

Alaska Geographic Differential Study

2008



Prepared by:



Prepared for:

State of Alaska
Department of Administration

April 30, 2009

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Prepared by:



In association with:

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ECONOMICS • FINANCE • PLANNING

GMA RESEARCH
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Section I:

Executive Summary

Executive Summary

Introduction

In September 2008, the Alaska Department of Administration contracted with McDowell Group, an Alaska research firm, to conduct a comprehensive, statistically reliable study comparing the cost of living in Anchorage with other communities and regions throughout Alaska. The purpose of the study was to identify differences in the cost of living that could affect pay equity among state employees living in different areas of the state.

Prior to this study, the most recent statewide cost of living study in Alaska was conducted by McDowell Group in 1985. That study produced cost of living differentials for Alaska's 19 House election districts as they were defined at that time.

This report presents the results of the 2008 study and provides geographic cost of living differentials for a number of unique geographic differential "pools" (GDPs), including the same 19 districts examined in the 1985 study, 18 pools defined for purposes of this study, and 12 individual communities.

Methodology

The study involved two primary research tasks, a Household Consumption Survey (HCS) and a Retail Price Survey (RPS). The HCS provided data on the relative importance of various components of the household budget (housing, food, transportation, etc.) and how consumption varies from community to community. The RPS provided data on how the prices for items in the household budget differ between various communities and Anchorage. It is the blend of HCS and RPS data – the combination of consumption differences and price differences – that produces the geographic cost differential.

HOUSEHOLD CONSUMPTION SURVEY

The HCS included 2,547 surveys with randomly selected households in 74 communities throughout Alaska. Sample "blocks" were defined for purposes of sample distribution and to ensure sufficient sample sizes in various regions and among communities with common demographic and geographic characteristics. The largest communities (Anchorage, Fairbanks and Juneau) and the most populous boroughs (Mat-Su and Kenai Peninsula) were each assigned their own sample blocks. Smaller communities that were similar in terms of location and/or size were grouped together, and household surveys were distributed within that sample block in proportion to each community's population.

RETAIL PRICE SURVEY

The RPS included 634 retail outlets in 58 communities throughout Alaska, plus numerous providers of various services, including health care, transportation, communications, insurance, and others. Each of the items in a household market basket of approximately 200 goods and services was priced in each community where the item was available.

Findings

Geographic cost of living differentials for various GDPs and communities are presented in the following tables. As the base community, Anchorage is assigned a cost differential of 1.00. Differentials for GDPs and other communities provide a measure of the cost of living relative to Anchorage. For example, Kodiak's differential of 1.12 means that the cost of living in Kodiak is about 12 percent higher than in Anchorage. Similarly, the Palmer/Wasilla differential of 0.95 means the cost of living there is about 5 percent lower than in Anchorage.

As described above, the HCS sample blocks were defined so that communities with common demographic and geographic characteristics were grouped together. In particular, sample blocks were chosen to avoid mixing dissimilar communities, especially small rural communities with larger urban areas.

Cost differentials for each of the 18 sample blocks are provided in the following table. Some sample block definitions are identical to the 1985 GDS districts (Juneau, Kodiak, and Mat-Su). Others are similar, such as Fairbanks. However, in the 1985 GDS, the Fairbanks GDP included several small outlying communities, including Fort Yukon, while the 2008 sample block definition includes only the Fairbanks North Star Borough. Communities included in each 2008 sample block are identified in the introduction, following this executive summary.

Table I-1: Geographic Cost Differentials, 2008 Sample Blocks

Sample Block #	Sample Block	2008 Differential
1	Anchorage	1.00
2	Fairbanks	1.03
3	Parks/Elliott/Steese Highways	1.00
4	Glennallen Region	0.97
5	Delta Junction/Tok Region	1.04
6	Roadless Interior	1.31
7	Juneau	1.11
8	Ketchikan/Sitka	1.09
9	Southeast Mid-Size Communities	1.05
10	Southeast Small Communities	1.02
11	Mat-Su	0.95
12	Kenai Peninsula	1.01
13	Prince William Sound	1.08
14	Kodiak	1.12
15	Arctic Region	1.48
16	Bethel/Dillingham	1.49
17	Aleutian Region	1.50
18	Southwest Small Communities	1.44

In addition to the 18 sample blocks identified above, differentials were also calculated for 12 individual communities. Each of these communities is included in one of the 18 sample blocks, but in combination with one or more other communities. HCS sample sizes in these communities were large enough to allow for meaningful community-level cost of living analysis.

**Table I-2: Geographic Cost Differentials,
2008 Selected Communities**

Community	2008 Differential
Barrow	1.50
Bethel	1.53
Cordova	1.13
Dillingham	1.37
Homer	1.01
Ketchikan	1.04
Kotzebue	1.61
Nome	1.39
Petersburg	1.05
Sitka	1.17
Unalaska/Dutch Harbor	1.58
Valdez	1.08

A comparison of cost differentials for 2008 and 1985 for the districts as they were defined in 1985 (which followed election district boundaries) is instructive. In general, the 2008 *Geographic Differential Study* indicates that since 1985, communities outside Alaska's Railbelt and off the Alaska road system have seen greater increases in living costs relative to Anchorage. The most remote districts have experienced the largest relative increases. The most populated areas outside of Anchorage, including Mat-Su, the Kenai/Soldotna area, and Fairbanks have differentials very similar to those identified in the 1985 study.

See table next page.

Table I-3: 2008 Geographic Cost Differentials, with 1985 Comparisons

1985 District #	1985 District Name	2008 Differential	1985 Differential	Change
1	Ketchikan/Prince of Wales	1.04	1.02	+0.02
2	Petersburg/Wrangell	1.04	0.98	+0.06
3	Sitka	1.17	1.01	+0.16
4	Juneau	1.11	1.03	+0.08
5	Icy Strait/Lynn Canal	1.06	1.05	+0.01
6	Cordova/Valdez	1.05	1.11	-0.06
7	Palmer/Wasilla	0.95	0.94	+0.01
8	Anchorage	1.00	1.00	0.00
9	Seward	1.03	1.00	+0.03
10	Kenai/Cook Inlet	1.01	1.01	0.00
11	Kodiak	1.12	1.06	+0.06
12	Aleutian Islands	1.49	1.26	+0.23
13	Bristol Bay	1.37	1.29	+0.08
14	Bethel	1.53	1.39	+0.14
15	Yukon/Kuskokwim	1.16	1.29	-0.13
16	Fairbanks/Fort Yukon	1.02	1.03	-0.01
17	Barrow/Kotzebue	1.55	1.45	+0.10
18	Nome	1.37	1.33	+0.04
19	Wade Hampton	1.48	1.26	+0.22

Recommendations

How the State of Alaska chooses to use the geographic cost of living differentials measured in this study is primarily a matter of policy. However, the study team offers the following recommendations:

- Depart from the current plan that groups communities and assigns pay differentials primarily according to election district boundaries. This study has shown that significant variation in the cost of living exists within election districts.
- Initiate a policy of regularly updating the geographic cost differentials. This study has shown that differentials do change over time (especially in remote areas). The State might also consider conducting a near-term update (within a year or two) depending on trends in fuel prices.
- Consider defining GDPs such that communities (or sample blocks) within each GDP have cost of living differentials that do not differ from each other by a statistically significant amount. An example of such GDPs is provided in the following table.

Table 1-4 shows the five groupings that result if all the community-level differentials calculated for the study are grouped together based on a statistical test for significant differences among those differentials. These are purely mathematical groupings that ignore geography. For example, all the communities and regions in GDP #1 have differentials calculated for this study at between 0.95 and 1.05. Statistically, the differentials in GDP #1 are not meaningfully different from each other due to the degree of uncertainty inherent in survey research. The differentials for GDP #1 are, however, statistically different from those in the other four GDPs shown.

Table I-4: Statistically-Based Geographic Cost Differential Pools

2008 GDP #	Sample Blocks and/or Communities	Minimum Differential	Maximum Differential
1	Anchorage, Delta Junction/Tok Region, Fairbanks, Glennallen Region, Kenai Peninsula, Ketchikan, Mat-Su, Parks/Elliott/Steese Highways, Southeast Mid-size Communities, Southeast Small Communities	.95	1.05
2	Cordova, Juneau, Kodiak, Sitka, Valdez	1.08	1.17
3	Dillingham, Nome, Roadless Interior	1.31	1.39
4	Barrow, Bethel, Aleutians (other than Unalaska/Dutch Harbor), Southwest Small Communities	1.44	1.53
5	Kotzebue, Unalaska/Dutch Harbor	1.58	1.61

Note: There is no statistically meaningful difference in the measured cost of living differential among communities within each GDP.

Using GDPs that are defined in purely statistical terms has a number of attractions:

- The method is straightforward to explain.
- It acknowledges that there is uncertainty associated with calculating GDPs.
- It is easier to administer because of the small number of GDPs.

However, the challenge for the state is to determine how best to set actual pay differentials for each GDP. Grouping communities into statistically-based GDPs may result in pay differentials higher than warranted for some employees in any given pool and lower than warranted for others. Setting a pay differential for GDP 3 at 1.39, for example, would insure that no one in that group is potentially under-compensated, relative to their estimated cost of living differential, but it would certainly be the most costly approach in terms of total state payroll. Other options include using the mid-point between the minimum and maximum differential in each GDP or, more equitably, using the weighted average differential for each GDP (weighted by the number of state employees in each community within the GDP). The weighted average approach produces a differential of 1.11 for GDP 2, 1.37 for GDP 3, 1.50 for GDP 4 and 1.60 for GDP 5.

The cost and equity implications (in terms of state salaries) of the various options are important, but beyond the scope of this study.

Note on Seattle's Cost Differential

The 2008 Alaska GDS methodology did not include household surveying or retail price surveying in Seattle. This is due in part to the cost and complexity of surveying in a very large urban area, which would be vastly out of proportion to the number of Alaska state employees who reside in Seattle (five). Another reason is that

other data already exists for estimating cost of living differentials between Anchorage and Seattle. Available data and other analysis, described in detail in this report, indicate the cost of living in Seattle and Anchorage are now about equal, unlike 24 years ago when Anchorage was significantly more expensive than Seattle.

Section II: Introduction

Introduction

The challenge before the State of Alaska is how to equitably remunerate state employees living throughout Alaska in exchange for the services they provide. McDowell Group's 1985 *Alaska Geographic Differential Study* served as the benchmark for most state salary differential adjustments. However, changes in the economies of all of the state's regions in the past 23 years have rendered the objective data from the 1985 study obsolete.

Alaska is unique among the 50 states in its geographic, climatic, economic, social, cultural, and lifestyle diversity. State employees are located throughout Alaska, in major cities as well as remote villages. Many small communities have a limited selection of goods and services available to support households. Transportation linkages and market size efficiencies can dramatically affect the price of the same item in different locations, even in locations close to one another. Climate can dictate household purchasing patterns, with residents of different areas consuming different household market baskets. Income differences between the state's bustling urban economies and struggling rural regions also significantly influence the makeup of household budgets. For example, expenditures on food require a higher proportion of income in economically depressed regions, while spending on recreation and entertainment tends to be much lower. Alaskans (including state employees) simply do not – and in many cases cannot – live in Barrow, Klawock or even Cordova the same way Alaskans live in Anchorage.

The 1985 geographic differential pools (GDPs) were based on Alaska's 19 election districts. Current Senate districts (20), House districts (40), and Census Areas/Boroughs (27) are more commonly used divisions for analyzing the state. However, the major factors that determine differences in household costs – market size efficiencies, road access, shipping distance and method, competition, climate, economic conditions, for example – do not conveniently confine themselves to district boundaries.

In September 2008, the Alaska Department of Administration contracted with McDowell Group, an Alaska research firm, to conduct a comprehensive, statistically defensible cost of living analysis in Alaska. The purpose of the study was to compare the cost of living in regions and communities throughout Alaska to the cost of living in Anchorage, and from that analysis, calculate geographic cost differentials.

It is important to understand what this study does not do. For example, this study does not place an absolute measure on the cost of living in any particular place; it only measures the difference in the cost of living between Anchorage and other communities where state employees reside. Further, this study does not measure changes in the cost of living over time, i.e., inflation. There is only one reliable measure of inflation, and that is the Anchorage Consumer Price Index (CPI), which is updated semi-annually. Finally, the 2008 Alaska GDS does not determine if state employee pay levels are too high, too low, or on par with past pay levels. This study only indicates how pay levels should vary relative to Anchorage to account for differences in living costs experienced by state employees residing elsewhere in Alaska.

The 2008 Alaska Geographic Differential Study was conducted by McDowell Group in association with ECONorthwest (database management and statistical analysis) and GMA Research (urban telephone survey research).

Report Organization

The report includes seven major segments:

- I. **Executive Summary**
- II. **Introduction** (including a definition of terms and geographic definitions)
- III. **Study Results by Sample Block and Community** (one-page summaries of expenditure weights and price differentials for each sample block and for selected communities)
- IV. **Methods and Analysis** (an overview of study methods, detailed methods and results for each main household budget component for each sample block)
- V. **Data Collection Methodology** (detailed discussion of the methodologies employed on the Household Consumption Survey and the Retail Price Survey)
- VI. **Statistical Analysis** (discussion of the statistical reliability of the cost of living differentials measured in this study)
- VII. **Appendix** (bibliography, survey instruments and related information).

Definitions

Geographic Differential Pools (GDPs): Collections of communities grouped together for purposes of administering geographic pay differentials. Historically, GDPs have been defined by election district boundaries, with minor variations.

Household Consumption Survey (HCS): The HCS included 2,547 telephone surveys with randomly selected households located in 74 communities. The HCS collected data on household spending related to housing (including mortgage and rent payment, property taxes, insurance and all utilities), food, transportation, health care, and clothing. The survey was fielded during October and November 2008.

Retail Price Survey (RPS): The RPS included 634 retail outlets in 58 communities, plus numerous providers of various services, including health care, transportation, communications, insurance, and others. A market basket of approximately 200 goods and services was priced in each community where they were available. Data was collected in person and by telephone.

Expenditure Weights: A measure of the relative importance of various components of the household budget. The HCS and secondary data provided measures of the relative importance of various components of the household budget and how the importance of those components varies from community to community. The HCS provided measures of expenditure weights in 18 categories of household spending. Data from the Consumer Price Index was used to develop expenditure weights in four additional categories.

Price Differentials: The difference in prices between Anchorage and other communities in Alaska. Price differentials for specific items or services are calculated by dividing an item's average price in a particular community by the average price of the same item in Anchorage.

Sample Blocks: Sample blocks were defined for purposes of household survey sample distribution to ensure sufficient sample sizes in various regions and among communities with common demographic and geographic characteristics. The largest communities (Anchorage, Fairbanks and Juneau) and most populous boroughs (Matanuska-Susitna and Kenai Peninsula) formed their own sample blocks. Smaller communities, similar in terms of location or size, were grouped together into sample blocks, and household surveys were distributed within those blocks in proportion to each community's population. The communities included in each sample block are identified in the following table.

Table II-1: 2008 Geographical Differential Study Sample Blocks

Sample Block #	Sample Block Name	Sample Block Communities
1	Anchorage	Municipality of Anchorage
2	Fairbanks	Fairbanks North Star Borough
3	Parks/Elliott/Steese Highways	Healy, Cantwell, Central, Nenana, Manley Hot Springs, Talkeetna
4	Glennallen Region	Glennallen, Chitina, Paxson, Slana, Tazlina
5	Delta Junction/Tok Region	Delta Junction, Tok, Eagle, Northway
6	Roadless Interior	Galena, Fort Yukon, McGrath
7	Juneau	City and Borough of Juneau
8	Ketchikan/Sitka	Ketchikan Gateway Borough, City and Borough of Sitka
9	Southeast Mid-Size Communities	Craig, Haines, Klawock, Metlakatla, Petersburg, Wrangell
10	Southeast Small Communities	Hoonah, Skagway, Yakutat, Elfin Cove, Gustavus, Pelican, Tenakee Springs
11	Mat-Su	Matanuska-Susitna Borough (not including Talkeetna)
12	Kenai Peninsula	Kenai Peninsula Borough
13	Prince William Sound	Cordova, Valdez, Whittier
14	Kodiak	Community of Kodiak (does not include remote Borough communities)
15	Arctic Region	Barrow, Kotzebue, Nome, Teller
16	Bethel/Dillingham	Bethel, Dillingham
17	Aleutian Region	Adak, Cold Bay, King Cove, Sand Point, Unalaska/Dutch Harbor
18	Southwest Small Communities	Aniak, Anvik, Chignik, Emmonak, Goodnews Bay, Iliamna, King Salmon, Saint Mary's, Unalakleet

1985 GDS Districts: The 1985 Alaska Geographic Differential Study was required to consider the cost of living in each of Alaska's 19 official 1961 House Election Districts. Those districts and communities contained therein are defined in the following table. (Note: Not all communities located in each district are listed, only those where survey research was conducted in the 1985 study are shown.)

Table II-2: 1985 Geographical Differential Study Districts

District #	District Name	District Communities
1	Ketchikan/Prince of Wales	Ketchikan, Craig, Klawock
2	Petersburg/Wrangell	Petersburg, Wrangell, Kake
3	Sitka	Sitka, Angoon
4	Juneau	Juneau
5	Icy Strait/Lynn Canal	Yakutat, Haines, Hoonah, Skagway, Gustavus
6	Cordova/Valdez	Cordova, Valdez, Chitina, Glennallen, Tazlina, Gulkana, Slana
7	Palmer/Wasilla	Palmer, Wasilla, Big Lake, Willow, Talkeetna, Sutton
8	Anchorage	Anchorage
9	Seward	Seward, Moose Pass, Cooper Landing, Hope
10	Kenai/Cook Inlet	Homer, Kenai, Ninilchik, Soldotna, Sterling, Kasilof, Anchor Point, Halibut Cove, Seldovia
11	Kodiak	Kodiak, Karluk
12	Aleutian Islands	Unalaska, Sand Point, Cold Bay, St. Paul Island, Atka, Chignik
13	Bristol Bay	Naknek, King Salmon, Iliamna, Dillingham
14	Bethel	Bethel
15	Yukon/Kuskokwim	Aniak, Holy Cross, Grayling, McGrath, Healy, Cantwell, Galena, Manley Hot Springs, Rampart, Ruby, Nenana, Clear, Tanana, Nulato
16	Fairbanks/Fort Yukon	Fairbanks North Star Borough, Tok, Northway, Delta Junction/Ft. Greely, Fort Yukon, Eagle
17	Barrow/Kotzebue	Barrow, Kotzebue, Selawick, Noorvik, Ambler
18	Nome	Nome, Unalakleet, Gamble, Savoonga, Teller, Shishmaref
19	Wade Hampton	Mountain Village, St. Mary's

Section III: Results by Sample Block and Community

Sample Block and Community Selection

In order to determine how to distribute the overall HCS sample among all the communities that needed to be examined, communities with similar demographic and geographic characteristics were grouped together into sample blocks. Each sample block was allocated a sufficiently large sample size to allow the analysis to make meaningful comparisons between blocks. The largest communities (Anchorage, Fairbanks and Juneau) and the most populous boroughs (Mat-Su and Kenai Peninsula) formed their own sample blocks. Smaller communities that were similar in terms of location, access and/or size were grouped together. Combining smaller communities was necessary to insure statistically reliable survey sample sizes. Within each block, community-level samples were drawn so as to be proportional to community population.

Using sample blocks to determine sample distribution was deemed preferable to the 1985 method of sampling according to election districts because the blocks can be formulated to minimize grouping dissimilar communities, especially small rural communities with larger urban areas.

The Matanuska-Susitna Borough was treated as one sample block, with the exception of Talkeetna which was grouped with Parks/ Elliot /Steese Highways sample block. The most important reason for keeping Mat-Su largely intact as a sample block is the ease of access throughout the borough. In general, residents of any portion of the borough where state employees reside (other than Talkeetna) can work and shop in any other portion of the borough (or, for that matter, work and shop in Anchorage).

The Kenai Peninsula Borough was also treated as one sample block, recognizing that by calculating cost of living differentials by 1985 GDS districts would produce one differential for Seward alone and another differential for the remainder of the borough (collectively labeled “Kenai/Cook Inlet” in the 1985 study). A separate differential was originally calculated for Homer, but turned out to be essentially the same as the differential for the remainder of the Borough. Seldovia, which has air and water access only, might warrant its own differential. However, with only one state employee in the community in 2008, a separate analysis of the cost of living in that small community was not practical.

Though Southeast Alaska accounts for only about 10 percent of Alaska’s population, the region was divided into four sample blocks due to its high level of socioeconomic and geographic diversity. Juneau, as the region’s largest city and capital of Alaska, was its own sample block. Ketchikan and Sitka were grouped together because of their apparent similarities (though subsequent analysis indicted the two communities are dissimilar in terms of cost of living). Other communities in the region were divided among two sample blocks, with larger communities (Petersburg, Wrangell, Haines, etc.) in one and smaller communities (Hoonah, Yakutat, Skagway, etc.) in another. Four sample blocks in Southeast is warranted because the isolation of communities relative to one another (i.e., there is no road access between most communities), the existence of five borough governments in the region and two large census areas not within borough boundaries. The region also has highly variable local housing markets.

The Kodiak sample block includes only the community of Kodiak and therefore its differential does not necessarily represent remote communities within the borough.

The Prince William Sound sample block groups Valdez, Cordova and Whittier together. The study team recognized that Valdez, with highway access, and Cordova, with air and water access only, could have different cost of living differentials. However, survey sample sizes were sufficient to allow for analysis of each community alone.

