were collected. City averages were then aggregated to the district level based on the results of the Shopping Pattern Survey.

9) Personal Care Products and Services

Men and women's haircut prices were sampled by telephone survey at the county level. Average prices by county were then aggregated to the district level.

The personal care items such as tampons, toothpaste, and shaving cream were collected in-person along with the grocery items. The average city prices for each item were then aggregated to the district level using the results of the Shopping Pattern Survey.

10) Tobacco

Cigarette prices were collected in person along with the other grocery items. As with beer prices, cigarette prices from convenience stores were also included in the sample. Average city prices were then aggregated to the district level using the Shopping Pattern Survey.

11) Reading, Education, and Miscellaneous Expenses

As mentioned previously, it was determined, as was done by previous contractors, that these categories do not necessarily vary by geographic location in the state. Thus, expenditures for these categories were constant across all districts and reflect the typical family's spending level on these items per the *Consumer Expenditure Survey*.

The following table summarizes the method used to obtain data for each category.

TABLE IV

Data Sources and Notes for Pricing Data Collection

Category/Subcategory	Data Sources	Notes
Groceries…….	In-person survey	Random sample supplemented with most prominent outlets in each city
Furniture……..	In-person survey	same as above
Clothing……...	In-person survey	same as above
Television……	In-person survey	same as above

TABLE IV

Data Sources and Notes for Pricing Data Collection

Category/Subcategory	Data Sources	Notes
Restaurants……..	In-person survey	Random sample, narrowed by selecting appropriate outlets based on menu and type of restaurant
State and Local Taxes……..	Department of Revenue report on July 2001 tax rates by city and county	
Utilities		
Water/Sewer……..…	Telephone survey of municipal service providers	
Electric, gas, and phone….....	PUC data with supplemental telephone calls	
Mortgage Rates…..……..…..	Data compiled by bank holding companies, supplemental phone calls	Mortgage lending rates do not vary by location – variance is in points and origination fees
Auto Finance Rates…….……..	Telephone survey of banks and credit unions	
Auto Insurance…….…….	Regional rates from state's largest carriers	
Home Maintenance……...…...	Occupational wage rates from Colorado Department of Labor and Employment	
Health Insurance…….……....	Geographic ratings from large carriers	
Vehicle Maintenance…..……	Telephone survey	
Unleaded Gasoline…….	Telephone survey	
Registration and title fees……..	Department of Revenue data	
Auto Use Tax……	Department of Revenue report on July 2001 tax rates	Annualized by capitalizing in payment
Movies……..	Telephone survey	

TABLE IV

Data Sources and Notes for Pricing Data Collection

Category/Subcategory	Data Sources	Notes
Day Care……..	Colorado Resource Referral Agency	Based on licensed day care centers and in-home providers
Men's and Women's Haircut....	Telephone survey	
Homeowners' Insurance……...	Geographic rates from state's largest carriers	

Table V summarizes how the prices of each item in the "market basket" were aggregated to the appropriate school district level.

TABLE V

Price Collection Method/Aggregation to the School District Level

Item	Aggregated To District By:
Grocery items…..……..…	Weighted average by shopping pattern survey
Furniture……	Weighted average by shopping pattern survey
Apparel……..	Weighted average by shopping pattern survey
Television…….	Weighted average by shopping pattern survey
Restaurants……..…….	Weighted average by shopping pattern survey
Utilities	
Water/Sewer…..……..…….....	City average
Electric, gas and phone…...……..	City average
Mortgage Rates…..……..….	Same for all districts

TABLE V

Price Collection Method/Aggregation to the School District Level

Item	Aggregated To District By:
Auto Finance Rates……..	County average
Auto Insurance…….	Regional rates from state's largest carriers
Home Maintenance……..	Occupational wage rates by region (county) mapped to district level
Health Insurance……..	Geographic ratings from large carriers
Vehicle Maintenance……...	County average
Unleaded Gasoline……...	City average
Movies…….....	County average
Day Care…….……	County average
Men's and Women's Haircuts……....	County average
Homeowner's Insurance……..……...	Geographic rates from state's largest carriers

The number of observations collected for each component in the "market basket" of goods and services can be found in Table VI. Considering all categories, over 10,700 individual item price observations were collected by in-person visits or telephone survey for use in the 2001 cost of living study (not including data gathered from third parties). There were approximately 7,300 individual item price observations collected for the study in 1999, recognizing that most of the difference was related to the greater number of items surveyed in the 2001 "market basket".