Cost of living differentials were also calculated for 12 other individual communities. Each of these communities is included in one of the 18 sample blocks, but HCS sample sizes in these communities were large enough to allow for meaningful community-level cost of living analysis. Smaller communities were not analyzed in a similar fashion because small survey sample sizes would preclude meaningful estimates.

Sample Block and Community-Level Differentials

Geographic cost of living differentials for 2008 sample blocks and for larger communities are presented in the following table. The cost differential for Anchorage, the base community, is set at 1.00. Differentials for GPDs and other communities provide a measure of the cost of living relative to Anchorage. For example, Kodiak's differential of 1.12 means that the cost of living in Kodiak is about 12 percent higher than in Anchorage. Similarly, the Mat-Su differential of 0.95 means that the cost of living there is about 5 percent lower than in Anchorage.

Table III-1: Geographic Cost Differentials, 2008 Sample Blocks

Sample Block #	Sample Block	2008 Differential
1	Anchorage	1.00
2	Fairbanks	1.03
3	Parks/Elliott/Steese Highways	1.00
4	Glennallen Region	0.97
5	Delta Junction/Tok Region	1.04
6	Roadless Interior	1.31
7	Juneau	1.11
8	Ketchikan/Sitka	1.09
9	Southeast Mid-Size Communities	1.05
10	Southeast Small Communities	1.02
11	Mat-Su	0.95
12	Kenai Peninsula	1.01
13	Prince William Sound	1.08
14	Kodiak	1.12
15	Arctic Region	1.48
16	Bethel/Dillingham	1.49
17	Aleutian Region	1.50
18	Southwest Small Communities	1.44

In addition to the 18 sample blocks identified above, differentials also were calculated for 12 individual communities. These communities are included in one of the 18 sample blocks, but in combination with one or more other communities. HCS sample sizes in these communities were large enough (generally above 40 surveys) to allow for statistically meaningful community-level cost of living analysis.

This community-level analysis indicates that even among communities very similar in size, location, and access, there can be a difference in the cost of living. For example, Ketchikan and Sitka share many common geographic, economic, and demographic characteristics; combined, the Ketchikan/Sitka GDP has a cost differential of 1.08. However, analysis of Ketchikan and Sitka individually resulted in differentials of 1.03 and 1.16, respectively. The same situation is evident in the Prince William Sound sample block, where Valdez and Cordova have measurably different differentials.

**Table III-2: Geographic Cost Differentials,
2008 Selected Communities**

Community	2008 Differential
Barrow	1.50
Bethel	1.53
Cordova	1.13
Dillingham	1.37
Homer	1.01
Ketchikan	1.04
Kotzebue	1.61
Nome	1.39
Petersburg	1.05
Sitka	1.17
Unalaska/Dutch Harbor	1.58
Valdez	1.08

The following table compares cost differentials for 2008 and 1985 for the districts as they were defined in 1985 (along election district boundaries). This comparison indicates that, since 1985, communities outside Alaska's Railbelt and off the Alaska road system have seen greater increases in living costs relative to Anchorage. The most remote districts have experienced the largest relative increases. The most populated areas outside of Anchorage (Mat-Su, the Kenai/Soldotna area, and Fairbanks) have differentials very similar to those identified in the 1985 study. Increases in other areas, such as Juneau and Sitka, are the result of rising housing costs.

See table next page.

Table III-3: 2008 Geographic Cost Differentials, with 1985 Comparisons

1985 District Number	1985 District Name	2008 Differential	1985 Differential	Change
1	Ketchikan/Prince of Wales	1.04	1.02	+0.02
2	Petersburg/Wrangell	1.04	0.98	+0.06
3	Sitka	1.17	1.01	+0.16
4	Juneau	1.11	1.03	+0.08
5	Icy Strait/Lynn Canal	1.06	1.05	+0.01
6	Cordova/Valdez	1.05	1.11	-0.06
7	Palmer/Wasilla	0.95	0.94	+0.01
8	Anchorage	1.00	1.00	0.00
9	Seward	1.03	1.00	+0.03
10	Kenai/Cook Inlet	1.01	1.01	0.00
11	Kodiak	1.12	1.06	+0.06
12	Aleutian Islands	1.49	1.26	+0.23
13	Bristol Bay	1.37	1.29	+0.08
14	Bethel	1.53	1.39	+0.14
15	Yukon/Kuskokwim	1.16	1.29	-0.13
16	Fairbanks/Fort Yukon	1.02	1.03	-0.01
17	Barrow/Kotzebue	1.55	1.45	+0.10
18	Nome	1.37	1.33	+0.04
19	Wade Hampton	1.48	1.26	+0.22

Record-high fuel prices in 2008 may be responsible for some of the increase in the cost of living in Alaska's more remote areas, relative to Anchorage. Rising fuel prices affect urban and rural households, but not necessarily to the same degree. An increase in gas prices from \$1.50 per gallon to \$3 per gallon in Anchorage may translate into a price increase in Bethel from \$3 per gallon to \$6 per gallon. The increase in Bethel takes a much bigger bite out of the household budget than does the increase in Anchorage. Sharp increases in 2008 in home heating oil would have especially disproportionate effects on small, remote communities. The study team tested the sensitivity of geographic cost differentials to lower fuel prices by measuring the effect of a one-third reduction in household expenditures on home heating fuel and fuel for vehicles, coupled with a hypothetical reduction in the fuel price differential of about 20 percent. The results of this test suggest that for regions with the largest differentials, a substantial reduction in fuel prices could result in differentials of 0.02 to 0.05 lower than measured in this study. This finding should be interpreted with caution, however, as much more detailed analysis would be required to definitively determine the effect of fuel prices lower (or higher) than those prevalent at the time of this study.

Discussion of Statistical Considerations

While the geographic cost differentials presented in this report suggest a high level of precision, it is important to acknowledge the uncertainty associated with any analysis based on survey research. In fact, there is some degree of uncertainty around each of the cost differentials, depending on sample size and the magnitude of the differential. For example, for Juneau, with its relatively low cost of living differential (1.11) and large sample size (300 households), the approximate standard error is relatively small and, thus, the precision of the estimate is relatively high. The 95 percent confidence interval extends from approximately 1.08 up to 1.14. In contrast, the 95 percent confidence interval for the Aleutians differential (1.50) is

relatively wide, extending from approximately 1.42 up to 1.58. This is due to the larger cost of living differential and smaller sample size (77 households) for the Aleutians sample block.

In addition to the statistical uncertainty attributable to sample size and statistical random error, the HCS and RPS research methodology is subject to inherent uncertainty from sources such as the following:

- The ability of survey respondents to answer questions about spending and income accurately.
- The degree to which the choice of items and services in the market basket accurately reflects people's overall spending patterns.
- The accuracy with which price data from a given retail outlet within a community reflects the proportion of purchases people make at that particular outlet or at those specific prices.

Using telephone survey research to measure household spending patterns is a challenging task due to the complexity of the issue and recall limitations. Some respondents will overestimate their spending on food (for example), while some respondents will underestimate. With a large enough sample size, however, the average will be an accurate representation of household spending on food.

The most important consideration is to avoid any data collection bias that systematically influences survey respondents from a particular community to overstate or understate some aspect of their spending *relative to Anchorage survey respondents*. For example, an accurate measure of household spending on food in a particular community is important, but not as important as making sure that whatever measure of food spending is found accurately reflects the difference compared to Anchorage household spending on food. In other words, accurate absolute values are not as important as accurate relative values.

Finally, in reviewing the detailed data tables presented in this and following sections of the report, readers may occasionally note values that appear to be outliers or in some way counterintuitive. In all cases, data used for the analysis has been reviewed and determined to be the most representative available within the limitations of the methodology employed. The methodology systematically aggregates results from areas with small sample sizes in order to minimize statistical anomalies, but it cannot eliminate them altogether.

In summary, the highest degree of professional standards were applied at all stages of this project to ensure that the estimated cost of living differentials are unbiased measures of the true cost of living differentials experienced by communities throughout the state.

Sample Block and Community Cost of Living Profiles

Following this overview are one-page geographic cost of living profiles for each sample block and for selected communities. Each profile provides a description of the communities contained in each sample block (if more than one community), the population of each community, and the number of state employees residing in each community. The profiles provide expenditure weights and price differentials for each of the 22 household budget subcategories.

To calculate the cost of living differential for each sample block and community, expenditure weights for each subcategory are multiplied by the price differential for each subcategory to produce category cost differentials. These category cost differentials are then added to produce a single cost of living differential.

It is important to note that, unlike other categories, the housing category differential was not calculated from its subcategory (shelter and utilities) expenditure weights and price differentials. Therefore, weights and price

differentials for shelter and utilities reported in the following tables, while valid, cannot be used to calculate the overall housing category differential. This is because housing differentials were calculated as the ratio of total housing costs in the sample block to total housing costs in Anchorage. Differences in the price of rent, home heating oil, electricity, property taxes, insurance, etc., between sample blocks and Anchorage are reflected in that ratio. A detailed discussion of the housing cost methodology is provided in Section IV.

Sample block communities: Municipality of Anchorage

Description: Largest Alaska city and economy; most comprehensive availability of goods and services

2007 Population: 283,823

2008 State employee count: 5,940

Table III-4: Anchorage

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.33	1.00	0.33
Shelter	0.27	1.00	
Utilities	0.06	1.00	
Food	0.17	1.00	0.17
Meats, poultry and fish	0.05	1.00	
Cereals and breads	0.02	1.00	
Dairy products	0.02	1.00	
Fruits and vegetables	0.03	1.00	
Other food items	0.03	1.00	
Food away from home	0.03	1.00	
Transportation	0.15	1.00	0.15
Fuel	0.05	1.00	
Car/truck ownership	0.03	1.00	
Other vehicle ownership	0.00	1.00	
Auto insurance	0.02	1.00	
Vehicle maintenance	0.02	1.00	
Interstate air travel	0.02	1.00	
In-state air/ferry travel	0.00	1.00	
Clothing	0.02	1.00	0.02
Medical	0.05	1.00	0.05
Medical services	0.02	1.00	
Medical insurance	0.03	1.00	
Other	0.29	1.00	0.29
Household furnishings/appliances	0.09	1.00	
Communication	0.04	1.00	
Recreation and education	0.09	1.00	
Personal care and other	0.06	1.00	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.00

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Fairbanks North Star Borough, including City of Fairbanks, North Pole, and surrounding area

Description: Alaska's second largest economy

2007 Population: 90,963

2008 State employee count: 1,615

Table III-5: Fairbanks

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.31	0.98	0.30
Shelter	0.22	0.84	
Utilities	0.09	1.65	
Food	0.16	1.03	0.16
Meats, poultry and fish	0.04	1.07	
Cereals and breads	0.02	1.03	
Dairy products	0.02	1.03	
Fruits and vegetables	0.03	1.00	
Other food items	0.03	1.01	
Food away from home	0.02	1.02	
Transportation	0.21	1.04	0.22
Fuel	0.07	1.03	
Car/truck ownership	0.06	0.96	
Other vehicle ownership	0.01	0.99	
Auto insurance	0.03	0.89	
Vehicle maintenance	0.02	1.05	
Interstate air travel	0.03	1.39	
In-state air/ferry travel	0.00	1.00	
Clothing	0.02	1.17	0.02
Medical	0.05	1.07	0.05
Medical services	0.02	1.18	
Medical insurance	0.03	1.00	
Other	0.25	1.05	0.27
Household furnishings/appliances	0.08	1.11	
Communication	0.03	1.01	
Recreation and education	0.08	1.07	
Personal care and other	0.05	0.97	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.03

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Parks/Elliott/Steese Highways

Sample block communities: Healy, Cantwell, Central, Nenana, Manley Hot Springs, Talkeetna

Description: Small communities along the Parks Highway

2007 Population: Cantwell (183), Central (95), Healy (1,027), Nenana (357), Manley Hot Springs (72), Talkeetna (848)

2008 State employee count: Cantwell (14), Central (4), Healy (9), Nenana (7), Manley Hot Springs (2), Talkeetna (9)

Table III-6: Parks/Elliott/Steese Highways

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.23	0.75	0.17
Shelter	0.11	0.51	
Utilities	0.12	1.94	
Food	0.16	1.10	0.18
Meats, poultry and fish	0.04	1.10	
Cereals and breads	0.02	1.08	
Dairy products	0.02	1.12	
Fruits and vegetables	0.03	1.10	
Other food items	0.02	1.11	
Food away from home	0.02	1.10	
Transportation	0.20	1.10	0.22
Fuel	0.06	1.22	
Car/truck ownership	0.04	1.01	
Other vehicle ownership	0.00	1.02	
Auto insurance	0.04	0.90	
Vehicle maintenance	0.02	1.09	
Interstate air travel	0.03	1.27	
In-state air/ferry travel	0.01	1.00	
Clothing	0.01	1.11	0.01
Medical	0.10	1.05	0.11
Medical services	0.05	1.12	
Medical insurance	0.06	1.00	
Other	0.29	1.06	0.30
Household furnishings/appliances	0.09	1.08	
Communication	0.04	0.99	
Recreation and education	0.10	1.07	
Personal care and other	0.06	1.04	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.00

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Glennallen Region

Sample block communities: Glennallen, Chitina, Paxson, Slana, Tazlina

Description: Small and mid-size Interior Alaska communities on the southeastern portion of the road system

2007 Population: Glennallen (1,845), Chitina (124), Paxson (32), Slana (108), Tazlina (219)

2008 State employee count: Glennallen (34), Chitina (6), Paxson (6), Slana (7), Tazlina (25)

Table III-7: Glennallen Region

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.29	0.72	0.21
Shelter	0.14	0.43	
Utilities	0.15	2.19	
Food	0.20	1.09	0.22
Meats, poultry and fish	0.05	1.06	
Cereals and breads	0.03	1.11	
Dairy products	0.03	1.10	
Fruits and vegetables	0.04	1.12	
Other food items	0.04	1.08	
Food away from home	0.01	1.09	
Transportation	0.24	1.14	0.27
Fuel	0.12	1.20	
Car/truck ownership	0.05	1.00	
Other vehicle ownership	0.00	1.00	
Auto insurance	0.03	0.89	
Vehicle maintenance	0.03	1.40	
Interstate air travel	0.02	1.01	
In-state air/ferry travel	0.00	1.01	
Clothing	0.02	1.00	0.02
Medical	0.04	0.96	0.03
Medical services	0.02	0.92	
Medical insurance	0.02	1.00	
Other	0.22	1.02	0.22
Household furnishings/appliances	0.07	0.99	
Communication	0.03	0.98	
Recreation and education	0.07	1.02	
Personal care and other	0.05	1.09	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			0.97

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Delta Junction/Tok Region

Sample block communities: Delta Junction, Tok, Eagle, Northway

Description: Small and midsize Interior Alaska communities on the northwestern portion of the road system

2007 Population: Delta Junction (3,836), Tok (1,353), Eagle (109), Northway (81)

2008 State employee count: Delta Junction (46), Tok (56), Eagle (5), Northway (7)

Table III-8: Delta Junction/Tok Region

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.27	0.91	0.25
Shelter	0.15	0.60	
Utilities	0.12	2.41	
Food	0.14	1.09	0.15
Meats, poultry and fish	0.03	1.02	
Cereals and breads	0.02	1.09	
Dairy products	0.02	1.10	
Fruits and vegetables	0.03	1.11	
Other food items	0.03	1.14	
Food away from home	0.02	1.09	
Transportation	0.20	1.08	0.21
Fuel	0.08	1.17	
Car/truck ownership	0.04	0.96	
Other vehicle ownership	0.00	1.04	
Auto insurance	0.03	0.89	
Vehicle maintenance	0.02	1.15	
Interstate air travel	0.01	1.40	
In-state air/ferry travel	0.01	1.07	
Clothing	0.01	1.16	0.01
Medical	0.04	1.01	0.04
Medical services	0.02	1.03	
Medical insurance	0.02	1.00	
Other	0.34	1.09	0.37
Household furnishings/appliances	0.11	1.15	
Communication	0.05	1.07	
Recreation and education	0.11	1.09	
Personal care and other	0.08	1.01	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.04

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Roadless Interior

Sample block communities: Fort Yukon, Galena, McGrath

Description: Small, Interior Alaska communities without road access

2007 Population: Fort Yukon (591), Galena (609), McGrath (315)

2008 State employee count: Fort Yukon (2), Galena (11), McGrath (26)

Table III-9: Roadless Interior

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.20	0.81	0.16
Shelter	0.07	0.33	
Utilities	0.13	3.20	
Food	0.17	1.55	0.26
Meats, poultry and fish	0.05	1.39	
Cereals and breads	0.02	1.55	
Dairy products	0.02	1.62	
Fruits and vegetables	0.03	1.64	
Other food items	0.03	1.62	
Food away from home	0.02	1.56	
Transportation	0.20	1.49	0.30
Fuel	0.07	1.80	
Car/truck ownership	0.03	1.14	
Other vehicle ownership	0.01	1.35	
Auto insurance	0.01	0.89	
Vehicle maintenance	0.01	1.24	
Interstate air travel	0.02	2.05	
In-state air/ferry travel	0.05	1.26	
Clothing	0.02	1.24	0.03
Medical	0.05	1.03	0.05
Medical services	0.03	1.07	
Medical insurance	0.02	1.00	
Other	0.36	1.43	0.51
Household furnishings/appliances	0.11	1.68	
Communication	0.05	1.30	
Recreation and education	0.12	1.33	
Personal care and other	0.08	1.27	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.31

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City and Borough of Juneau

Description: Third-largest community in Alaska; serves as regional hub for communities in Southeast region

2007 Population: City and Borough of Juneau (30,305)

2008 State employee count: City and Borough of Juneau (3,365)

Table III-10: Juneau

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.30	1.14	0.34
Shelter	0.23	1.04	
Utilities	0.07	1.63	
Food	0.15	1.03	0.16
Meats, poultry and fish	0.04	1.07	
Cereals and breads	0.02	1.05	
Dairy products	0.02	1.00	
Fruits and vegetables	0.03	0.96	
Other food items	0.03	1.04	
Food away from home	0.02	1.03	
Transportation	0.14	1.09	0.15
Fuel	0.04	1.13	
Car/truck ownership	0.03	1.24	
Other vehicle ownership	0.01	0.81	
Auto insurance	0.02	0.76	
Vehicle maintenance	0.01	1.12	
Interstate air travel	0.02	1.11	
In-state air/ferry travel	0.01	1.00	
Clothing	0.01	1.02	0.01
Medical	0.05	1.03	0.05
Medical services	0.02	1.08	
Medical insurance	0.03	1.00	
Other	0.35	1.14	0.40
Household furnishings/appliances	0.11	1.35	
Communication	0.05	1.00	
Recreation and education	0.11	1.09	
Personal care and other	0.08	0.99	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.11

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Ketchikan Gateway Borough, City and Borough of Sitka

Description: Sizable Southeast Alaska communities serving as hubs for surrounding communities and villages

2007 Population: Ketchikan Gateway Borough (13,160), City and Borough of Sitka (8,640)

2008 State employee count: Ketchikan Gateway Borough (673), City and Borough of Sitka (240)

Table III-11: Ketchikan/Sitka

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.34	1.01	0.34
Shelter	0.24	0.85	
Utilities	0.10	1.77	
Food	0.17	1.17	0.20
Meats, poultry and fish	0.04	1.12	
Cereals and breads	0.02	1.13	
Dairy products	0.03	1.29	
Fruits and vegetables	0.03	1.11	
Other food items	0.03	1.23	
Food away from home	0.02	1.17	
Transportation	0.13	1.10	0.14
Fuel	0.04	1.17	
Car/truck ownership	0.02	1.22	
Other vehicle ownership	0.01	1.02	
Auto insurance	0.02	0.82	
Vehicle maintenance	0.01	1.13	
Interstate air travel	0.03	1.09	
In-state air/ferry travel	0.01	1.26	
Clothing	0.01	1.12	0.01
Medical	0.06	1.03	0.06
Medical services	0.03	1.07	
Medical insurance	0.03	1.00	
Other	0.29	1.15	0.33
Household furnishings/appliances	0.09	1.33	
Communication	0.04	0.89	
Recreation and education	0.10	1.14	
Personal care and other	0.06	1.08	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.09

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Southeast Mid-Size Communities

Sample block communities: Craig, Haines, Klawock, Metlakatla, Petersburg, Wrangell

Description: Communities with 1,000 to 5,000 residents in Southeast Alaska

2007 Population: Craig (1,359), Haines (2,257), Klawock (743), Metlakatla (1,282), Petersburg (3,071), Wrangell (1,947)

2008 State employee count: Craig (13), Haines (51), Klawock (12), Metlakatla (1), Petersburg (48), Wrangell (22)

Table III-12: Southeast Mid-Size Communities

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.28	0.74	0.21
Shelter	0.16	0.52	
Utilities	0.11	1.81	
Food	0.18	1.22	0.22
Meats, poultry and fish	0.05	1.10	
Cereals and breads	0.02	1.27	
Dairy products	0.03	1.29	
Fruits and vegetables	0.03	1.19	
Other food items	0.04	1.30	
Food away from home	0.02	1.23	
Transportation	0.16	1.16	0.19
Fuel	0.06	1.23	
Car/truck ownership	0.03	1.23	
Other vehicle ownership	0.01	0.94	
Auto insurance	0.02	0.82	
Vehicle maintenance	0.02	1.17	
Interstate air travel	0.02	1.29	
In-state air/ferry travel	0.01	1.05	
Clothing	0.02	1.23	0.02
Medical	0.08	0.98	0.08
Medical services	0.04	0.95	
Medical insurance	0.04	1.00	
Other	0.28	1.21	0.34
Household furnishings/appliances	0.09	1.36	
Communication	0.04	1.03	
Recreation and education	0.09	1.18	
Personal care and other	0.06	1.14	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.05

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Southeast Small Communities

Sample block communities: Elfin Cove, Gustavus, Hoonah, Pelican, Skagway, Tenakee Springs, Yakutat

Description: Communities with fewer than 1,000 residents in Southeast Alaska

2007 Population: Elfin Cove (21), Gustavus (442), Hoonah (852), Pelican (110), Skagway (845), Tenakee Springs (102), Yakutat (621)

2008 State employee count: Elfin Cove (1), Gustavus (2), Hoonah (6), Pelican (1), Skagway (13), Tenakee Springs (1), Yakutat (15)

Table III-13: Southeast Small Communities

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.33	0.67	0.22
Shelter	0.18	0.45	
Utilities	0.15	1.77	
Food	0.18	1.22	0.22
Meats, poultry and fish	0.05	1.15	
Cereals and breads	0.03	1.27	
Dairy products	0.03	1.28	
Fruits and vegetables	0.02	1.20	
Other food items	0.03	1.25	
Food away from home	0.02	1.23	
Transportation	0.12	1.19	0.14
Fuel	0.04	1.29	
Car/truck ownership	0.02	1.24	
Other vehicle ownership	0.01	1.03	
Auto insurance	0.01	0.82	
Vehicle maintenance	0.01	1.25	
Interstate air travel	0.01	1.42	
In-state air/ferry travel	0.02	1.06	
Clothing	0.01	1.21	0.01
Medical	0.05	1.01	0.06
Medical services	0.02	1.03	
Medical insurance	0.03	1.00	
Other	0.30	1.20	0.36
Household furnishings/appliances	0.10	1.34	
Communication	0.04	0.98	
Recreation and education	0.10	1.17	
Personal care and other	0.07	1.15	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.02

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Matanuska-Susitna Borough (including Palmer, Wasilla, and Willow; excluding Talkeetna)

Description: Communities in the Matanuska-Susitna Valley

2007 Population: Matanuska-Susitna Borough (80,056)

2008 State employee count: Matanuska-Susitna Borough (815)

Table III-14: Mat-Su

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.31	0.79	0.24
Shelter	0.24	0.74	
Utilities	0.07	1.03	
Food	0.16	1.03	0.16
Meats, poultry and fish	0.04	1.03	
Cereals and breads	0.02	1.01	
Dairy products	0.02	1.04	
Fruits and vegetables	0.02	1.01	
Other food items	0.03	1.05	
Food away from home	0.02	1.03	
Transportation	0.20	1.04	0.21
Fuel	0.09	1.07	
Car/truck ownership	0.04	1.11	
Other vehicle ownership	0.01	1.00	
Auto insurance	0.03	0.98	
Vehicle maintenance	0.02	0.87	
Interstate air travel	0.01	1.00	
In-state air/ferry travel	0.00	1.00	
Clothing	0.01	0.93	0.01
Medical	0.06	1.00	0.06
Medical services	0.03	1.01	
Medical insurance	0.03	1.00	
Other	0.26	1.01	0.26
Household furnishings/appliances	0.08	1.04	
Communication	0.03	0.96	
Recreation and education	0.08	1.00	
Personal care and other	0.06	1.01	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			0.95

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Kenai Peninsula

Sample block communities: Kenai Peninsula Borough (including Seward, Kasilof, Kenai, Nikiski, Soldotna, Sterling, Homer, Anchor Point, Cooper Landing, Ninilchik, Seldovia)

Description: Mid-size and small communities on the Kenai Peninsula

2007 Population: Kenai Peninsula Borough (52,370)

2008 State employee count: Kenai Peninsula Borough (937)

Table III-15: Kenai Peninsula

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.28	0.78	0.22
Shelter	0.19	0.64	
Utilities	0.09	1.46	
Food	0.19	1.15	0.22
Meats, poultry and fish	0.04	1.13	
Cereals and breads	0.03	1.14	
Dairy products	0.02	1.17	
Fruits and vegetables	0.04	1.17	
Other food items	0.04	1.15	
Food away from home	0.02	1.15	
Transportation	0.17	1.16	0.20
Fuel	0.06	1.12	
Car/truck ownership	0.03	1.36	
Other vehicle ownership	0.00	0.88	
Auto insurance	0.03	0.86	
Vehicle maintenance	0.02	1.09	
Interstate air travel	0.02	1.48	
In-state air/ferry travel	0.01	1.01	
Clothing	0.01	1.17	0.02
Medical	0.07	0.98	0.06
Medical services	0.03	0.97	
Medical insurance	0.03	1.00	
Other	0.28	1.05	0.29
Household furnishings/appliances	0.09	1.08	
Communication	0.04	0.88	
Recreation and education	0.09	1.09	
Personal care and other	0.06	1.04	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.01

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Prince William Sound

Sample block communities: Cordova, Valdez, Whittier

Description: PWS coastal communities with surface access to Anchorage via highway (Valdez and Whittier) and/or ferry (Cordova)

2007 Population: Cordova (2,192), Valdez (3,599), Whittier (174)

2008 State employee count: Cordova (82), Valdez (54), Whittier (4)

Table III-16: Prince William Sound

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.29	0.90	0.26
Shelter	0.17	0.67	
Utilities	0.12	2.07	
Food	0.17	1.31	0.22
Meats, poultry and fish	0.04	1.20	
Cereals and breads	0.02	1.28	
Dairy products	0.02	1.34	
Fruits and vegetables	0.04	1.44	
Other food items	0.03	1.30	
Food away from home	0.02	1.31	
Transportation	0.18	1.18	0.21
Fuel	0.06	1.25	
Car/truck ownership	0.04	1.00	
Other vehicle ownership	0.00	1.15	
Auto insurance	0.02	0.86	
Vehicle maintenance	0.02	1.40	
Interstate air travel	0.03	1.44	
In-state air/ferry travel	0.01	1.12	
Clothing	0.01	1.06	0.01
Medical	0.07	0.93	0.06
Medical services	0.03	0.84	
Medical insurance	0.04	1.00	
Other	0.27	1.11	0.32
Household furnishings/appliances	0.09	1.14	
Communication	0.04	0.99	
Recreation and education	0.09	1.12	
Personal care and other	0.06	1.14	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.08

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Community of Kodiak (does not include remote Borough communities)

Description: Island community on the Gulf of Alaska southwest of the Kenai Peninsula

2007 Population: Kodiak Borough (13,586)

2008 State employee count: Kodiak Borough (188)

Table III-17: Kodiak

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.33	1.03	0.34
Shelter	0.22	0.84	
Utilities	0.10	1.97	
Food	0.17	1.33	0.23
Meats, poultry and fish	0.04	1.25	
Cereals and breads	0.02	1.29	
Dairy products	0.02	1.32	
Fruits and vegetables	0.03	1.50	
Other food items	0.03	1.31	
Food away from home	0.03	1.33	
Transportation	0.17	1.25	0.22
Fuel	0.05	1.22	
Car/truck ownership	0.05	1.01	
Other vehicle ownership	0.00	1.02	
Auto insurance	0.02	0.86	
Vehicle maintenance	0.01	1.33	
Interstate air travel	0.03	1.75	
In-state air/ferry travel	0.01	1.83	
Clothing	0.01	0.94	0.01
Medical	0.04	0.94	0.04
Medical services	0.02	0.88	
Medical insurance	0.02	1.00	
Other	0.28	1.06	0.30
Household furnishings/appliances	0.09	1.04	
Communication	0.04	1.01	
Recreation and education	0.09	1.07	
Personal care and other	0.06	1.12	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.12

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Barrow, Kotzebue, Nome, Teller

Description: Mid-size communities serving as hubs for villages in Northwest and Arctic Alaska

2007 Population: Barrow (4,052), Kotzebue (3,133), Nome (3,495), Teller (256)

2008 State employee count: Barrow (19), Kotzebue (41), Nome (179), Teller (2)

Table III-18: Arctic Region

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.26	1.21	0.31
Shelter	0.16	0.98	
Utilities	0.10	2.37	
Food	0.18	1.69	0.30
Meats, poultry and fish	0.06	1.40	
Cereals and breads	0.02	1.74	
Dairy products	0.02	1.86	
Fruits and vegetables	0.03	1.85	
Other food items	0.04	1.83	
Food away from home	0.02	1.74	
Transportation	0.15	1.72	0.25
Fuel	0.03	1.59	
Car/truck ownership	0.02	1.12	
Other vehicle ownership	0.01	1.53	
Auto insurance	0.01	0.88	
Vehicle maintenance	0.01	1.87	
Interstate air travel	0.03	1.96	
In-state air/ferry travel	0.03	2.51	
Clothing	0.02	1.29	0.02
Medical	0.03	1.05	0.03
Medical services	0.01	1.10	
Medical insurance	0.01	1.00	
Other	0.38	1.50	0.57
Household furnishings/appliances	0.12	1.82	
Communication	0.05	1.00	
Recreation and education	0.12	1.41	
Personal care and other	0.08	1.45	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.48

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Bethel/Dillingham

Sample block communities: Bethel, Dillingham

Description: Mid-size communities serving as hubs for villages in Southwest Alaska

2007 Population: Bethel (5,650), Dillingham (2,404)

2008 State employee count: Bethel (218), Dillingham (77)

Table III-19: Bethel/Dillingham

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.29	1.54	0.45
Shelter	0.17	1.18	
Utilities	0.12	3.38	
Food	0.15	1.70	0.26
Meats, poultry and fish	0.03	1.42	
Cereals and breads	0.02	1.76	
Dairy products	0.02	1.79	
Fruits and vegetables	0.03	1.78	
Other food items	0.04	1.83	
Food away from home	0.02	1.72	
Transportation	0.16	1.55	0.24
Fuel	0.06	1.63	
Car/truck ownership	0.02	1.13	
Other vehicle ownership	0.00	1.62	
Auto insurance	0.02	0.89	
Vehicle maintenance	0.01	2.06	
Interstate air travel	0.02	1.74	
In-state air/ferry travel	0.03	1.74	
Clothing	0.02	1.09	0.02
Medical	0.03	1.05	0.03
Medical services	0.02	1.11	
Medical insurance	0.02	1.00	
Other	0.35	1.38	0.48
Household furnishings/appliances	0.11	1.59	
Communication	0.05	1.00	
Recreation and education	0.11	1.31	
Personal care and other	0.08	1.42	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.49

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Aleutian Region

Sample block communities: Adak, Cold Bay, King Cove, Sand Point, Unalaska/Dutch Harbor

Description: Communities along the Aleutian Chain

2007 Population: Adak (136), Cold Bay (72), King Cove (756), Sand Point (992), Unalaska/Dutch Harbor (3,677)

2008 State employee count: Adak (3), Cold Bay (6), King Cove (1), Sand Point (8), Unalaska/Dutch Harbor (29)

Table III-20: Aleutian Region

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.27	1.42	0.38
Shelter	0.17	1.07	
Utilities	0.10	3.14	
Food	0.18	1.46	0.26
Meats, poultry and fish	0.05	1.26	
Cereals and breads	0.02	1.32	
Dairy products	0.02	1.58	
Fruits and vegetables	0.04	1.68	
Other food items	0.03	1.51	
Food away from home	0.02	1.47	
Transportation	0.15	2.08	0.32
Fuel	0.04	1.20	
Car/truck ownership	0.01	1.04	
Other vehicle ownership	0.00	1.09	
Auto insurance	0.01	0.89	
Vehicle maintenance	0.02	1.77	
Interstate air travel	0.03	3.14	
In-state air/ferry travel	0.03	3.43	
Clothing	0.02	1.09	0.02
Medical	0.04	1.00	0.04
Medical services	0.02	1.00	
Medical insurance	0.02	1.00	
Other	0.34	1.40	0.48
Household furnishings/appliances	0.11	1.64	
Communication	0.05	1.39	
Recreation and education	0.11	1.27	
Personal care and other	0.08	1.26	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.50

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Southwest Small Communities

Sample block communities: Aniak, Anvik, Chignik, Emmonak, Goodnews Bay, Iliamna, King Salmon, Port Moller, Saint Mary's, Unalakleet

Description: Small, isolated communities in Southwest Alaska and along the Yukon River

2007 Population: Aniak (506), Anvik (102), Chignik (81), Emmonak (777), Goodnews Bay (235), Iliamna (93), King Salmon (426), Saint Mary's (521), Unalakleet (724)

2008 State employee count: Aniak (13), Anvik (3), Chignik (9), Emmonak (12), Goodnews Bay (0), Iliamna (5), King Salmon (50), Saint Mary's (20), Unalakleet (5)

Table III-21: Southwest Small Communities

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.19	0.75	0.14
Shelter	0.07	0.34	
Utilities	0.12	2.82	
Food	0.19	1.79	0.34
Meats, poultry and fish	0.05	1.50	
Cereals and breads	0.02	1.80	
Dairy products	0.03	2.04	
Fruits and vegetables	0.03	1.90	
Other food items	0.04	1.87	
Food away from home	0.01	1.82	
Transportation	0.21	1.70	0.36
Fuel	0.08	1.84	
Car/truck ownership	0.02	1.12	
Other vehicle ownership	0.04	1.55	
Auto insurance	0.01	0.89	
Vehicle maintenance	0.02	1.77	
Interstate air travel	0.02	2.03	
Instate air/ferry travel	0.03	1.75	
Clothing	0.02	1.11	0.03
Medical	0.03	1.03	0.03
Medical services	0.01	1.09	
Medical insurance	0.02	1.00	
Other	0.35	1.53	0.54
Household furnishings/appliances	0.11	1.91	
Communication	0.05	1.04	
Recreation and education	0.11	1.41	
Personal care and other	0.08	1.46	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.44

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Barrow

Description: Northernmost community in Alaska, on the coast of the Chukchi Sea

2007 Population: City of Barrow (4,052)

2008 State employee count: City of Barrow (19)

Table III-22: Barrow

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.18	1.08	0.19
Shelter	0.14	1.01	
Utilities	0.04	1.42	
Food	0.18	1.78	0.33
Meats, poultry and fish	0.04	1.40	
Cereals and breads	0.03	1.89	
Dairy products	0.02	1.92	
Fruits and vegetables	0.03	1.89	
Other food items	0.04	1.92	
Food away from home	0.02	1.80	
Transportation	0.16	1.61	0.26
Fuel	0.03	1.32	
Car/truck ownership	0.03	1.14	
Other vehicle ownership	0.00	1.61	
Auto insurance	0.01	0.88	
Vehicle maintenance	0.01	1.73	
Interstate air travel	0.03	2.03	
In-state air/ferry travel	0.04	2.09	
Clothing	0.02	1.29	0.03
Medical	0.02	1.14	0.02
Medical services	0.01	1.27	
Medical insurance	0.01	1.00	
Other	0.43	1.54	0.66
Household furnishings/appliances	0.14	1.88	
Communication	0.06	1.06	
Recreation and education	0.14	1.44	
Personal care and other	0.10	1.49	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.50

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Bethel

Description: Inland community on the Kuskokwim River in Southwest Alaska

2007 Population: City of Bethel (5,650)

2008 State employee count: City of Bethel (218)

Table III-23: Bethel

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.30	1.71	0.51
Shelter	0.17	1.36	
Utilities	0.12	3.46	
Food	0.15	1.72	0.26
Meats, poultry and fish	0.04	1.41	
Cereals and breads	0.02	1.80	
Dairy products	0.02	1.81	
Fruits and vegetables	0.03	1.87	
Other food items	0.03	1.84	
Food away from home	0.02	1.75	
Transportation	0.14	1.56	0.22
Fuel	0.05	1.56	
Car/truck ownership	0.02	1.11	
Other vehicle ownership	0.00	1.64	
Auto insurance	0.02	0.89	
Vehicle maintenance	0.01	2.16	
Interstate air travel	0.02	1.68	
In-state air/ferry travel	0.03	1.83	
Clothing	0.02	1.03	0.02
Medical	0.03	1.08	0.03
Medical services	0.01	1.08	
Medical insurance	0.01	1.00	
Other	0.37	1.36	0.50
Household furnishings/appliances	0.12	1.59	
Communication	0.05	0.85	
Recreation and education	0.12	1.30	
Personal care and other	0.08	1.42	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.53

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Cordova

Description: Coastal community at the southeastern end of Prince William Sound

2007 Population: City of Cordova (2,192)

2008 State employee count: City of Cordova (82)

Table III-24: Cordova

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.22	0.80	0.18
Shelter	0.12	0.56	
Utilities	0.10	1.99	
Food	0.15	1.42	0.21
Meats, poultry and fish	0.03	1.21	
Cereals and breads	0.02	1.45	
Dairy products	0.02	1.55	
Fruits and vegetables	0.03	1.51	
Other food items	0.03	1.40	
Food away from home	0.02	1.42	
Transportation	0.19	1.20	0.22
Fuel	0.06	1.38	
Car/truck ownership	0.04	1.01	
Other vehicle ownership	0.00	1.38	
Auto insurance	0.02	0.86	
Vehicle maintenance	0.02	1.32	
Interstate air travel	0.03	1.27	
In-state air/ferry travel	0.01	1.00	
Clothing	0.01	1.11	0.01
Medical	0.08	0.92	0.07
Medical services	0.03	0.83	
Medical insurance	0.04	1.00	
Other	0.37	1.23	0.46
Household furnishings/appliances	0.12	1.29	
Communication	0.05	1.18	
Recreation and education	0.12	1.18	
Personal care and other	0.08	1.25	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.13

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Dillingham

Description: Located on Bristol Bay in Southwest Alaska

2007 Population: City of Dillingham (2,404)

2008 State employee count: City of Dillingham (77)

Table III-25: Dillingham

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.25	1.03	0.26
Shelter	0.14	0.62	
Utilities	0.12	3.06	
Food	0.16	1.64	0.27
Meats, poultry and fish	0.04	1.45	
Cereals and breads	0.02	1.68	
Dairy products	0.02	1.75	
Fruits and vegetables	0.03	1.56	
Other food items	0.04	1.80	
Food away from home	0.01	1.65	
Transportation	0.21	1.57	0.33
Fuel	0.08	1.77	
Car/truck ownership	0.04	1.18	
Other vehicle ownership	0.01	1.59	
Auto insurance	0.02	0.89	
Vehicle maintenance	0.01	1.83	
Interstate air travel	0.02	1.88	
In-state air/ferry travel	0.04	1.52	
Clothing	0.02	1.25	0.02
Medical	0.05	1.00	0.05
Medical services	0.02	1.19	
Medical insurance	0.03	1.00	
Other	0.31	1.44	0.45
Household furnishings/appliances	0.10	1.60	
Communication	0.04	1.35	
Recreation and education	0.10	1.33	
Personal care and other	0.07	1.44	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.37

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Homer and surrounding area

Description: Located on the highway system, southern Kenai Peninsula Borough

2007 Population: City of Homer (5,442) plus surrounding areas, approximately 8,000 total

2008 State employee count: City of Homer (104)

Table III-26: Homer

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.28	0.79	0.22
Shelter	0.19	0.62	
Utilities	0.09	1.63	
Food	0.18	1.13	0.20
Meats, poultry and fish	0.05	1.12	
Cereals and breads	0.02	1.20	
Dairy products	0.02	1.21	
Fruits and vegetables	0.04	1.20	
Other food items	0.02	1.14	
Food away from home	0.02	1.17	
Transportation	0.17	1.20	0.20
Fuel	0.04	1.20	
Car/truck ownership	0.05	1.36	
Other vehicle ownership	0.01	0.99	
Auto insurance	0.02	0.86	
Vehicle maintenance	0.02	1.04	
Interstate air travel	0.02	1.56	
In-state air/ferry travel	0.01	1.01	
Clothing	0.01	1.21	0.01
Medical	0.06	1.03	0.06
Medical services	0.03	1.06	
Medical insurance	0.03	1.00	
Other	0.30	1.04	0.31
Household furnishings/appliances	0.10	1.07	
Communication	0.04	0.87	
Recreation and education	0.10	1.10	
Personal care and other	0.07	1.01	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.01

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: Ketchikan Gateway Borough

Description: Comprised of City of Ketchikan and City of Saxman, in southern Southeast Alaska

2007 Population: Ketchikan Gateway Borough (13,160)

2008 State employee count: Ketchikan Gateway Borough (673)

Table III-27: Ketchikan

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.34	0.89	0.30
Shelter	0.24	0.78	
Utilities	0.10	1.48	
Food	0.17	1.18	0.20
Meats, poultry and fish	0.04	1.18	
Cereals and breads	0.02	1.10	
Dairy products	0.04	1.23	
Fruits and vegetables	0.03	1.15	
Other food items	0.03	1.21	
Food away from home	0.02	1.17	
Transportation	0.14	1.09	0.15
Fuel	0.05	1.21	
Car/truck ownership	0.02	1.18	
Other vehicle ownership	0.01	1.01	
Auto insurance	0.02	0.82	
Vehicle maintenance	0.01	1.01	
Interstate air travel	0.03	1.06	
In-state air/ferry travel	0.00	1.38	
Clothing	0.01	1.00	0.01
Medical	0.06	1.04	0.06
Medical services	0.03	1.08	
Medical insurance	0.03	1.00	
Other	0.28	1.11	0.31
Household furnishings/appliances	0.09	1.27	
Communication	0.04	0.88	
Recreation and education	0.09	1.10	
Personal care and other	0.06	1.03	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.04