TABLE VI

Number of Observations for Items Sampled In-Person or by Telephone Survey in 2001 Study

ITEM	NUMBER OF OBSERVATIONS IN 2001 STUDY	NUMBER OF OBSERVATIONS IN 1999 STUDY
GROCERY ITEMS		
Potatoes……	304	334
Apples……..….	-	148
Bananas…….…..…..	308	330
Canned Green Beans……..…	345	-
Canned Peaches…….……	329	-
Ground Beef……..	307	330
Chicken, whole fryer…….……	303	325
White Bread……...	348	327
Spaghetti……...…….	328	-
Coffee……...…….	363	333
Soup……..……	354	335
Milk……...……	353	336
Frozen Waffles…….…….	307	-
Shaving Cream…….……..	374	-
Toothpaste…….……	382	-
Tampons……...…….……	386	368
Laundry Soap……...	378	371
Pet Food…….…...	377	335
Camera Film……..	381	364
Beer……..……..	321	265
Cigarettes…….……..	381	346
RESTAURANTS		
Cheeseburger Meal……...	429	386
Pizza..……..…….….	228	181
Steak Meal…..……..…….…….	361	343
APPAREL		
Men's Dress Shirt……..	154	117
Men's T Shirt……...….	161	125
Women's Turtleneck…….	187	156
Women's Jeans……..	180	156
Women's Shoes…….	153	113

TABLE VI

Number of Observations for Items Sampled In-Person or by Telephone Survey in 2001 Study

ITEM	NUMBER OF OBSERVATIONS IN 2001 STUDY	NUMBER OF OBSERVATIONS IN 1999 STUDY
FURNISHINGS		
Mattress……	94	94
TRANSPORTATION		
Oil and Filter Change……...…….	293	254
Front-End Alignment…...……..	178	144
Gasoline…….……	371	323
Vehicle Financing…...……...	210	?
ELECTRONICS		
Color Television……...…….	161	133
HAIRCUTS		
Women's Cut and Dry……..	462	409
Men's Cut and Dry……	462	-

CHAPTER IV:

SUMMARY OF ANNUAL EXPENDITURES BY DISTRICT WITH STATISTICAL ANALYSIS / CONFIDENCE INTERVALS

As in earlier cost of living studies sponsored by the Legislative Council, the 2001 study estimates the overall annual expenditures of the "benchmark" household, as well as annual expenditures by category for each school district within the state of Colorado. Table VII presents the results for the 2001 Colorado School District Cost of Living Study. This table identifies the average annual expenditures by major category for the "benchmark" household for each school district. Of note, in addition to "point estimates" for overall expenditures and for major categories by school district, Table VII also provides 95 percent confidence intervals. This confidence interval is identified both in absolute dollars and in percentage from the point estimate. (To determine the limits of the confidence interval, simply add or subtract the size of the interval from the category expenditure estimate.) Also, Appendix I provides both the point estimates and 95 percent confidence intervals (again in both absolute dollars and percentage) for the major expenditure categories for each of the school districts.

As with all estimation techniques, there is always a component of "error" inherent in the analysis. Confidence intervals measure the reliability of a point estimate, and in this case, it is for a particular major category or for the overall annual expenditures. Standard interpretation of a 95 percent confidence interval would indicate that with continuous draws of random samples of the same size and in the same manner as outlined in this report, 95 percent of the time the "true" number of dollars spent for a category (or total annual expenditures) would be contained

within the confidence interval. Therefore, the smaller the width of the confidence interval, the more "confidence" that the estimate reflects the "true" value.

As expected, confidence intervals in the urban, more populated districts across the state are smaller than those in the rural districts. The greater variance in the rural districts is largely related to small sample size issues rather than any problems associated with the sampling methodology. Not surprisingly, items with little variation (such as food at home, personal are items, etc.) have smaller variances and thus, the confidence intervals are relatively narrow. Other items with larger variances (e.g. mattresses, televisions, apparel items) have much wider confidence intervals. A review of the overall expenditure variance estimates and confidence intervals again show narrower confidence intervals for the urban districts as compared to the rural districts for the reasons identified above.

Statistical methods required to measure the confidence intervals for each component and also for overall expenditures are highly technical and are discussed in detail in the Appendix. However, in general, the measurement of a confidence interval requires determining the variance in the ratio of the district average price to the statewide average price, recognizing that both components contribute variability to the estimate of this ratio. The measure of the variances is further complicated because of the overlapping spending patterns of the "benchmark" household across districts, which means that the school districts are not independent of each other. Consequently, as the statewide average price is a weighted average of the district prices, a "covariance" factor must be included in the calculations.

The statistical results of the 2001 study are not directly comparable to the 1999 statistical results for several reasons. Most importantly, the 1999 study does not provide confidence intervals at the district level but rather, provides confidence intervals for six selected cities across the state. Also, the 2001 study uses a higher level of statistical significance, i.e., 95 percent vis-à-vis 90 percent confidence intervals. Thus, not only will this higher level of statistical significance always result in wider confidence intervals but also school district is a different measurement entity than the city measure used in the 1999 study. Finally, the

2001 study considers a weighted statewide average a more appropriate measure than the simple statewide average that was utilized in the 1999 study. As the statewide average price is a major component in the calculation of variances and covariances, the 2001 results are not directly comparable to the 1999 study.