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Kotzebue

Description: Coastal community on Kotzebue Sound in Northwest Alaska

2007 Population: City of Kotzebue (3,133)

2008 State employee count: City of Kotzebue (41)

Table III-28: Kotzebue

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.21	1.42	0.30
Shelter	0.13	1.05	
Utilities	0.08	3.29	
Food	0.19	1.84	0.35
Meats, poultry and fish	0.05	1.47	
Cereals and breads	0.02	1.87	
Dairy products	0.03	2.07	
Fruits and vegetables	0.03	1.92	
Other food items	0.05	2.01	
Food away from home	0.01	1.87	
Transportation	0.13	1.94	0.26
Fuel	0.02	2.04	
Car/truck ownership	0.01	1.11	
Other vehicle ownership	0.01	1.59	
Auto insurance	0.01	0.88	
Vehicle maintenance	0.01	1.60	
Interstate air travel	0.04	1.89	
In-state air/ferry travel	0.03	2.72	
Clothing	0.01	1.30	0.02
Medical	0.03	0.91	0.03
Medical services	0.02	0.86	
Medical insurance	0.01	1.00	
Other	0.43	1.55	0.67
Household furnishings/appliances	0.14	1.93	
Communication	0.06	0.87	
Recreation and education	0.14	1.47	
Personal care and other	0.09	1.51	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.61

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Nome

Description: Coastal community on Norton Sound in Northwest Alaska

2007 Population: City of Nome (3,495)

2008 State employee count: City of Nome (179)

Table III-29: Nome

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.32	1.24	0.40
Shelter	0.20	0.96	
Utilities	0.12	2.60	
Food	0.17	1.51	0.25
Meats, poultry and fish	0.05	1.32	
Cereals and breads	0.02	1.44	
Dairy products	0.02	1.60	
Fruits and vegetables	0.03	1.75	
Other food items	0.03	1.56	
Food away from home	0.02	1.53	
Transportation	0.16	1.60	0.25
Fuel	0.05	1.49	
Car/truck ownership	0.03	1.11	
Other vehicle ownership	0.01	1.39	
Auto insurance	0.02	0.88	
Vehicle maintenance	0.02	2.25	
Interstate air travel	0.02	1.89	
In-state air/ferry travel	0.02	2.72	
Clothing	0.01	1.27	0.01
Medical	0.03	1.05	0.03
Medical services	0.01	1.12	
Medical insurance	0.02	1.00	
Other	0.32	1.40	0.45
Household furnishings/appliances	0.10	1.66	
Communication	0.04	1.05	
Recreation and education	0.10	1.33	
Personal care and other	0.07	1.37	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.39

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample Block communities: City of Petersburg

Description: Located on Mitkof Island in central Southeast Alaska

2007 Population: City of Petersburg (3,071)

2008 State employee count: City of Petersburg (48)

Table III-30: Petersburg

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.28	0.74	0.21
Shelter	0.18	0.62	
Utilities	0.09	1.31	
Food	0.14	1.25	0.18
Meats, poultry and fish	0.03	1.14	
Cereals and breads	0.02	1.34	
Dairy products	0.02	1.31	
Fruits and vegetables	0.03	1.21	
Other food items	0.02	1.31	
Food away from home	0.02	1.26	
Transportation	0.14	1.09	0.15
Fuel	0.03	1.13	
Car/truck ownership	0.02	1.25	
Other vehicle ownership	0.01	0.82	
Auto insurance	0.02	0.82	
Vehicle maintenance	0.01	1.25	
Interstate air travel	0.03	1.12	
In-state air/ferry travel	0.01	1.16	
Clothing	0.01	1.40	0.02
Medical	0.06	0.94	0.05
Medical services	0.03	0.87	
Medical insurance	0.03	1.00	
Other	0.37	1.21	0.45
Household furnishings/appliances	0.12	1.29	
Communication	0.05	1.06	
Recreation and education	0.12	1.21	
Personal care and other	0.08	1.17	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.05

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City and Borough of Sitka

Description: Island community located in Southeast Alaska

2007 Population: City and Borough of Sitka (8,640)

2008 State employee count: City and Borough of Sitka (198)

Table III-31: Sitka

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.34	1.17	0.40
Shelter	0.23	0.96	
Utilities	0.10	2.20	
Food	0.17	1.15	0.17
Meats, poultry and fish	0.04	1.01	
Cereals and breads	0.03	1.17	
Dairy products	0.02	1.39	
Fruits and vegetables	0.04	1.04	
Other food items	0.03	1.27	
Food away from home	0.02	1.18	
Transportation	0.12	1.10	0.12
Fuel	0.03	1.11	
Car/truck ownership	0.01	1.29	
Other vehicle ownership	0.00	1.03	
Auto insurance	0.02	0.82	
Vehicle maintenance	0.01	1.31	
Interstate air travel	0.03	1.14	
In-state air/ferry travel	0.01	1.08	
Clothing	0.01	1.31	0.01
Medical	0.05	1.02	0.05
Medical services	0.02	1.06	
Medical insurance	0.03	1.00	
Other	0.31	1.22	0.38
Household furnishings/appliances	0.10	1.43	
Communication	0.04	0.90	
Recreation and education	0.10	1.20	
Personal care and other	0.07	1.14	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.17

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Unalaska/Dutch Harbor

Sample block communities: City of Unalaska

Description: Island-based community midway on the Aleutian Island chain

2007 Population: City of Unalaska (3,677)

2008 State employee count: City of Unalaska (29)

Table III-32: Unalaska/Dutch Harbor

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.27	1.65	0.45
Shelter	0.19	1.35	
Utilities	0.08	3.14	
Food	0.17	1.43	0.25
Meats, poultry and fish	0.04	1.18	
Cereals and breads	0.02	1.22	
Dairy products	0.02	1.47	
Fruits and vegetables	0.05	1.68	
Other food items	0.03	1.51	
Food away from home	0.02	1.41	
Transportation	0.15	2.35	0.35
Fuel	0.04	1.19	
Car/truck ownership	0.01	1.05	
Other vehicle ownership	0.00	1.10	
Auto insurance	0.01	0.89	
Vehicle maintenance	0.02	1.84	
Interstate air travel	0.03	3.50	
In-state air/ferry travel	0.03	3.78	
Clothing	0.02	1.08	0.02
Medical	0.04	0.98	0.04
Medical services	0.02	0.96	
Medical insurance	0.03	1.00	
Other	0.35	1.37	0.48
Household furnishings/appliances	0.11	1.57	
Communication	0.05	1.52	
Recreation and education	0.11	1.24	
Personal care and other	0.08	1.20	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.58

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

Sample block communities: City of Valdez

Description: Located at the northern tip of Prince William Sound; the terminus of the Alaska oil pipeline

2007 Population: City of Valdez (3,599)

2008 State employee count: City of Valdez (54)

Table III-33: Valdez

Expenditure Category	Expenditure Weights	Price Differential	Cost of Living Differential
Housing	0.31	0.97	0.30
Shelter	0.19	0.73	
Utilities	0.12	2.18	
Food	0.18	1.26	0.23
Meats, poultry and fish	0.04	1.20	
Cereals and breads	0.02	1.19	
Dairy products	0.02	1.22	
Fruits and vegetables	0.04	1.41	
Other food items	0.04	1.25	
Food away from home	0.02	1.25	
Transportation	0.17	1.17	0.20
Fuel	0.06	1.17	
Car/truck ownership	0.04	1.00	
ther vehicle ownership	0.00	1.02	
Auto insurance	0.02	0.86	
Vehicle maintenance	0.02	1.47	
Interstate air travel	0.02	1.56	
In-state air/ferry travel	0.01	1.19	
Clothing	0.02	1.04	0.02
Medical	0.07	0.92	0.06
Medical services	0.03	0.83	
Medical insurance	0.04	1.00	
Other	0.25	1.05	0.27
Household furnishings/appliances	0.08	1.06	
Communication	0.03	0.88	
Recreation and education	0.08	1.08	
Personal care and other	0.06	1.08	
GEOGRAPHIC COST OF LIVING DIFFERENTIAL			1.08

Note: Columns may not add to totals/subtotals due to rounding. Expenditure weights reported as 0.00 indicate weights of less than 0.5 percent of the household budget, but not zero. The housing category differential is calculated by a procedure described in Section IV and is not the simple sum of subcategory products.

The 2008 Alaska GDS methodology does not include household surveying or retail price surveying in Seattle. This is due in part to the cost and complexity of surveying in such a large urban area, which would be vastly out of proportion to the number of Alaska state employees who reside there (five). Another reason is that other data already exists for estimating cost of living differentials between Anchorage and Seattle. The ACCRA Cost of Living Index, though not reliable for measuring cost of living differences within Alaska, provides data useful for developing a Seattle differential.

ACCRA COLI data are sometimes supplemented by U.S. Housing and Urban Development Fair Market Rent (FMR) data, particularly when there is a need to extrapolate cost of living estimates beyond the urban centers covered in ACCRA. For example, the State of Washington Office of Financial Management employed this method in a recent study of Higher Education Per-Student Funding Comparisons (RCW 28B.15.068). Trial calculations by the Alaska GDS team comparing FMR and ACCRA results determined that ACCRA differentials are acceptable for comparing the Anchorage COLI with Seattle and Washington D.C.

Overview of the ACCRA Cost of Living Index

The Council for Community and Economic Research (C2ER), a nonprofit organization, develops the ACCRA COLI. ACCRA stands for American Chamber of Commerce Researchers Association, the organization that originated the survey. The index is used for many purposes, including as a guide for comparing managerial compensation among approximately 300 urban areas across the United States. The ACCRA COLI has been published continuously since 1968. C2ER sells the results of the ACCRA COLI in various formats to subscribers and individual purchasers.

Comparison of ACCRA and Alaska GDS

Market Basket

ACCRA's market basket is composed of 57 items representing six categories (groceries, housing, utilities, transportation, health care, and miscellaneous), compared to 200 items representing 22 categories in the Alaska GDS. As with the Alaska GDS, individual items in the ACCRA market basket are chosen to represent the collective prices of groups of goods and services. For example, the price of whole frying chicken is used to represent prices for all poultry products. If the price of whole fryers is 10 percent higher in one city than another, it is assumed that the price of all poultry products is also, on average, 10 percent higher.

Consumption Weights

For ACCRA, the consumption data used to weight each category in the composite index, as well as the consumption weights within each category, comes from the U.S. Bureau of Labor Statistics (BLS) 2006 Consumer Expenditure Survey. The consumption patterns used for ACCRA are those of the upper quintile of household income and of households where the reference person has a professional or managerial occupation.

For the Alaska GDS, consumption weights are developed from the Household Consumer Survey and represent the average consumption for all consumers in each community or sample block.

Data Collection

CONSUMER EXPENDITURES

As noted, consumption data for ACCRA comes from a different source than for Alaska GDS. However, the two sources use similar approaches. The ACCRA source, the BLS Consumer Expenditure Survey, is widely vetted and generally regarded as methodologically sound. The Alaska GDS Household Consumption Survey methodology is modeled, to an extent, on the BLS method.

RETAIL PRICES

There is a significant difference between Alaska GDS and ACCRA in the way retail pricing data is collected and reported. Alaska GDS data is collected by trained survey teams operating either by telephone or on location in the target communities. ACCRA price data is collected by local organizations in each of the 300 or so locations. The organizations volunteer for the task and multiple volunteers operate in each of the locations to amass the data. Data is collected quarterly and averaged; however, not all locations are able to provide data every quarter. Where quarterly data is missing, C2ER estimates prices as needed to develop average annual prices. ACCRA price data excludes taxes.

This C2ER process is not as standardized or controlled as the method used by Alaska GDS, and neither survey is based on random (statistical) sampling. Both the Alaska GDS and ACCRA obtain price data from “judgment” samples. For the Alaska GDS, the retail outlets surveyed are selected strategically to provide what the research team believes is a representation of the outlets where most people shop. C2ER depends on volunteer businesses to provide price information, and therefore has somewhat less control over sample selection. Neither method produces price estimates for which statistical confidence intervals may be calculated.

Composition and Weighting of the ACCRA Market Basket

Groceries

- Category weight: 12.49 percent
- Contains 26 items.

Housing

- Category weight: 29.84 percent
- Housing index is equal to the weighted average of the mortgage payment (81.95 percent), computed as the interest rate times the house purchase price, and the monthly apartment rent (18.05 percent).

- Apartment rent for childless professional and managerial couple – left to the discretion of the surveyor. Apartment sizes are determined to be between 850 and 1,050 square feet. ACCRA does not control for quality of the apartment (HUD, however, does control for quality).
- The price of a new house, 2,400 square feet, 3 to 4 bedrooms, 2 full bathrooms, and attached 2-car garage and several amenities.
- Walden (1998)¹ suggests comparing ACCRA apartment rents with HUD's Fair Market Rent (FMR). However, HUD's FMR are estimates rather than observed prices. The ACCRA data is still superior.

Utilities

- Category weight: 9.94 percent
- Based on the total cost (not per unit cost) of three items: electricity, other home energy, and telephone service.
- Energy consumption is based on a weather model and primary energy use in homes of the area.

Transportation

- Category weight: 10.73 percent
- Based on the cost of tire balancing and gasoline.

Health Care

- Category weight: 4.07 percent
- Includes: optometrist visit, doctor visit (AMA procedure 99213), dentist visit, prescription and non-prescription medications.

Miscellaneous

- Category weight: 32.93 percent
- Includes a wide variety of goods and services including eating out, personal care, apparel, household operations, reading, entertainment, and alcohol.

Approach and Results

To develop geographic differentials for Seattle, the study team relied on the most recent ACCRA data on average prices for all of the 57 items surveyed by C2ER as of the third quarter of 2008. The data includes the following federal Office of Management and Budget (OMB) designated areas: *Anchorage AK Metro* and *Seattle-Bellevue-Everett WA Metro Div.*

¹ Walden, M. (1998). Geographic Variation in Consumer Prices: Implications for Local Price Indices. *The Journal of Consumer Affairs*, Volume 32, Issue 2.

The ACCRA Index average between third quarter 2008 and third quarter 2007 for the areas above are provided in the following table.

Table III-34: ACCRA Seattle and Washington, D.C. Cost Differentials, by Component

Urban Area	Composite Index	Grocery Items	Housing	Utilities	Transportation	Health Care	Misc. Goods and Services
Anchorage	126.5	139.7	138.0	101.2	106.3	130.1	124.7
Seattle	123.6	116.5	152.7	86.9	109.7	120.9	115.9

Translating the ACCRA Index differentials into Alaska GDS differentials (with Anchorage as the reference location) results in composite differentials of 0.98 for Seattle.

Table III-35: Seattle and Washington, D.C. Cost Differentials

Urban Area	Composite Index (US Average)	Index with Anchorage Base
Anchorage	126.5	1.0
Seattle	123.6	0.98

Alternative Approaches

Runzheimer International produces Runzheimer's Plan of Living Cost Standards, a national cost of living index focused on lower income households. That index suggests that the standard of living that \$32,000 would buy for a family of four in a "standard" U.S. city would cost \$41,522 in Anchorage and \$49,382 in Seattle. This suggests a Seattle differential relative to Anchorage of 1.19. This data may have limited application for this study, given its focus on low-income households.

Another approach to calculating a Seattle cost of living differential uses the differential for Seattle measured in the 1985 study and updates that value with the Consumer Price Index. The 1985 study measured a cost of living differential of 0.86 (relative to Anchorage's base value of 1.0). Since 1985, inflation has increased the cost of living in Seattle by a factor of 2.13 (or by 113 percent), based on the Consumer Price Index, and by a factor of 1.77 (77 percent) in Anchorage. Multiplying Seattle's 1985 differential of 0.86 by 2.13 results in an inflation-adjusted value of 1.83. Multiplying Anchorage's 1985 differential of 1.0 by 1.77 results in a value of 1.77, indicating a differential of 1.03 (1.83 divided by 1.77). This finding generally supports the differential developed using ACCRA data analysis, which indicates the cost of living in Seattle and Anchorage are now about equal, unlike 24 years ago when Anchorage was significantly more expensive than Seattle.

Section IV: Methods and Analysis

Governments, businesses, and social scientists use estimates of consumer prices and cost of living in a wide variety of applications, including inequality studies, wage comparisons and poverty assessments. These estimates address two basic cost parameters: changes over time and differences from place to place. The federal Consumer Price Index (CPI), the most extensive price-measurement program in the U.S., is an estimate of inflation. It measures changes in the cost of a specified “market basket” of goods over time in 87 urban areas based on analysis of approximately 80,000 individual prices collected monthly from more than 21,000 retail outlets. One of the best-known geographic differential methodologies is the ACCRA (American Chamber of Commerce Researchers Association) Cost of Living Index. ACCRA measures differences in cost of living among roughly 400 urban and suburban areas throughout the U.S.

Because the CPI and geographic-differentials research help determine how billions of dollars in public and private services, salaries and other investments are allocated, the process of critiquing and refining these methodologies is ongoing. Alaska, however, remains something of a special case. Whereas many of methodological adjustments have been designed to address expanding consumer choices, much consumer behavior in Alaska is driven, instead, by an absence of choices. Things regarded as common necessities in parts of Alaska, a car for example, either can’t be had or are of limited use in other communities. Such radical differences in local needs and options affect both the cost and quality of life.

This section of the report discusses some of the methodological considerations that have been addressed in the past few years in the consumer-price and cost of living literature and how they relate, or fail to relate, to Alaska.

Designing Consumer-Price and Cost of Living Studies

A consumer-price study measures changes in the prices of identical products over time or from place to place. A cost of living study is more complex. It measures changes in the cost of a defined standard of living over time or from place to place.¹ “Standard of living” means “identical utility” (in the economic sense) or, more generally, an identical level of well-being. This means that, while consumer price studies are concerned only with variations in the price of goods and services, cost of living studies include analysis of household consumption patterns as well as consumer prices. The CPI methodology, while not aspiring to measure true cost of living, combines methods to track pure price inflation with methods for consumption weighting to produce a more accurate estimate of the impact of inflation on real families.

Consumer-price and cost of living studies share a number of challenges, including the following:

- For various reasons, different stores in the same community may charge different prices for the same goods. Both consumer-price and cost of living studies must find ways of determining how much to weight prices from one store compared to prices from another.
- Changes in product design, technology and availability mean that the set of goods and services to be compared is not identical over time and often varies from place to place as well. In Alaska, for example, sales of new outboard motors have evolved over the past few years from predominantly two-stroke engines to predominantly four-stroke engines (with associated changes in price and performance).

Regional cost of living studies must confront special challenges, including the following:

- Consumer spending is affected not just by market prices and consumer preferences, but by non-market goods such as public infrastructure, climatic conditions, the crime rate, etc. For example, the outboard engines described above are virtual necessities in many parts of the state and virtually irrelevant in others. This variability affects both price and demand.
- Some sectors of consumer spending vary significantly from place to place, or are so complex that it becomes difficult to identify comparable products and prices. One example is medical care, where prices vary depending on what types of services and third-party payers are available.

In Alaska, differences in climate, transportation, service availability, and other factors can be so extreme as to make it virtually impossible to define key components of a standard of living in diverse communities. An example is housing. In most communities in rural Alaska, building and maintaining a house that is average for Anchorage would be prohibitively expensive for all but the wealthiest families. The Alaska GDS approach developed to address this and other challenges is described later in this section.

¹ Hoffmeister, Onno. “Cost of Living and Real Income Differentials in Russia’s Provinces: Evidence from the Russia Longitudinal Monitoring Survey,” Institute for Eastern European Studies, Berlin, 2003.

Developing Cost of Living Indexes

Like many economic measures, cost-of-living indexes must be interpreted within a set of assumptions that limits their application. If all consumers had the same preferences and income, price differentials would be wholly sufficient. Since preferences and income are affected by demographics, location, ethnicity, technology, access to information, and many other factors, even the most sophisticated cost of living methodologies, such as the CPI, fall short of pinpoint accuracy. Following is a brief discussion of how the field has tried to address three fundamental components of cost of living studies:

- Consumption weights
- Sampling
- Market basket

Consumption Weights

Price differentials, alone, can be a useful indicator of the cost of living. It is more accurate, however, to “weight” prices using information about consumption: what people actually buy. Consumption is affected by price, but also by need and preference. All three factors (price, need, and preference) vary from place to place and over time. Determining which goods, services, and prices are most relevant and important — and therefore deserve the most weight — is a key part of cost-of-living methodologies.

Two of the most common indexes for comparing cost of living are known as the Laspeyres Index and the Paasche Index. The two methods differ principally in what set of circumstances is used for the base calculation and what is used as the comparison. Each method leads to a slightly different mathematical result. A third method computes a geometric mean of the Laspeyres and Paasche Indexes. This is also known as the Fisher Ideal index.²

In practice, most cost of living studies use the Laspeyres Index because it relies on consumption patterns from the base region or base time period. Typically, base consumption patterns are known or represent the least cost to obtain. The Paasche Index requires consumption patterns from each new comparison region or time period, and the Fisher Index requires both. This means that, the Paasche and Fisher indexes require new consumption data for each new computation, while the Laspeyres Index may be computed for multiple time periods or locations using a single set of (base) consumption data.

Sampling

The ideal data for establishing geographic cost of living differentials would be a record of all household purchases (including all prices and all quantities) for all households in all regions of interest. It is clearly impractical to obtain data for all households, nor is it practical to obtain all prices and quantities. Cost of living indexes address these data shortcomings by sampling in a variety of ways, and an extensive body of literature has developed that evaluates the pros and cons of different methods.³ All the sampling methods must address three basic parameters for both the base region and comparison region:

² Ibid. pages 23-24.

³ Many of the basic issues involved in constructing and updating price indexes are summarized in the book, *At What Price*, by the National Research Council’s Panel on Conceptual, Measurement, and Other Statistical Issues in Developing Cost-of-Living Indexes (2002, National Academy Press).

1. How does a representative household distribute its expenditures across all possible purchases?
2. What subset of items provides the best proxy for the range of actual items purchased?
3. What subset of local prices provides the best proxy for the range actual prices paid?

Typical methodologies include data collection from a sample of households (regarding purchases) and a sample of retail outlets (regarding prices and sales). In all cases, sampling plans must address the weighting considerations described above.

Market Basket

The concept of pricing comparable market baskets to measure price differences from time to time or place to place is deceptively simple. In practice, it is impossible to price a broad enough set of precisely the same items to obtain a wholly accurate comparison of overall living costs. Following is a brief discussion of some of the more material adjustments that may need to be considered in market basket methodologies.

SUBSTITUTION

Substitution refers to the fact that, over time or from place to place, consumers may purchase certain goods and services in lieu of others. For example, Delicious apples may substitute for Gala apples depending on season or location. This means that it is seldom possible to recreate in the comparison time period or region precisely the same market basket as was priced in the base. As a result, the BLS began using geometric instead of arithmetic averaging to combine individual prices in approximately 60 percent of the market basket strata used in the CPI.⁴

Substitution occurs over time, but is even more of a challenge from place to place. There are more substitution possibilities in urban areas than in rural areas.⁵ Also, Curran et al (2006) argued that the set of choices available to different consumers is not the same. For example, wealthier households can afford to exercise greater choice not just because they can spend more, but because they are more mobile. Low-income households cannot respond as quickly to geographic price differences because they tend to have less money to cover moving costs, less information about work opportunities, less human capital (for example, less developed networks), and generally less capacity to explore options.

QUALITY

The effect of quality differences in similar goods and services is related to that of substitution. When two items are similar but one is of higher quality, the price premium for that quality reflects delivery of greater benefits to the consumer. If the benefits realized by the consumer are different, then the increase in price cannot, at least entirely, be attributed to inflation or an increased cost of living. Quality of life also increases as a result of the new benefits. For example, differences in the cost of cable television service may reflect increases in the amount of and quality of programming, high-definition picture, pay-per-view options, etc.

⁴ Schultze and Mackie, Editors, *At What Price*, Panel on Conceptual, Measurement, and Other Statistical Issues in Developing Cost-of-Living Indexes, National Academy Press, 2002.

⁵ Ravallion, Martin and Dominique van de Walle, "Urban-Rural Cost-of-Living Differentials in a Developing Economy," *Journal of Urban Economics* 29, 113-127, 1991.

CHOICE OF RETAIL OUTLET

Cost-of-living methodologies must try to estimate the effects on pricing of the types of retail outlets where people actually shop. To the extent possible, sample prices should be weighted to reflect the proportion of consumers who shop at, for example, box stores (lower prices) versus full-service specialty stores (higher prices). Ideally, a COLI methodology should also account for the decline in “utility” (increase in cost of living) for consumers who prefer to shop in a full-service outlet, but who have found those stores driven out of business by the new outlets. However, the BLS has found the latter type of adjustment to be impractical and of minor impact.⁶

AGGREGATING DATA FROM INDIVIDUAL HOUSEHOLDS

Every household faces a unique cost of living (and, arguably, a unique rate of inflation). That is, no two households make precisely the same set of purchases, and, in theory, one could create an individual cost of living index for each household.⁷ To produce an aggregated index requires averaging across households, and this may be done either with a simple average (equal weight to each household) or a weighted average (with households that spend more given more weight. The former is known as a “democratic” index, the latter as “plutocratic.”

The practical limitation to either democratic or plutocratic aggregation across all households is simply the task of collecting individual data from all households. Schultze and Mackie suggest that the BLS consider an intermediate approach for the CPI, namely aggregating sub-indexes for defined groups, such as the poor and the elderly. They also point out, however, that there is not yet conclusive evidence such groups experience significantly different inflation rates over extended time periods.

HOUSING

Housing is a heterogeneous good. That means there is no single measure that represents the quantity consumed. Instead, observed market prices more accurately represent expenditures on a bundle of diverse housing attributes such as age of structure, climate, location (for example, roaded vs. non-roaded, distance to markets, or distance to green space), quality (of windows, toilet, kitchen, water, laundry, etc.), size, cultural attributes (traditional vs. modern building methods), etc. Housing is also a matter of consumer choice and income. Ravallion and van de Walle use a hedonic rent model to deal with some of the problems posed by heterogeneity.⁸ In practice, however, a hedonic housing-cost-index would be time-intensive, difficult to calculate, and expensive.

Unlike other consumer goods, housing is not traded spatially (cannot be moved from place to place), which can greatly amplify price differentials.

MEDICAL CARE

Schultze and Mackie describe the issues associated with developing the medical care component of the CPI as more difficult than those of any other component. Technological progress and institutional evolution result in changing quality of care. Further complexity is introduced by the fact that many factors besides type and

⁶ Schultze and Mackie, op. cit. page 251.

⁷ “The Boskin Commission Report: Toward a More Accurate Measure of the Cost of Living,” Report to the Senate Finance Committee, 1996:5.

⁸ Hedonic pricing varies according to the qualities or attributes associated with individual purchases.

quality of care determine an individual's health. This leads to the question whether cost-of-living measures should be associated with inputs (a prescription, a physician visit, or a day in the hospital) or outputs, namely changes in health. Other questions abound, for example how an index should treat a relatively inexpensive condition that many people face, such as conjunctivitis, versus a more rare, but much more expensive condition such as heart disease. Finally, the issues are compounded by the different ways in which consumers pay for medical care, including variations in insurance coverage and cost and who pays the premiums. Even for a study of the scale of the CPI, substantial uncertainty exists about the precision of current methods. However, recommendations in Schultze and Mackie for potential improvements would require extensive analysis of medical outcomes under multiple treatment scenarios.⁹

Differentials Research in Alaska

As noted above, computing regional cost of living differentials requires generalizing about a variety of communities using sample data from households and retail outlets. The Alaska GDS methodology includes many design elements to address the special challenges of conducting this research in Alaska to the extent practical. However, extraordinary time and resources would be needed to overcome all of them completely, for example:

- The challenge of obtaining price data on site in far-flung, isolated communities.
- The challenge of supplementing telephone survey data about household expenditures with more detailed information from, for example, expenditure diaries, and lengthy personal interviews. Both of these supplementary methods are employed in CPI research.
- The fact that many items considered essential in some communities are either not available or not needed in other communities, due to differences in geography and lifestyle.
- The large impact that transportation, shipping, climate, and other factors can have on prices and consumption in specific areas of the state. For example, recent research by the Institute for Social and Economic Research (ISER) demonstrated that shipping anomalies, storage capacity, and other factors can result in large differences in fuel costs between communities that are located relatively close to one another.

⁹ Schultze and Mackie, op. cit. pages 188 – 190.

Alaska GDS 2008 Methodology

Introduction

The methodology employed in the study involved two primary research tasks, a Household Consumption Survey (HCS) and a Retail Price Survey (RPS). The HCS provided data on the relative importance (percentage) of various components of the household budget and how the importance of those components varies from community to community. (Household budget components include such broad categories as housing, food, transportation, etc., each of which is composed of several subcategories, and each subcategory is composed of numerous market basket items.) The RPS provided data on how prices for various items in the household budget differ between communities, or collections of communities, and Anchorage. It is the blend of HCS and RPS data that produces the geographic cost differential. This concept is illustrated in the following table.

Table IV-1: Simplified Geographic Cost Differential Model

	Household Expenditure Category Weight Community "A" (Data from HCS)	Price Differential Community "A" vs. Anchorage (Data from RPS)	Community "A" Cost of Living Differential Factor
Housing	35%	1.35	0.47
Food	20	1.45	0.29
Transportation	15	1.40	0.21
Clothes	5	1.20	0.06
All other	25	1.10	0.28
Total budget	100%		
Community "A" Cost of Living Differential			1.31

Household Consumption Survey

The HCS included 2,547 surveys with randomly selected households located in 74 communities throughout Alaska. Sample blocks were defined for purposes of sample distribution and to ensure sufficient sample sizes in various regions and among communities with common demographic and geographic characteristics. The largest communities (Anchorage, Fairbanks and Juneau) and most populous boroughs (Matanuska-Susitna and Kenai Peninsula) formed their own sample blocks. Smaller communities, similar in terms of location and/or size, were grouped together into sample blocks, and household surveys were distributed within those block in proportion to each community's population.

Alaska's largest population centers were allocated approximately 1,500 of the 2,547 surveys. Anchorage, Fairbanks and Juneau had sample sizes of 300 surveys each. Mat-Su, the Kenai Peninsula Borough, and the Ketchikan/Sitka areas each had 200 surveys. Of the 200 Mat-Su surveys, 13 Talkeetna surveys were allocated to a different sample block, resulting in an actual sample size of 187 for Mat-Su excluding Talkeetna.

Table IV-2: Household Consumption Survey Sample Sizes

Sample Block	Sample Size
1: Anchorage	300
2: Fairbanks	300
3: Parks/Elliott/Steese Highways	65
4: Glennallen Region	50
5: Delta Junction/Tok Region	76
6: Roadless Interior	51
7: Juneau	300
8: Ketchikan/Sitka	200
9: Southeast Mid-Size Communities	104
10: Southeast Small Communities	52
11: Mat-Su	187
12: Kenai Peninsula	200
13: Prince William Sound	100
14: Kodiak	104
15: Arctic Region	153
16: Bethel/Dillingham	151
17: Aleutian Region	77
18: Southwest Small Communities	77

The 50-question HCS collected data on household spending related to housing (including mortgage and rent payment, property taxes, insurance and all utilities), food, transportation, health care, and clothing. The survey also collected data on household size and income. The survey was fielded during October and November 2008.

HCS data management was handled in the statistical software package SPSS. An extensive data cleaning process removed outlier or other irregular values from the analysis. The data management process and SPSS syntax are described in detail in the Statistical Analysis section of this report.

Perhaps the most important data management tool employed was weighting the HCS data so that it represented the demographics of communities more accurately than through a strictly random sample telephone survey data collection effort. For example, telephone survey research is likely to produce disproportionate representation of older, higher income, home-owning households. Younger households are typically more active and therefore less likely to be at home when a surveyor calls. As another example of potential age bias, approximately 12 to 13 percent of Alaska households have only cell phone service, with no conventional land-line phone service. These households (typically urban) would not be captured in a random sample survey (because lists of cell phone numbers are not available for purposes of survey research). These cell-phone-only households are likely to be younger, less likely to own a home, and probably somewhat lower-income than their older neighbors.

To adjust for these potential biases in the survey data, community-level data was weighted using 2000 census information on the proportion of homeowners versus renters. For example, 77 percent of the Anchorage household survey sample were homeowners, while 23 percent were renters. However, the 2000 census found that 60 percent of the occupied housing units in Anchorage are owner-occupied and 40 percent

renter-occupied. (More recently, the 2006 American Community Survey found a 61 percent home ownership rate in Anchorage.) Therefore Anchorage survey data was weighted so that household spending patterns of owners and renters were accurately reflected in the analysis.

Retail Price Survey

The Retail Price Survey (RPS) included 634 retail outlets in 58 communities throughout Alaska, plus numerous providers of various services, including health care, transportation, communications, insurance, and others. A market basket of approximately 200 goods and services was priced in each community where they were available. Data was collected in person and by telephone in the communities listed in the following table.

Table IV-3: Communities included in Retail Price Survey (RPS)

Community	In Person	Phone/Fax	Community	In Person	Phone/Fax
Anchor Point	X		Kotzebue		X
Anchorage	X		Manley Hot Springs		X
Aniak		X	McGrath		X
Barrow		X	Metlakatla	X	
Bethel		X	Nenana	X	
Cantwell		X	Ninilchik	X	
Central		X	Nome	X	
Chitina		X	Palmer	X	
Cordova	X		Pelican		X
Craig	X		Petersburg	X	
Delta Junction	X		Saint Mary's		X
Dillingham		X	Sand Point		X
Eagle		X	Seldovia		X
Emmonak		X	Seward	X	
Fairbanks/North Pole	X		Sitka	X	
Fort Yukon		X	Skagway	X	
Galena		X	Soldotna	X	
Glennallen	X		Talkeetna	X	
Gustavus	X		Teller		X
Haines	X		Tenakee Springs		X
Healy	X		Tok	X	
Homer	X		Unalakleet		X
Hoonah	X		Unalaska/Dutch Harbor		X
Juneau	X		Valdez	X	
Kenai	X		Wasilla	X	
Ketchikan	X		Whittier		X
King Cove		X	Willow	X	
Klawock	X		Wrangell	X	
Kodiak	X		Yakutat		X

Multiple retail outlets were surveyed for each category of retail items. Using groceries as an example, eight stores were surveyed in Anchorage, six in Juneau and six in Fairbanks. In other communities, depending on

the size of the community (and number of local retail outlets), as many as four grocery outlets were surveyed, though in the smallest communities, the survey was necessarily limited to one or two local stores.

All RPS pricing data was compiled and managed in Excel. This data also underwent an extensive cleaning process in which outlier values were removed prior to calculating average prices among specific items. Average prices for a particular item in each community were compared to the average price for the same item in Anchorage to produce a price differential. These individual item price differentials were then averaged with price differentials for other items in the same subcategory of items. For example, the price differential for hot dogs was averaged with the price differential for boneless chicken breasts and several other meat products to determine a subcategory “meats, poultry and fish” average-price differential.

When communities were grouped together to produce sample block or district differentials, all pricing data was weighted according to community population. Where applicable, sales taxes were applied to all retail items. Detailed information regarding the RPS methodology is provided in the Data Collection Methodology section.

Methods and Analysis by Budget Component

Housing

Calculation of housing cost differentials differs from other components of the household budget in that all supporting data was derived from the HCS. Extensive data related to housing costs was collected, including electric power costs, home heating oil costs, etc., but this information was used only as a tool to cross-reference the results of the HCS, which collected detailed housing cost data. In the HCS, households were asked:

- If they own or rent their home.
- The amount of their monthly mortgage or rental payment.
- If their mortgage payment includes property taxes and insurance, and if not, the amount of those annual payments.
- The size of their home, in terms of square feet and number of bedrooms.
- Total monthly or annual payments for electricity, heating oil, natural gas, propane, water, sewer, and garbage disposal.

With this information, sample block and community-level averages were calculated for monthly shelter costs, including mortgage (with property taxes and insurance, when applicable) and rent, and total monthly utilities costs. Community and sample block averages are weighted according to the percentage of owners and renters.

Average monthly shelter costs, monthly heat/utilities costs, and total monthly housing costs are provided in the following table for each sample block and for selected individual communities. Table IV-4 also provides the average total cost per square foot of living space for each sample block and community.

HCS sample sizes are also provided for each sample block and community. Readers should refer to the HCS methodology discussion in Section V for information on the margin of error associated with various sample sizes.

**Table IV-4: Average Total Monthly Housing Costs
and Average Monthly Cost Per Square Foot**

Sample Block/Community		HCS Sample Size	Shelter Cost	Heat/ Utilities Cost	Total Housing Cost
Sample Blocks					
1	Anchorage	300	\$1,303	\$242	\$1,545
2	Fairbanks	300	1,097	422	1,519
3	Parks/Elliott/Steese Highways	65	578	415	993
4	Glennallen Region	50	590	546	1,136
5	Delta Junction/Tok Region	76	712	434	1,146
6	Roadless Interior	51	352	545	897
7	Juneau	300	1,263	386	1,649
8	Ketchikan/Sitka	200	1,033	389	1,422
9	Southeast Mid-Size Communities	105	689	443	1,132
10	Southeast Small Communities	51	579	433	1,012
11	Mat-Su	187	1,047	279	1,326
12	Kenai Peninsula	200	719	301	1,020
13	Prince William Sound	100	892	528	1,421
14	Kodiak	104	1,019	478	1,497
15	Arctic Region	153	942	452	1,394
16	Bethel/Dillingham	151	995	661	1,656
17	Aleutian Region	77	1,006	639	1,645
18	Southwest Small Communities	77	402	606	1,008
Communities					
	Barrow	66	\$1,022	\$295	\$1,317
	Bethel	106	1,073	667	1,740
	Cordova	37	733	497	1,230
	Dillingham	45	805	646	1,450
	Homer	26	799	449	1,248
	Ketchikan	107	1,044	391	1,435
	Kotzebue	44	815	536	1,351
	Nome	48	1,049	550	1,599
	Petersburg	30	815	354	1,169
	Sitka	80	1,015	387	1,402
	Unalaska/Dutch Harbor	51	1,235	597	1,832
	Valdez	60	995	555	1,549

Total monthly housing costs were used to calculate the percentage of the total household budget that is spent on housing. To calculate the contribution of housing costs to the overall sample block/community geographic cost differential, housing's share of the total household budget was multiplied by the housing cost differential.

The housing cost differential was calculated as:

$$\frac{(\text{Sample block or community monthly housing costs per square foot})}{(\text{Anchorage monthly housing costs per square foot})} = \text{Sample block or community housing cost differential}$$

For example, the average per-square-foot cost of housing in Anchorage was measured at \$1.09. The average cost in Juneau was \$1.24. Dividing the Juneau average cost by the Anchorage average cost produced a cost differential of 1.14. The calculations are the same for an area with lower housing costs than Anchorage. For example, the average cost of housing in the Mat-Su Borough was measured at \$0.86 per square foot. Dividing that figure by the Anchorage average cost produced a cost differential of 0.79.

Table IV-5: Average Monthly Housing Costs Per Square Foot and Housing Cost Differential

Sample Block/Community	Ave. Housing Square Foot	Average Cost per Square Foot	Housing Cost Differential
Sample Blocks			
1 Anchorage	1,651	\$1.09	1.00
2 Fairbanks	1,597	1.06	0.98
3 Parks/Elliott/Steese Highways	1,444	0.81	0.74
4 Glennallen Region	1,511	0.79	0.72
5 Delta Junction/Tok Region	1,614	0.99	0.91
6 Roadless Interior	1,102	0.88	0.81
7 Juneau	1,493	1.24	1.14
8 Ketchikan/Sitka	1,581	1.10	1.01
9 Southeast Mid-Size Communities	1,609	0.80	0.74
10 Southeast Small Communities	1,558	0.73	0.67
11 Mat-Su	1,726	0.86	0.79
12 Kenai Peninsula	1,561	0.85	0.78
13 Prince William Sound	1,725	0.98	0.90
14 Kodiak	1,594	1.12	1.03
15 Arctic Region	1,208	1.32	1.22
16 Bethel/Dillingham	1,276	1.68	1.54
17 Aleutian Region	1,296	1.54	1.42
18 Southwest Small Communities	1,327	0.82	0.75
Communities			
Barrow	1,360	\$1.17	1.08
Bethel	1,242	1.88	1.73
Cordova	1,741	0.87	0.80
Dillingham	1,357	1.16	1.06
Homer	1,673	0.86	0.79
Ketchikan	1,639	0.97	0.89
Kotzebue	1,053	1.55	1.42
Nome	1,200	1.34	1.24
Petersburg	1,673	0.80	0.74
Sitka	1,496	1.27	1.17
Unalaska/Dutch Harbor	1,182	1.80	1.65
Valdez	1,738	1.06	0.97

Note: The average cost-per-square foot data presented in this table cannot be generated from other data provided in this and the preceding tables. In the housing cost differential model, all of the various calculations are performed separately for homeowners and renters until a weighted average cost per square foot is calculated.

A range of housing-related data was collected to support the analysis of housing cost differentials, including electric power rates, home heating fuel prices, and natural gas prices. This information is included in the appendices.

Food

Calculation of the food portion of geographic cost differentials involved collecting data on weekly or monthly household food expenditures in seven subcategories and retail price data for a market basket of 80 individual food items. These two sets of data were modeled to produce cost differentials in six food subcategories:

- Meats, poultry, and fish
- Cereals and breads
- Dairy products
- Fruits and vegetables
- Other food items
- Food away from home.

The HCS queried households on their weekly spending in the following food categories:

- Meats, poultry, and fish
- Cereals and breads
- Dairy products
- Fruits and vegetables
- Soups, frozen meals, and snacks
- Nonalcoholic beverages other than milk.

The HCS also collected data on households' monthly spending at restaurants and on take-out food. HCS data was not collected on household expenditures on alcohol or tobacco. The following table provides total monthly spending on food for each sample block and selected communities. Total monthly food costs range from a low of approximately \$600 to a high of approximately \$1,300. These costs reflect the price of food in each sample block or community, as well as average household incomes (higher-income households are likely to spend more on food than lower income households, all other factors being equal).

See table next page

Table IV-6: Average Monthly Household Expenditures on Food

Sample Block/Community		Groceries	Food Away From Home	All Food
Sample Blocks				
1	Anchorage	\$667	\$134	\$801
2	Fairbanks	643	111	753
3	Parks/Elliott/Steese Highways	599	81	680
4	Glennallen Region	754	55	810
5	Delta Junction/Tok Region	526	68	594
6	Roadless Interior	719	66	785
7	Juneau	697	119	817
8	Ketchikan/Sitka	706	98	804
9	Southeast Mid-Size Communities	717	86	803
10	Southeast Small Communities	596	88	683
11	Mat-Su	626	91	717
12	Kenai Peninsula	590	73	663
13	Prince William Sound	790	130	920
14	Kodiak	616	91	706
15	Arctic Region	1,003	106	1,109
16	Bethel/Dillingham	821	95	916
17	Aleutian Region	994	137	1,131
18	Southwest Small Communities	870	48	918
Communities				
	Barrow	\$1,166	\$141	\$1,307
	Bethel	838	107	946
	Cordova	709	133	842
	Dillingham	782	65	847
	Homer	670	83	753
	Ketchikan	747	101	848
	Kotzebue	1,110	91	1,201
	Nome	713	76	789
	Petersburg	689	102	791
	Sitka	645	93	739
	Unalaska/Dutch Harbor	1,106	162	1,268
	Valdez	832	128	960

The 80-item RPS food market basket was priced in 634 different retail outlets throughout the state, with a combination of in-person and telephone price data collection. A listing of items in the food market basket is provided in the Appendix. Prices were collected for a combination of specific brand items and for most popular items (as indicated by item placement and allocation of self-space). Prices were collected from two to as many as eight stores in each community, depending on the population of the community.

The following steps were taken to develop geographic price differentials for each of the six food subcategories:

- Collect price data from multiple stores for each of the 80 items in the market basket.
- Clean data to ensure comparability of prices for specific items. In some instances, price data for specific items was excluded from the analysis if the price was an obvious outlier (the price was far below or far above prices for the same item in other stores in that community). Sale prices were not included in the sample.
- Calculate a weighted average price for each item, with prices weighted according to the results of question 25 in the HCS, which asked respondents where they did a majority of their grocery shopping. This step was necessary to ensure that the price of an item at a small convenience store did not have the same affect on average pricing as does the price of the same item from a store where many more people shop and the item is sold in much greater quantities.
- Apply sales tax in locations where such taxes are levied. This increased the price of each item by the sales tax rate and produced the actual price paid by the consumer.
- Calculate price differentials for each item by dividing each item's weighted average price by the weighted average price of the same item in Anchorage.
- Calculate the average price differential for all items in each subcategory.
- Minimize the potential for an unrepresentative price or set of prices for a particular item to skew the overall differential for a food subcategory. This was accomplished by removing the highest and lowest average prices for specific food items from the calculation of the average price differential for each subcategory. In a majority of cases (but not all), the average differential without the high and low weighted average prices was nearly identical to the average differential including all items in the subcategory.

Summary data for food cost geographic differentials are presented in the following table. The table presents the total expenditure weight for the food portion of the household budget (ranging between 14 percent and 20 percent) and the overall average price differential for all food items (ranging from 1.00 to 1.84).

See table next page

Table IV-7: Food Cost Expenditure Weights and Price Differentials

Sample Block/Community		Expenditure Weights	Price Differential
Sample Blocks			
1	Anchorage	0.17	1.00
2	Fairbanks	0.16	1.03
3	Parks/Elliott/Steese Highways	0.16	1.10
4	Glennallen Region	0.20	1.09
5	Delta Junction/Tok Region	0.14	1.09
6	Roadless Interior	0.17	1.55
7	Juneau	0.15	1.03
8	Ketchikan/Sitka	0.17	1.17
9	Southeast Mid-Size Communities	0.18	1.22
10	Southeast Small Communities	0.18	1.22
11	Mat-Su	0.16	1.03
12	Kenai Peninsula	0.19	1.15
13	Prince William Sound	0.17	1.31
14	Kodiak	0.17	1.33
15	Arctic Region	0.18	1.69
16	Bethel/Dillingham	0.15	1.70
17	Aleutian Region	0.18	1.46
18	Southwest Small Communities	0.19	1.79
Communities			
	Barrow	0.18	1.78
	Bethel	0.15	1.72
	Cordova	0.15	1.42
	Dillingham	0.16	1.64
	Homer	0.18	1.13
	Ketchikan	0.17	1.18
	Kotzebue	0.19	1.84
	Nome	0.17	1.51
	Petersburg	0.14	1.25
	Sitka	0.17	1.15
	Unalaska/Dutch Harbor	0.17	1.43
	Valdez	0.18	1.26

Transportation

The transportation category includes seven subcategories:

- Fuel for all vehicles
- Car/truck ownership
- All other vehicle ownership
- Auto insurance
- Vehicle maintenance
- Interstate air travel
- Instate air/ferry travel

In the HCS, households were asked for:

- Monthly spending on fuel for all vehicles
- Monthly payments for vehicles of all types (by type of vehicle)
- Total spending in the last 12 months on maintenance for all vehicles
- Total spending in the last 12 months on insurance for all vehicles
- Total spending in the last 12 months on plane tickets for destinations outside of Alaska, not including business travel
- Total spending in the last 12 months on plane tickets for destinations within Alaska, not including business travel. (Average total annual household spending on ferry travel was compiled directly from AMHS data.)

Total vehicle expense (including vehicle payments on loans, fuel, maintenance, and insurance) ranged from a low of \$424 a month to a high of \$959. A variety of factors influence vehicle-related spending, including the extent of road infrastructure in and around each community, cost of fuel, geographic setting (with boats more prevalent in some areas, and snowmachines and four-wheelers more prevalent in others), average household income (with higher income households likely to own more vehicles), and other factors. It is important to note that record high fuel prices in 2008 are reflected in this data and that differences in costs between urban and rural areas are likely exaggerated relative to previous years (or future years) when prices are more moderate.

See table next page

Table IV-8: Average Monthly Transportation Costs

Sample Block/ Community		Total Vehicle Payments	Total Fuel	Vehicle Maintenance	Vehicle Insurance	Total Vehicle Expense
Sample Blocks						
1	Anchorage	\$173	\$257	\$79	\$119	\$629
2	Fairbanks	297	335	110	140	881
3	Parks/Elliott/Steese Highways	192	281	111	142	726
4	Glennallen Region	251	360	95	106	812
5	Delta Junction/Tok Region	259	323	99	125	806
6	Roadless Interior	213	381	65	55	715
7	Juneau	190	250	67	92	599
8	Ketchikan/Sitka	137	187	61	89	474
9	Southeast Mid-Size Communities	145	242	59	84	531
10	Southeast Small Communities	70	212	68	74	424
11	Mat-Su	217	351	84	124	776
12	Kenai Peninsula	207	258	68	98	631
13	Prince William Sound	266	417	85	125	893
14	Kodiak	191	212	62	80	545
15	Arctic Region	169	211	78	78	536
16	Bethel/Dillingham	121	311	85	95	611
17	Aleutian Region	117	267	98	89	572
18	Southwest Small Communities	202	461	76	47	786
Communities						
	Barrow	\$187	\$244	\$98	\$101	\$629
	Bethel	112	295	84	97	587
	Cordova	217	538	81	123	959
	Dillingham	142	348	87	89	667
	Homer	194	211	93	119	617
	Ketchikan	166	209	70	97	543
	Kotzebue	109	139	56	44	349
	Nome	221	255	81	91	648
	Petersburg	130	189	59	94	471
	Sitka	94	155	46	77	373
	Unalaska/ Dutch Harbor	87	277	105	93	562
	Valdez	302	351	88	127	869

Annual household expenditures on air and ferry travel ranged from a low of about \$800 to a high of nearly \$6,000. Logically, households in hub communities spend less on in-state travel than remote communities. Again, households in communities with higher average incomes spend more on travel, especially out-of-state travel, than households with lower average incomes. Areas reporting very low in-state travel spending include communities on the Southcentral and Interior Alaska highway network. Households on the highway network

probably travel to hub communities more often than households off the highway network, but their travel costs are captured in the vehicle expense data presented above.

Table IV-9: Average Annual Household Expenditures on Air/Ferry Travel

Sample Block/Community	In-State Air/Ferry Travel	Out-of-State Air Travel	Total Travel
Sample Blocks			
1 Anchorage	\$156	\$1,639	\$1,794
2 Fairbanks	255	1,831	2,086
3 Parks/Elliott/Steese Highways	395	1,694	2,089
4 Glennallen Region	12	815	827
5 Delta Junction/Tok Region	276	697	973
6 Roadless Interior	2,903	887	3,790
7 Juneau	430	1,760	2,190
8 Ketchikan/Sitka	367	1,536	1,903
9 Southeast Mid-Size Communities	509	1,055	1,565
10 Southeast Small Communities	1,009	1,056	2,065
11 Mat-Su	92	926	1,018
12 Kenai Peninsula	384	982	1,366
13 Prince William Sound	680	2,006	2,686
14 Kodiak	596	1,578	2,173
15 Arctic Region	2,233	2,170	4,403
16 Bethel/Dillingham	1,941	1,342	3,283
17 Aleutian Region	2,398	1,984	4,382
18 Southwest Small Communities	2,142	1,319	3,461
Communities			
Barrow	\$3,219	\$2,759	\$5,978
Bethel	2,160	1,501	3,660
Cordova	755	2,255	3,010
Dillingham	1,432	974	2,407
Homer	327	877	1,204
Ketchikan	224	1,463	1,686
Kotzebue	2,469	2,823	5,292
Nome	1,099	1,145	2,244
Petersburg	475	1,506	1,981
Sitka	583	1,647	2,229
Unalaska/Dutch Harbor	2,711	2,391	5,103
Valdez	649	1,893	2,542

The RPS produced the following transportation-related price data, which was used to calculate cost differentials in each of the six transportation sub-categories:

- Regular unleaded gasoline and diesel fuel from service stations in 80 communities
- Purchase prices for a new truck, passenger car, snow machine, and four-wheeler
- Cost of an oil and filter change at a service station and the purchase price of motor oil, antifreeze, and a car battery

- Six-month premium for auto insurance (estimates from GEICO, Progressive and Allstate)
- Cost of a round-trip flight from each community to Seattle, including in-state air travel to a hub airport, if necessary
- Cost of a round-trip flight from each community to the nearest major hub (Anchorage, Fairbanks or Juneau). Price differentials for Juneau and Fairbanks were set at 1.0, equal to that of Anchorage.

Summary data for transportation cost geographic differentials are presented in the following table. The table presents the total expenditure weight for the transportation portion of the household budget (ranging between 12 percent and 24 percent) and the overall average price differential for all transportation goods and services (ranging from 1.00 to 2.35).

Table IV-10: Transportation Expenditure Weights and Price Differentials

Sample Block/Community	Expenditure Weights	Price Differential
Sample Blocks		
1 Anchorage	0.15	1.00
2 Fairbanks	0.21	1.04
3 Parks/Elliott/Steese Highways	0.20	1.10
4 Glennallen Region	0.24	1.14
5 Delta Junction/Tok Region	0.20	1.08
6 Roadless Interior	0.20	1.49
7 Juneau	0.14	1.09
8 Ketchikan/Sitka	0.13	1.10
9 Southeast Mid-Size Communities	0.16	1.16
10 Southeast Small Communities	0.12	1.19
11 Mat-Su	0.20	1.04
12 Kenai Peninsula	0.17	1.16
13 Prince William Sound	0.18	1.18
14 Kodiak	0.17	1.25
15 Arctic Region	0.15	1.72
16 Bethel/Dillingham	0.16	1.55
17 Aleutian Region	0.15	2.08
18 Southwest Small Communities	0.21	1.70
Communities		
Barrow	0.16	1.61
Bethel	0.14	1.56
Cordova	0.19	1.20
Dillingham	0.21	1.57
Homer	0.17	1.20
Ketchikan	0.14	1.09
Kotzebue	0.13	1.94
Nome	0.16	1.60
Petersburg	0.14	1.09
Sitka	0.12	1.10
Unalaska/Dutch Harbor	0.15	2.35
Valdez	0.17	1.17

Clothing

The HCS collected data on average monthly household spending on clothing, and the percentage spent locally versus outside the local area (including Internet and catalogue purchases). Clothing expenditure data for sample blocks and selected communities is presented in the following table. Average annual expenditures on clothing ranged from approximately \$700 to more than \$2,000.

Table IV-11: Clothing Expenditures, Percent Local and Nonlocal

Sample Block/Community		Average Annual Expenditures	Percent Local Purchases	Percent Nonlocal Purchases
Sample Blocks				
1	Anchorage	\$973	77%	23%
2	Fairbanks	1,062	69	31
3	Parks/Elliott/Steese Highways	774	6	94
4	Glennallen Region	933	3	97
5	Delta Junction/Tok Region	685	4	96
6	Roadless Interior	1,535	1	99
7	Juneau	951	53	47
8	Ketchikan/Sitka	872	46	54
9	Southeast Mid-Size Communities	844	27	73
10	Southeast Small Communities	400	21	79
11	Mat-Su	732	56	44
12	Kenai Peninsula	706	44	56
13	Prince William Sound	1,033	16	84
14	Kodiak	697	50	50
15	Arctic Region	1,437	11	89
16	Bethel/Dillingham	971	24	76
17	Aleutian Region	1,431	6	94
18	Southwest Small Communities	1,580	7	93
Communities				
	Barrow	\$2,057	10%	90%
	Bethel	961	23	77
	Cordova	899	5	95
	Dillingham	992	26	74
	Homer	601	36	64
	Ketchikan	844	53	47
	Kotzebue	1,198	12	88
	Nome	989	13	87
	Petersburg	785	41	59
	Sitka	913	38	62
	Unalaska/Dutch Harbor	1,439	8	92
	Valdez	1,128	22	78

The RPS included 23 clothing items. Not all items were available in all communities, but all items are available to all residents through mail order or Internet purchases. In cases where items were not available locally, a mail order or Internet price was identified and appropriate shipping costs applied to that price. Depending on the retailer, shipping costs ranged from free to 32 percent of the item's retail cost, with an average of about 10 percent on most items in most communities.

One outcome of this approach is that some mid-size communities, where all the items in the clothing market basket are available locally, are shown to have higher clothing cost differentials than more remote communities where some of the items are unavailable. This is because items may be available through mail order at a lower cost than prices in mid-size communities.

The challenge with developing price differentials for clothing is the tendency to buy clothing while traveling or via mail order/Internet, even among urban residents. Clothing prices for small communities on the highway system, in particular, have price differentials that match nearby hub communities because that is where most of the clothing shopping occurs. In any case, survey research suggests that clothing is a comparatively small part of the household budget (relative to housing, food and transportation) and therefore applying significantly higher (or lower) clothing price differentials would have negligible effects on a community's overall geographic cost differential.

See table next page

Table IV-12: Clothing Expenditure Weights and Price Differentials

Sample Block/Community	Expenditure Weight	Price Differential
Sample Blocks		
1 Anchorage	0.017	1.00
2 Fairbanks	0.017	1.17
3 Parks/Elliott/Steese Highways	0.013	1.11
4 Glennallen Region	0.021	1.00
5 Delta Junction/Tok Region	0.013	1.16
6 Roadless Interior	0.021	1.24
7 Juneau	0.013	1.02
8 Ketchikan/Sitka	0.013	1.12
9 Southeast Mid-Size Communities	0.017	1.23
10 Southeast Small Communities	0.010	1.21
11 Mat-Su	0.014	0.93
12 Kenai Peninsula	0.015	1.17
13 Prince William Sound	0.014	1.06
14 Kodiak	0.014	0.94
15 Arctic Region	0.015	1.29
16 Bethel/Dillingham	0.017	1.09
17 Aleutian Region	0.019	1.09
18 Southwest Small Communities	0.023	1.11
Communities		
Barrow	0.022	1.29
Bethel	0.017	1.03
Cordova	0.012	1.11
Dillingham	0.018	1.25
Homer	0.012	1.21
Ketchikan	0.012	1.00
Kotzebue	0.014	1.30
Nome	0.011	1.27
Petersburg	0.012	1.40
Sitka	0.013	1.31
Unalaska/Dutch Harbor	0.019	1.08
Valdez	0.015	1.04

Medical

The HCS collected household medical-related expenditure data in two subcategories:

- Monthly spending on medical insurance, not including payments covered by employers
- Spending in the last 12 months on medical expenses not covered by insurance, not including travel costs.

Table IV-13 provides annual medical-related spending for each sample block and selected communities. Total reported spending ranges widely, from approximately \$1,700 to nearly \$5,700 annually. Access to

medical care, insurance coverage and household income are factors affecting medical-related household spending averages.

Table IV-13: Annual Medical Expenditures

Sample Block/Community		Medical Insurance	Medical Expenses Not Covered by Insurance	Total Medical Expenditures
Sample Blocks				
1	Anchorage	\$1,796	\$1,465	\$3,260
2	Fairbanks	2,033	1,371	3,404
3	Parks/Elliott/Steese Highways	3,010	2,657	5,667
4	Glennallen Region	866	1,116	1,982
5	Delta Junction/Tok Region	1,940	1,090	3,030
6	Roadless Interior	1,407	1,136	2,543
7	Juneau	1,826	1,262	3,088
8	Ketchikan/Sitka	1,876	1,567	3,443
9	Southeast Mid-Size Communities	2,221	1,916	4,137
10	Southeast Small Communities	1,545	859	2,404
11	Mat-Su	1,749	1,979	3,729
12	Kenai Peninsula	1,524	1,520	3,044
13	Prince William Sound	2,584	2,219	4,803
14	Kodiak	1,523	1,085	2,608
15	Arctic Region	872	856	1,728
16	Bethel/Dillingham	1,717	1,340	3,057
17	Aleutian Region	1,590	1,747	3,336
18	Southwest Small Communities	1,047	985	2,032
Communities				
	Barrow	\$737	\$996	\$1,733
	Bethel	1,668	1,254	2,922
	Cordova	2,789	2,572	5,361
	Dillingham	1,837	1,553	3,390
	Homer	1,475	2,347	3,822
	Ketchikan	2,166	1,936	4,102
	Kotzebue	827	948	1,775
	Nome	1,081	645	1,726
	Petersburg	2,818	1,448	4,267
	Sitka	1,423	1,036	2,459
	Unalaska/Dutch Harbor	1,888	1,838	3,726
	Valdez	2,487	2,057	4,544

The medical-related RPS market basket was composed of 14 services and goods. Health care providers were asked for billing rates by service and billing code, including the following:

- Adult physical exam (age 18-39, age 40-64, age 65+)
- Well-child physical (age 0-11 months, age 1-4, age 5-11, age 12-17)
- Physician office visit

- Hospital, one-bed day (Medical/surgical)
- Dental exam
- Dental cleaning (adult, child), filling
- Eye exam
- Eyeglasses, lens/frame.

To calculate price differentials, prices were averaged in four categories: adult exams, well-child exams, other medical (physician office visit, hospital stay, eye), and dental care. Averages in these categories were divided by Anchorage prices in the same categories to produce differentials. From these differentials, an average medical differential was calculated, as was an average dental differential. These were then averaged (weighted 75 percent medical and 25 percent dental) to produce one overall medical services differential.

Data to support calculation of price differentials for health insurance was not collected, as geography generally is not a factor in the cost of insurance premiums. As such, all sample blocks were given an insurance cost differential of 1.00.

Table IV-14 provides expenditure weights and price differentials for each sample block and selected community. The price differential for the medical category is the average of the medical services differential and the medical insurance differential (1.00 for all sample blocks).

See table next page

Table IV-14: Medical Expenditure Weights and Price Differentials

Sample Block/Community		Expenditure Weight	Price Differential
Sample Blocks			
1	Anchorage	0.05	1.00
2	Fairbanks	0.05	1.07
3	Parks/Elliott/Steese Highways	0.10	1.05
4	Glennallen Region	0.04	0.96
5	Delta Junction/Tok Region	0.04	1.01
6	Roadless Interior	0.05	1.03
7	Juneau	0.05	1.03
8	Ketchikan/Sitka	0.06	1.03
9	Southeast Mid-Size Communities	0.08	0.98
10	Southeast Small Communities	0.05	1.01
11	Mat-Su	0.06	1.00
12	Kenai Peninsula	0.07	0.98
13	Prince William Sound	0.07	0.93
14	Kodiak	0.04	0.94
15	Arctic Region	0.03	1.05
16	Bethel/Dillingham	0.03	1.05
17	Aleutian Region	0.04	1.00
18	Southwest Small Communities	0.03	1.03
Communities			
	Barrow	0.02	1.14
	Bethel	0.03	1.04
	Cordova	0.08	0.92
	Dillingham	0.05	1.08
	Homer	0.06	1.03
	Ketchikan	0.06	1.04
	Kotzebue	0.03	0.91
	Nome	0.03	1.05
	Petersburg	0.06	0.94
	Sitka	0.05	1.02
	Unalaska/Dutch Harbor	0.04	0.98
	Valdez	0.07	0.92

All Other Household Expenditure Components

The components of the household budget described above (including housing, food, transportation, clothing, and medical) account for about 65 to 75 percent of the average household budget. The remainder of the typical household budget is composed of a broad range of goods and services. For purposes of this study, these have been grouped into the following categories:

- **Household furnishings and appliances:** furniture, furnishings, large and small appliances, tools, and household supplies. The category also includes televisions and other video equipment, stereos and other audio equipment, computers and related equipment.

- **Communications:** telephones/cell phones and related services, Internet services, cable TV, postage and delivery services.
- **Recreation and education:** sporting goods, toys, reading materials (newspapers and magazines), photography. Also includes pet food and supplies, tuition and related fees, and child-care services.
- **Personal care and other:** personal-care products and services, laundry services, legal and financial services. Other includes tobacco and alcohol.

The HCS did not collect data relevant to these spending categories and limited RPS data was collected to support the analysis of cost differentials.

Weighting (to reflect relative importance in the household budget) of various components within this category was accomplished by weighting each component in the same proportion as those components occur in the Anchorage Consumer Price Index (CPI). For example, CPI data indicates that this category accounts for approximately 22 percent of the after-tax household budget in Anchorage. Within the category, about one-third (32 percent) of the budget is for household furnishings and appliances, 13 percent for communication, 33 percent for recreation and education, and 22 percent for personal care and other. Regardless of how much of a community's average household budget was captured by the HCS, the uncaptured portion was distributed among the "all other" subcategories according to these percentages. Table IV-15 illustrates this methodology.

**Table IV-15: Estimation of Expenditure Weights
in Spending Categories not Measured in the HCS**

(Hypothetical Sample Block where 30 percent of Household Budget was not captured in HCS)

	Relative Importance from CPI Anchorage Data	Relative Importance within "All Other" Category	"All Other" Subcategory Expenditure Weights for Sample Block
Household furnishings/ appliances	7%	32%	9.6%
Communication	3	13	4.0
Recreation/education	7	33	9.8
Personal care/other	5	22	6.7
Total all other	21%	100%	30%

For calculation of price differentials in the "all other" category, the RPS collected prices for 23 items in the household furnishings and appliances category, seven communications services, and nine personal care items. The RPS also collected prices for one brand of cigarettes, seven different drinks at a bar and six alcohol items for consumption at home.

The communication price differential was calculated as the average of the monthly cost of basic and preferred cable (or satellite), Internet dial-up, Internet-DSL, phone, long distance rate per minute (in-state), and monthly wireless. If a particular service was not available in a community, that service was not included in the average.

Calculating the price differential for the recreation/education category was a two-step process. First, a recreation price differential was calculated as the average (unweighted) of price differentials for food (to account for pet food), clothing (proxy for toys, reading material, small sporting goods) and appliances (proxy for larger sporting good items). The price differential for education was set at 1.00 for all sample blocks and

communities, as identifying a meaningful education market basket suitable for Alaska communities was considered by the study team to be impractical.

The second step in calculating the price differential for the recreation/education category was to calculate the average of the recreation component and the education component, with recreation weighted at two-thirds and education at one-third.

The price differential of the personal care/other subcategory is the weighted average of the personal care market basket in the RPS (excluding tobacco), tobacco, and alcohol, weighted personal care 60 percent, alcohol 25 percent, and tobacco 15 percent. In dry communities, alcohol was not included in the average.

Table IV-16 provides expenditure weights and price differentials for the “all other” category.

Table IV-16: All Other Expenditure Weights and Price Differentials

Sample Block/Community		Expenditure Weight	Price Differential
Sample Blocks			
1	Anchorage	0.28	1.00
2	Fairbanks	0.25	1.05
3	Parks/Elliott/Steese Highways	0.29	1.06
4	Glennallen Region	0.23	1.02
5	Delta Junction/Tok Region	0.31	1.09
6	Roadless Interior	0.33	1.43
7	Juneau	0.32	1.14
8	Ketchikan/Sitka	0.29	1.15
9	Southeast Mid-Size Communities	0.30	1.21
10	Southeast Small Communities	0.34	1.20
11	Mat-Su	0.27	1.01
12	Kenai Peninsula	0.28	1.05
13	Prince William Sound	0.28	1.11
14	Kodiak	0.27	1.06
15	Arctic Region	0.34	1.50
16	Bethel/Dillingham	0.34	1.38
17	Aleutian Region	0.29	1.40
18	Southwest Small Communities	0.34	1.53
Communities			
	Barrow	0.37	1.54
	Bethel	0.36	1.36
	Cordova	0.37	1.23
	Dillingham	0.29	1.44
	Homer	0.30	1.04
	Ketchikan	0.29	1.11
	Kotzebue	0.38	1.55
	Nome	0.29	1.40
	Petersburg	0.40	1.21
	Sitka	0.29	1.22
	Unalaska/Dutch Harbor	0.30	1.37
	Valdez	0.25	1.05

Note on Subsistence-Related Activity

Subsistence harvests are a critically important part of many households' budgets. Within the framework of this study, the cost of subsistence activity is captured in the categories of transportation (vehicles and fuel), furnishings and appliances (outdoor equipment and supplies), and recreation (which includes "sporting goods"). The HCS asked for the percentage of household food supply obtained from activities such as hunting, fishing, gardening or berry-picking. The results of that question for each sample block are provided in the following table.

While subsistence activity was not factored into the differentials for each GDP, it reinforces the wide variations in expenditures related to food, transportation and recreation activities.

Table IV-17: Importance of Hunting, Fishing, Gardening, and Gathering in Household Food Supply

Sample Block	None	Less than 25%	25% to 50%	51% to 75%	More than 75%
1 Anchorage	37%	41%	18%	3%	1%
2 Fairbanks	30	44	19	4	1
3 Parks/Elliott/Steese Highways	26	40	17	15	2
4 Glennallen Region	10	28	28	20	14
5 Delta Junction/Tok Region	12	41	24	17	5
6 Roadless Interior	2	18	31	35	12
7 Juneau	37	45	13	3	2
8 Ketchikan/Sitka	27	46	21	5	2
9 Southeast Mid-Size Communities	9	48	22	13	2
10 Southeast Small Communities	12	27	31	21	6
11 Mat-Su	27	34	28	7	4
12 Kenai Peninsula	15	46	31	7	2
13 Prince William Sound	13	37	33	12	3
14 Kodiak	13	32	39	10	3
15 Arctic Region	14	32	27	19	7
16 Bethel/Dillingham	12	30	28	21	7
17 Aleutian Region	25	39	30	5	1
18 Southwest Small Communities	-	17	32	31	18

Section V: Data Collection Methodology

Household Consumption Survey

Overview

The purpose of the Household Consumption Survey (HCS) was to identify proportional expenditure patterns for the major market basket components for each GDP. The survey data was then used as the basis for development of statistical weights for each major consumption category.

The 50-question HCS collected data on household spending related to housing (including all utilities), food, transportation, health care, and clothing. The survey also collected data on household size and income. The HCS included 2,547 surveys with randomly selected households located in 74 communities throughout Alaska.

Survey Content Development

The project team began by conducting a review of the survey instrument used in the 1985 study, as well as a detailed analysis of the application of the data. Survey completion time in 1985 ranged from approximately 25 minutes to an hour. This length was deemed far too long in the modern survey environment and would have resulted in a high number of initial refusals and mid-survey terminations.

The updated survey instrument retained essential questions regarding housing, household size, income, and estimated expenditures for major components of the household budget. After briefly introducing the study purpose, the surveyor asked to speak with the person most familiar with the household's spending. The initial questions in the survey addressed household size and expenditures for shelter, fuels and utilities. Shelter costs captured data on mortgage payments, property taxes and insurance, rental costs and condo fees. Respondents were asked to estimate living space size, which allowed the study team to calculate average cost per square foot for each location. Fuel consumption categories included oil, natural gas, propane, coal, kerosene, electricity, and firewood. Utility categories included water, sewer, and garbage services.

The major expenditure components of the survey were based on Consumer Price Index categories, including food and beverage, apparel, transportation, medical care, and other goods and services. In addition to estimating household expenditures in dollar amounts, respondents were asked to allocate their spending as a percentage of their income for four major categories. The percentages were used to corroborate findings from the previous questions.

The survey instrument was pretested in numerous rural and urban communities. Average completion time during the pretest phase was approximately 15 minutes. The State of Alaska had an opportunity to review and comment on the survey instrument before fielding. A copy of the final survey instrument is included in the Appendix.

Sample Distribution

The first step in devising the sample distribution was developing a community profile for each Alaska location with one or more state employees. Employment data for 2007 and 2008 was provided by the Department of Administration. Additional information in the community profiles included population, per capita income, median household income, number of households, household size, borough or census area, median home value, median mortgage payment, median rental payment, and percentage of adults in the labor force. The profiles also included information about the closest major hub community, distance to the hub, and if there was access by road, ferry, barge, or airplane. Finally, the project team classified each community in terms of the 1985 GDP pools and current House and Senate election districts. Numerous data sources were utilized including 2000 Census data, Alaska Department of Labor and Workforce Development data, and information from the Division of Elections.

Following a detailed analysis of the community profile data, a total of 18 sample blocks were defined for purposes of sample distribution. The sample blocks ensured sufficient sample sizes in various regions for statistical analysis, especially critical for communities with very small populations. The largest communities and most populous boroughs formed their own sample blocks. Small and mid-size communities were grouped with others that shared similar demographic and geographic characteristics. Within each sample block, household surveys were distributed in proportion to community population.

Together, Alaska's largest population centers were allocated 1,500 of the 2,547 surveys. Anchorage, Fairbanks and Juneau had sample sizes of 300 surveys each. Two hundred surveys were assigned to the sample blocks for the Mat-Su region, Kenai Peninsula Borough, and the combined Ketchikan/Sitka area. The rest of the surveys (1,047) were distributed among the remaining sample blocks on the basis of population and number of state employees.

The table below shows the number of completed surveys in each of the 18 sample blocks and the maximum margin of error associated with each sample. Due to the nature of response distribution in sample statistics, most survey responses are more accurate than the maximum margin of error suggests.

It is important to note that the telephone survey did not include every single Alaska location. Instead, the sample plan was developed to ensure that every Alaska location with a state employee was included in the HCS and RPS data collection efforts. As a result of this approach, the study population represented 92 percent of the statewide population. Surveying the remaining Alaska residents proportionally by population would have further minimized the sample sizes for communities with state employees, and resulted in extremely small sample sizes for any additional communities included in the study.

See table next page

**Table V-1: Household Consumption Survey Sample Sizes
and Associated Margins of Error**

Sample Block	Sample Size	Maximum Margin of Error
1: Anchorage	300	±5.8%
2: Fairbanks	300	5.8
3: Parks/Elliott/Steese Highways	65	12.0
4: Glennallen Region	50	14.2
5: Delta Junction/Tok Region	76	11.5
6: Roadless Interior	51	13.5
7: Juneau	300	5.8
8: Ketchikan/Sitka	200	7.1
9: Southeast Mid-Size Communities	104	10.0
10: Southeast Small Communities	52	14.2
11: Mat-Su	187	7.2
12: Kenai Peninsula	200	7.1
13: Prince William Sound	100	10.0
14: Kodiak	104	10.0
15: Arctic Region	153	8.2
16: Bethel/Dillingham	151	8.2
17: Aleutian Region	77	11.5
18: Southwest Small Communities	77	11.5

While communities were clustered into the sample blocks to ensure that the HCS sample was large enough for statistical analysis, a unique identifying number was assigned to each community. Any data collected during the study was consistently assigned the appropriate community number (including HCS, RPS, and secondary data), preserving the project team's ability to analyze the study findings in any community combination.

Statistical Reliability

Statistical tolerances are based on the assumption that when a sample is drawn randomly from a sufficiently large population, survey responses will be distributed within a predictable range if the survey were to be replicated. The margin of error is a function of both sample size and the variability of responses. A sample size of 50 may have a margin of error as low as ±2.8 percent, or as high as ±14.2 percent, depending on the uniformity of responses to each survey question. The ranges associated with survey sample sizes in this study are provided in the following table.

Table V-2: Margin of Error Ranges

Sample Size	Margin Of Error Ranges
50	± 2.8 - 14.2%
75	2.3 - 11.5
100	2.0 - 10.0
150	1.6 - 8.2
200	1.4 - 7.1
250	1.2 - 6.3
300	1.1 - 5.8

Other factors that affect statistical reliability include the size of the population and “nonsampling” sources of error, such as biased wording of questions or inconsistent recording of responses. In general, samples drawn from very small populations have lower margin of error ranges. Careful sample control and fielding procedures were employed to minimize nonsampling errors.

Another factor that can affect the statistical reliability of household telephone surveys is the number of households that only utilize cell phones. Major Alaska phone service providers estimate that 12 to 13 percent of the population falls into this category. The project team compared the HCS data to census data and other secondary research and determined that no systemic bias resulted from calling households with traditional phone lines.

Fielding Protocols

A household telephone survey was utilized for this study, as it offered a superior degree of statistical reliability and efficiency when compared to alternative methods such as mail surveys, Internet-based surveys or personal intercept interviews.

McDowell Group collaborated with GMA Research of Bellevue, Wash. to field the survey. GMA Research conducted 1,500 surveys in the seven most-populated areas in the state: Municipality of Anchorage, Fairbanks North Star Borough, City and Borough of Juneau, Ketchikan Gateway Borough, City and Borough of Sitka, Mat-Su Borough, and Kenai Peninsula Borough. Telephone lists were purchased from Survey Sampling Inc., a source frequently used for this type of research. Telephone numbers were randomly selected, ensuring all households had an equal opportunity of being selected in the sample.

McDowell Group conducted the phone surveys in the remaining communities. Households were randomly selected from published phone directories. A minimum of three calls were made to each primary number over a period of several days before selection of a secondary number. The field staff adhered to strict protocols prescribing the method for selection of an alternative household if contact could not be established or a household declined to participate in the study.

In all communities, respondents were screened for the person that was most familiar with household spending. Surveys were conducted on weekday evenings and weekend days allowing for maximum participation.

McDowell Group developed fielding protocols, conducted survey pretests, and conducted all surveys in rural communities. To ensure consistency of training and protocol implementation, McDowell Group project

management was present when GMA Research survey staff was trained and commenced surveying. Field management staff from the two firms communicated daily throughout fielding, data entry and statistical analysis. Survey field managers and staff in both locations were briefed frequently to ensure data was captured consistently.

Phone Survey Disposition

The telephone surveys were conducted between October 10 and November 15, 2008. The average HCS length was approximately 13 minutes. The total number of completed surveys was 2,547. Total contacts and refusals were tracked separately by GMA Research and McDowell Group. Results for each survey fielding location are provided below.

Surveys for the larger, urban areas were conducted using Computer Assisted Telephone Interviews (CATI). More than 19,500 calls were made. Approximately 11 percent of those contacted declined to participate, either through an initial refusal or mid-survey termination. Of the remaining calls, nearly 16,000 resulted in no contact (such as message machine, no answer, out of service, or fax). A total of 1,500 household surveys in urban areas were completed. GMA did not retain data from surveys that were terminated before completion.

In small communities, a total of 6,206 calls were made. Approximately 18 percent of the households declined to participate. Of the remaining 5,060 calls, approximately 4,000 resulted in no contact (such as message machine, no answer, out of service, or fax). A total of 1,047 household surveys in rural communities were completed. In a few instances, McDowell Group included responses from nearly completed surveys in the final data set to add to the statistical reliability at the community and sample block level.

The call disposition is typical for telephone survey research. In the 1985 GDS, a total of 23,065 calls were completed; 18,834 of the calls resulted in no contact (no answer, busy, disconnected, fax, or a business listing).

Table V-3: HCS Phone Survey Disposition

Survey Fielding Location	Completed Calls
GMA Research/Urban Areas	
Total calls	19,532
Initial refusals/terminations	2,092
No contact	15,950
Completed interviews	1,500
McDowell Group/Small Communities	
Total calls	6,206
Initial refusals/terminations	1,146
No contact	4,013
Completed interviews	1,047

All HCS data was entered into a single database. HCS data management was handled in both Microsoft Excel and SPSS. An extensive data cleaning process removed outlier or other irregular values from the analysis.

Survey Distribution by Community

The table below provides detailed information at the community level for each sample block. The number of surveys allocated to each sample block was influenced by population and number of state employees. For sample blocks comprised of multiple communities, surveys were distributed proportionally according to community population.

Table V-4: Household Consumption Survey Sample Sizes, Population and State Employees

Sample Block and Community	Sample Size	2007 Population	State Employees
1: Anchorage	300	283,823	5,192
2: Fairbanks North Star Borough	300	90,963	1,581
3: Healy	22	1,027	9
3: Cantwell	4	183	14
3: Central	2	95	4
3: Nenana	7	357	7
3: Manley Hot Springs	1	72	2
3: Talkeetna	29	848	9
4: Glennallen	41	1,845	34
4: Chitina	3	124	6
4: Paxson	1	32	6
4: Slana	3	108	7
4: Tazlina	2	219	25
5: Delta Junction	53	3,836	46
5: Tok	21	1,353	56
5: Eagle	1	109	5
5: Northway	1	81	7
6: Galena	21	609	11
6: Fort Yukon	20	591	2
6: McGrath	10	315	26
7: Juneau	300	30,305	3,361
8: Ketchikan	120	13,160	673
8: Sitka	80	8,640	198
9: Craig	13	1,359	13
9: Haines	23	2,257	51
9: Klawock	7	743	12
9: Metlakatla	12	1,282	1
9: Petersburg	30	3,071	48
9: Wrangell	19	1,947	22
10: Hoonah	14	852	6
10: Skagway	14	845	13
10: Yakutat	10	621	15
10: Elfin Cove	1	21	1
10: Gustavus	8	442	2
10: Pelican	3	110	1

Table V-4 cont'd: Household Consumption Survey Sample Sizes, Population and State Employees

Sample Block and Community	Sample Size	2007 Population	State Employees
10: Tenakee Springs	2	102	1
11: Palmer	37	5,504	565
11: Wasilla	82	7,025	185
11: Willow	24	2,048	7
11: Other Mat-Su Borough	44	64,631	58
12: Seward	22	2,661	338
12: Kasilof	4	596	1
12: Kenai	77	6,971	245
12: Nikiski	6	4,345	2
12: Soldotna	23	3,982	216
12: Sterling	10	5,123	2
12: Homer	26	5,502	104
12: Anchor Point	6	1,814	8
12: Cooper Landing	2	353	2
12: Ninilchik	4	778	7
12: Seldovia	6	429	1
12: Other Kenai Peninsula	14	15,468	11
13: Cordova	37	2,192	82
13: Valdez	60	3,599	65
13: Whittier	3	174	4
14: Kodiak	104	13,586	188
15: Barrow	56	4,052	19
15: Kotzebue	44	3,133	41
15: Nome	48	3,495	179
15: Teller	5	256	2
16: Bethel	106	5,650	218
16: Dillingham	45	2,404	77
17: Adak	2	136	3
17: Cold Bay	1	72	6
17: King Cove	10	756	1
17: Sand Point	13	992	8
17: Unalaska/Dutch Harbor	51	3,677	29
18: Aniak	11	506	13
18: Anvik	2	102	3
18: Chignik	2	81	9
18: Emmonak	17	777	12
18: Goodnews Bay	5	235	0
18: Iliamna	2	93	5
18: King Salmon	9	426	50
18: Saint Mary's	12	521	20
18: Unalakleet	17	724	5

Retail Price Survey

Overview

The Retail Price Survey (RPS) included collection of retail price data for a market basket of approximately 200 goods and services throughout Alaska. McDowell Group priced an extensive list of consumer products for each of the communities listed in the table below. The first column indicates that data was collected personally by McDowell Group staff. The second column indicates that merchants assisted the study effort by providing price data by phone or fax. Additionally, price data was collected for numerous household services including energy and utility costs, health care, transportation, communications, and insurance for the 58 locations in the table, plus the additional 15 communities listed on the following page.

Table V-5: Communities Included in RPS Market Basket Pricing

Community	In Person	Phone/Fax	Community	In Person	Phone/Fax
Anchor Point	X		Kotzebue		X
Anchorage	X		Manley Hot Springs		X
Aniak		X	McGrath		X
Barrow		X	Metlakatla	X	
Bethel		X	Nenana	X	
Cantwell		X	Ninilchik	X	
Central		X	Nome	X	
Chitina		X	Palmer	X	
Cordova	X		Pelican		X
Craig	X		Petersburg	X	
Delta Junction	X		Saint Mary's		X
Dillingham		X	Sand Point		X
Eagle		X	Seldovia		X
Emmonak		X	Seward	X	
Fairbanks/North Pole	X		Sitka	X	
Fort Yukon		X	Skagway	X	
Galena		X	Soldotna	X	
Glennallen	X		Talkeetna	X	
Gustavus	X		Teller		X
Haines	X		Tenakee Springs		X
Healy	X		Tok	X	
Homer	X		Unalakleet		X
Hoonah	X		Unalaska/Dutch Harbor		X
Juneau	X		Valdez	X	
Kenai	X		Wasilla	X	
Ketchikan	X		Whittier		X
King Cove		X	Willow	X	
Klawock	X		Wrangell	X	
Kodiak	X		Yakutat		X

Table V-6: List of Additional Communities Included in Energy and Service Pricing

Community	
Adak	King Salmon
Anvik	Livengood
Chignik	Nelchina
Cold Bay	Northway
Denali	Paxson
Elfin Cove	Slana
Goodnews Bay	Tazlina
Iliamna	

It is important to differentiate the RPS methodology (which produced a representative assortment of product and service prices available within each community) from the HCS methodology (which produced statistically reliable data regarding the community's typical consumption patterns). The project team's usage of the two methods together yields statistically defensible results, particularly when the data is aggregated into clusters of communities that share common geographic and socio-economic characteristics.

Selection of Market Basket Items

In 1985, the RPS included more than 300 items. After a thorough review and pretesting process, McDowell Group reduced the RPS to approximately 200 goods and services. The team began with examination of the 1985 survey instrument and associated economic analysis to understand the relative importance of each category and product in the economic model. The team also reviewed survey instruments, weighting factors, and secondary data from Bureau of Labor Statistics, Consumer Price Index, ACCRA Cost of Living Index, and other sources. Product and merchant lists from the State of Alaska WIC program also were reviewed.

To ensure that the market basket reflected current consumption habits, as well as the unique purchasing patterns of rural residents, McDowell Group secured the cooperation of two major Alaska retailers. Fred Meyer (retail stores located in major communities in the Interior, Southcentral, and Southeast regions of the state) and Alaska Commercial Co. (retail stores located in numerous remote, rural locations in northern and western Alaska) provided confidential sales volume data for top-selling products in each of the major market basket categories carried by their respective stores. McDowell Group also consulted secondary sources of data regarding Alaska resident consumer purchasing such as Motor Trends, Business Week and Consumer Reports. The market basket was further refined to reflect top-selling products, brands and sizes.

Field management staff conducted multiple pretests with the market basket in Juneau and Anchorage, making refinements based on product availability and prices in independently owned retailers as well as larger chains. During the pretesting phase, the RPS training instructions and protocols were updated from the previous study.

Food products dominated the items included in the market basket, as they typically represent a large portion of a household's expenses. Food categories included:

- Meats, poultry and fish
- Cereals and breads
- Dairy products
- Fruits and vegetables
- Other food items
- Food consumed away from home.

Additional market basket categories included:

- Housing
- Transportation
- Clothing
- Medical
- All other household expenditures.

Surveyors priced a list of products for each of the RPS categories. The market basket included a brief product description and unit size if applicable. In any instance that a specific brand was requested, the surveyor was also instructed to record the price for the most popular alternative item in that category (as indicated by item placement and allocation of shelf space). Similarly, if the specific size or number of units was not available, the surveyor was instructed to record the price and size/quantity for the closest alternative. A comparable price was computed as data was entered in the McDowell Group office. These fielding protocols for selecting alternative products allowed the field team to utilize the RPS market basket consistently in retail stores throughout the state. The RPS collected regular (full-price) retail prices, recognizing that sale prices or other temporary changes could affect the outcome of the study.

The State of Alaska reviewed the market basket before fielding commenced. A copy is included in the Appendix.

Selection of Communities Included in the RPS

McDowell Group developed a plan for RPS data collection based on community population, number of state employees, and other demographic and geographic information. Energy and service price data was collected for every community included in the study. Nearly 60 communities were selected for inclusion in pricing of approximately 175 consumer products.

Two methods were utilized to obtain prices: personal data collection and phone/fax requests for merchant or service provider assistance. In general, communities located along the road system, in Southeast, or having a population larger than 2,000 were surveyed in person. Small, remote communities (typically with populations between 100 and 500) were targeted for direct contact with merchants to request pricing assistance. Due to time and project cost constraints, several larger communities in the northern and western regions were grouped into the phone/fax category, including Barrow, Kotzebue, and Unalaska/Dutch Harbor. Alaska

Commercial Co. provided price data for 15 locations included in the study. Given their prominence in the northern and western regions of the state, their support was integral to the success of the phone/fax method.

Selection of Retail Outlets

The RPS methodology did not seek the lowest price, or the price in every possible outlet, but the price commonly paid by most households. To identify the retail outlets to be included in the RPS, field staff developed an initial inventory of all relevant retail locations for each community. The most popular retailers were identified through personal knowledge about the community, interviews with community leaders, and review of community directories and other listings.

Retail prices were collected from multiple locations wherever possible. In recognition of the large number of state employees — and the role that Anchorage, Fairbanks and Juneau have as regional retail and service hubs — more price data was collected for these three locations. In the baseline community of Anchorage, eight prices were collected for each product or service in the market basket whenever possible. In Fairbanks and Juneau, six prices were collected for each market basket item. In all other communities, the field staff collected four prices where possible. The field staff maintained detailed records of the 634 retail outlets included in the consumer product portion of the RPS.

Before fielding commenced, McDowell Group verified that regular prices are typically identical when a retailer has multiple outlets in a single location. This information allowed the RPS field staff to include a greater variety of retailers in the data collection efforts. Grocery prices were later weighted by store and community, to reflect consuming purchasing data collected in the HCS.

Methods of Collecting Price Data

Multiple methods of collecting data were warranted due to the widely dispersed locations of Alaska communities, the inclusion of both products and services in the market basket, and the extensive amount of information collected.

McDowell Group utilized existing survey staff located in Anchorage, Fairbanks, Juneau, and Ketchikan. These four teams personally completed the RPS consumer product pricing in the 33 largest and most accessible locations. Following pretesting efforts in Juneau and Anchorage, McDowell Group's statewide field manager conducted training for field staff in all field locations, ensuring consistency in data collection.

The majority of data collection for RPS in-person communities was completed over a four-week period. Pre-testing and training occurred in late October. Retailers were contacted between mid-November and mid-December for the remaining 25 communities. The market basket was modified to collect prices from a single retail location, and an introduction and instruction letter was developed for this purpose. Additionally, the market basket was streamlined to reflect the product categories in each participating store. Field staff completed reminder calls, emails and faxes as needed to encourage completion and return of the market basket. Some retailers with multiple locations opted to provide data through their central business office, while others responded individually.

Pricing Goods Purchased Outside the Community

Whenever possible, the market basket was populated with products available in each community, as this most accurately reflected the differential in the cost of living between a particular community and the base community of Anchorage. After the initial data collection process was completed, gaps in the market basket for each community were addressed. Alternative prices were imputed when the market basket was incomplete, or when the HCS clearly indicated that a significant portion of residents were bypassing local grocery stores for the majority of their food purchases.

The project team developed a statewide impute plan, identifying the nearest hub for each community for each major product and service categories: groceries and liquor, clothing and small appliances, large appliances, transportation and other services. (Prices were not imputed for restaurant, bar and entertainment categories.) It was possible for a single location to have different hub communities for different product categories. For example, residents in a small community might be able to purchase groceries in another nearby small community, but would likely have to obtain large appliances or automobiles from a major urban center.

Shipping costs depended on the product and the most common method of transferring products between the hub and specific communities. The study team conducted numerous interviews with retailers and freight providers, and examined shipping policies from a wide array of retailers, to identify the most commonly used transportation methods and associated prices.

Data from the HCS regarding grocery purchases revealed noticeable differences between communities on the road system and those whose access to a hub community was only by air or water. Many residents on the road system stated they did a majority of their grocery shopping in Anchorage, Fairbanks, or the Palmer/Wasilla area, depending on their proximity to each hub. This purchasing pattern data also helped to guide where prices would be imputed from for other products and services. The study team decided any product and service prices imputed into road-accessible communities would be done without adding additional shipping costs, as associated increases in transportation costs were already captured in the HCS consumption data.

Residents in communities located off the road system tended to purchase the majority of their food from local retailers. In the few instances that prices for individual items were imputed, it was done without adding freight costs. This approach was reinforced by the observation that food shopping in hub communities is commonly clustered with other travel motives and purchases. As with residents in road-accessible communities, transportation costs are more appropriately reflected in another portion of household spending than by adding the cost of an air or ferry ticket to a food product price.

The project team then examined typical shipping methods and associated costs for clothing and small appliance retailers that offered the items in the consumer market basket. Shipping costs typically ranged from free shipping to an additional 32 percent of the product cost, depending on the product type, weight, total value of goods purchased, delivery speed and shipping distance. The study team also recognized that many clothing and small household items are purchased when residents are traveling in urban centers, rather than being purchased and shipped individually. After consideration of the numerous factors that affect shipping

costs for clothing items, the project team elected to add 10 percent to clothing prices imputed from a hub community to those located off the road system.

To account for shipping costs for smaller household furnishings and appliances, the project team averaged shipping costs from several retailers that offered the specific market basket items. Prices were computed separately for each market basket item, as product prices and weights varied considerably. No shipping costs were added to computers, as many in-state and national retailers offer free shipping. A flat fee was added to the rifle cost when prices were imputed to account for the shipping and handling fees typically charged by merchants (possession of a Federal Firearms License is required).

Shipping options for large appliances and household items (such as mattresses and washing machines) were somewhat more limited due to their size and weight. Fortunately, it was only necessary to impute prices for a few Southeast communities and one community on the Yukon River. Typical shipping prices were determined from calls to transportation providers and retailers in the specific regions, and then added to the hub community prices.

The transportation items were addressed according to community geography and transportation linkages. Ferry prices, determined on the basis of vehicle length, were easily obtained for all communities accessible by either the Alaska Marine Highway or Inter-Island Ferry Authority. The ferry transportation cost was simply added to the vehicle price. Commercial barge and landing craft operators were interviewed to obtain representative prices from marine-accessible communities without ferry service. Air freight prices were obtained for several of the northern and interior locations.

Data Cleaning and Management

All RPS price data was compiled and managed in Excel. When applicable, prices were increased to account for local sales taxes, alcohol taxes, and tobacco taxes. The data also underwent an extensive cleaning process in which outlier values were removed prior to calculating average prices among specific items. Average prices for a particular item in each community were compared to the average price for the same item in Anchorage to produce a price differential. These individual item price differentials were then averaged with price differentials for other items in the same subcategory of items. For example, the price differential for hot dogs was averaged with the price differential for other meat products to determine a subcategory “Meat, poultry and fish” average-price differential. When communities were grouped together to produce sample block or district differentials, all pricing data was weighted according to community population. (This process is discussed in more detail in subsequent chapters.)

Section VI:

Statistical Analysis

SPSS and Statistical Analysis

SPSS Analysis

The data gathered through the household survey was compiled into an Excel database. The data was then imported into SPSS (Statistical Package for the Social Sciences) to conduct data examination and cleansing processes and to maintain a high level of data integrity throughout the analysis. Each variable was analyzed for consistency and reasonableness and, where necessary, values were imputed for records that were either missing or well beyond the range of normal variation. The analysis processes followed for each variable are outlined below. By conducting the household analysis in SPSS, the study team was also able to merge community information and several identifiers that allowed aggregation of the household responses into various groupings for reporting. These groupings include:

- The 19 community groupings from the 1985 differential study conducted by McDowell Group.
- The 19 community groupings defined in the 1994 update.
- The 40 Alaska House districts.
- The 20 Alaska Senate districts.
- An 18-block grouping developed by the McDowell Group based on geographic and commuting factors in Alaska.

Data Examination and Cleansing

Two data examination processes were conducted in SPSS to ensure that the data input into the Excel database from the household survey forms were properly recorded. A simple random sample equaling approximately 1.0 percent of all surveys was drawn and the values recorded for each variable for each survey record were compared against the paper survey forms received from the contractor overseeing the household survey.¹ No errors were found in any of the randomly drawn survey records.

As a second check on the accuracy of the data, descriptive statistics for each numeric variable were calculated and all records with extreme values were compared to the survey forms. In total, approximately 40 survey records were checked against the physical survey forms and values were corrected for three records.

¹ It was assumed that the occurrence of an error in the recording of the survey data would be a rare event. Developing a statistically valid sample to test for the occurrence of a rare event is generally very expensive due to the large sample size required to develop high relative precision. In essence, nearly every record would require re-examination. The selection of approximately 1.0 percent of records for thorough comparison against the physical survey forms was intended to confirm that no *systematic* errors were made in compiling the data into Excel.

Examination of Individual Variables and Data Imputation

Income

Respondents to the household survey were asked for the household's total pre-tax income from all sources in 2007. Most households provided this information. Those who refused to answer the direct income question were asked the category that best describes their household's income. The midpoint of each of the associated category was used to impute income for the household. Household income was set to *missing* for those households that refused to provide income information.

Demographic Information

Four variables were created based on the demographic information provided by the respondents:

- Average age of adults living in the household
- Average age of children living in the household
- The count of adults living in the household
- The count of children living in the household.

Housing

On average, housing and related costs are the largest component of household expenses. Because of its relative importance in the household budget, particular attention was paid to housing in both the survey instrument and in the examination of responses to housing questions. This is summarized in the following steps:

1. Survey responses were segmented based on whether or not the household reported owning or renting their home.
2. For those households that reported owning their home, monthly mortgage payments reported to be more than four standard deviations greater than the median monthly mortgage amount were truncated at this amount.²
3. For those households that reported owning their home, annual property tax payments reported to be more than four standard deviations greater than the median annual property tax payments were truncated at this amount.³
4. For those households that reported owning their home, but did not report property tax or property insurance payment amounts, values were imputed based on the statistical relationship between monthly house payments and annual property tax and insurance payments.⁴

² The median, rather than the mean of the distribution of mortgage payment amounts was chosen because it is a better representation of the central tendency of the distribution. Under the assumption of a symmetric distribution, which mortgage payments are not, four standard deviations from the median would encompass more than 99 percent of all mortgage payments. By truncating extreme values at this level, we reduce the degree of influence that the very small portion of the population has on the mean and other parametric statistical estimates.

³ Ibid.

⁴ Statistical relationship based on those households that reported both mortgage payments and property tax or property insurance amounts.

5. For those households that described their home as a condo, but did not report monthly condo fee, values were imputed based on the statistical relationship between monthly mortgage payments and monthly condo fees.⁵
6. For those households that described their home as a mobile home, but did not report monthly space rental cost, values were imputed based on the statistical relationship between monthly mortgage payments and monthly rental cost.⁶
7. Housing shelter cost was computed for each record.
 - a. **Homeowner Shelter Cost** = (monthly mortgage payment) + (annual property tax/12) + (annual property insurance/12) + (monthly condo fees) + (monthly mobile home space rent)
 - b. **Renter Shelter Cost** = monthly rental cost
8. For all households, home sizes reported to be more than four standard deviations greater than the median home size were truncated at this point.⁷ Calculations were done separately for owners and renters.
9. For all households missing home size, values were imputed as the average empirical home size for each of the geographic regions identified in 1985 and 2008. Separate calculations were made for owners and renters.
10. For all households, missing values for home energy consumption costs were imputed based on statistical models of energy costs regressed on home size and indicators for alternative fuel types (e.g. natural gas, electric, wood, etc.). Separate models were estimated for each fuel type.
11. Home energy consumption costs were examined for extreme outliers.
12. Total home energy consumption was calculated as the sum of energy costs across all fuel types consumed by the household.
13. Total home utilities costs were calculated for each household. Any household with total utility costs greater than four standard deviations from the mean were truncated at that value.
14. Total housing costs were computed for each household.
 - a. **Homeowner Total Housing Cost** = Homeowner shelter cost + total heating cost + total utility cost
 - b. **Renter Total Housing Cost** = Renter shelter cost + total heating cost + total utility cost
15. Per foot shelter costs and total housing costs were calculated for each household.
 - a. **Per Foot Homeowner Shelter Cost** = Homeowner shelter cost / home size
 - b. **Per Foot Renter Shelter Cost** = Renter shelter cost / home size

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

c. **Per Foot Homeowner Total Housing Cost** = Homeowner total housing cost / home size

d. **Per Foot Renter Total Housing Cost** = Renter total housing cost / home size

Vehicles

1. For those households that reported owning a car, monthly car payments reported to be more than four standard deviations greater than the median monthly car payment amount were truncated at this amount.
2. Monthly payment amount for other vehicle types (e.g. snow machine, boat, etc.) were examined for extreme outliers; no values were truncated for these variables.
3. Any record monthly vehicle fuel cost (for all vehicles) reported to be more than four standard deviations greater than the median monthly fuel cost amount was truncated at this amount.
4. Any record with monthly vehicle maintenance cost (for all vehicles) reported to be more than four standard deviations greater than the median monthly vehicle maintenance cost amount was truncated at this amount.
5. Any record with monthly vehicle insurance cost (for all vehicles) reported to be more than four standard deviations greater than the median monthly vehicle insurance cost amount was truncated at this amount.

In-State and Out-of-State Plane Travel

1. Any record with in-state air travel cost reported to be more than four standard deviations greater than the median in-state air travel cost amount was truncated at this amount.
2. Any record with out-of-state air travel cost reported to be more than four standard deviations greater than the median out-of-state air travel cost amount was truncated at this amount.

Food

1. Any record with weekly spending on groceries reported to be more than four standard deviations greater than the median reported spending on groceries was truncated at this amount.
2. Any record with weekly [food item]⁸ spending amount reported to be more than four standard deviations greater than the median [food item] spending amount was truncated at this amount.
3. Food away from home was analyzed for extreme values. None were found.

Clothing

1. Average monthly spending on clothing was analyzed for extreme values. None were found.

⁸ Food Item categories include: Meats, poultry, and fish; Cereals and bread; Dairy products; Fruits and vegetables; Soups, frozen meals, and snacks; Nonalcoholic beverages other than milk.

2. Local monthly spending on clothing was computed as average monthly spending on clothes multiplied by the reported percent purchased in local area.
3. Non-local monthly spending on clothing was computed as average monthly spending on clothes multiplied by the reported percent purchased non-locally.

Medical

1. Any record with monthly spending on medical insurance reported to be more than four standard deviations greater than the median monthly spending amount was truncated at this amount.
2. Any record with monthly spending on medical expenses reported to be more than four standard deviations greater than the median monthly spending amount was truncated at this amount.

Household Budget

Survey respondents were asked to estimate the percent of their total household income that was spent on the following four categories:

- Housing and utilities
- Groceries and dining out
- Transportation and travel
- All other expenses, including clothing, recreation, entertainment, medical, education, taxes, and savings.

When necessary, the survey administrator assisted the respondent to assure that the sum of the four percentages equaled 100 percent.

Federal Taxes

To derive disposable income (total income – taxes) for each household, it was necessary to approximate the household's federal tax obligation. This was done through the following five steps, based on the 1040 tax form.

Step 1: Filing status: *married* or *head of household*.

- If the household consisted of only one adult, then it was assumed that the appropriate tax status is *head of household*.
- If the household consisted of two or more adults, then it was assumed that the appropriate tax status is *married filing jointly*.

Step 2: Compute exemptions and deductions.

- Head of household: $\$11,500 + \text{total child count} * \$3,500$.
- Married filing jointly: $\$17,900 + (\text{total child count} + \text{total adult count} - 2) * \$3,500$.

Step 3: Compute adjusted gross income: Total Income – exemptions and deductions.

Step 4: Compute federal taxes.

a. Head of Household:

- If $(0 < \text{adj. gross inc.} \leq \$11,450)$ fed tax = $0 + 0.10 * (\text{adj. gross inc.} - 0)$.

- If ($\$11,450 < \text{adj. gross inc.} \leq \$43,650$) $\text{fed tax} = 0 + 0.15 * (\text{adj. gross inc.} - \$11,450)$.
- If ($\$43,650 < \text{adj. gross inc.} \leq \$112,650$) $\text{fed tax} = 0 + 0.25 * (\text{adj. gross inc.} - \$43,650)$.
- If ($\$112,650 < \text{adj. gross inc.} \leq \$182,400$) $\text{fed tax} = 0 + 0.28 * (\text{adj. gross inc.} - \$112,650)$.
- If ($\$182,400 < \text{adj. gross inc.} \leq \$357,700$) $\text{fed tax} = 0 + 0.33 * (\text{adj. gross inc.} - \$182,400)$.
- If ($\$357,700 < \text{adj. gross inc.}$) $\text{fed tax} = 0 + 0.35 * (\text{adj. gross inc.} - \$357,700)$.

b. Married filing jointly:

- If ($0 < \text{adj. gross inc.} \leq \$16,050$) $\text{fed tax} = 0 + 0.10 * (\text{adj. gross inc.} - 0)$.
- If ($\$16,050 < \text{adj. gross inc.} \leq \$65,100$) $\text{fed tax} = 0 + 0.15 * (\text{adj. gross inc.} - \$16,050)$.
- If ($\$65,100 < \text{adj. gross inc.} \leq \$131,450$) $\text{fed tax} = 0 + 0.25 * (\text{adj. gross inc.} - \$65,100)$.
- If ($\$131,450 < \text{adj. gross inc.} \leq \$200,300$) $\text{fed tax} = 0 + 0.28 * (\text{adj. gross inc.} - \$131,450)$.
- If ($\$200,300 < \text{adj. gross inc.} \leq \$357,700$) $\text{fed tax} = 0 + 0.33 * (\text{adj. gross inc.} - \$200,300)$.
- If ($\$357,700 < \text{adj. gross inc.}$) $\text{fed tax} = 0 + 0.35 * (\text{adj. gross inc.} - \$357,700)$.

Step 5: Compute after tax income = household income – federal tax.

CALCULATION OF SPENDING AS A PERCENT OF INCOME

For each component of household spending, the study team calculated spending as a percent of after tax household income.⁹

Alternative Aggregations

Alternative aggregations of the household data were developed based on (1) community, (2) the 1985 GDP study, (3) the 1994 GDP study, (4) the 2009 Alaska House of Representative districts, (5) the 2009 Alaska Senate districts, and (6) an aggregation developed by the study team.

Development of Approximate Standard Errors

Typically, the estimation of cost of living and other indices based on survey data does not include the development of standard errors. The reason for this is that survey data are generally “complex” in that the surveyed households often do not perfectly represent the population of interest and, therefore, parameter estimates must be developed inclusive of some sort of weighting scheme. Methods that allow for the calculation of (near) exact standard errors do exist, but they are beyond the ability of typical statistical software packages (e.g. SPPS, SAS, Stata) and developing individual standard errors for each parameter of interest requires extensive analyst and computer time. This would certainly be the case for the Alaska GDS, which includes the surveying of more than 2,500 Alaska households across 74 communities regarding their income and spending patterns. It would be prohibitively expensive in terms of time and budget to attempt to calculate exact standard error of each of the many cost of living parameter estimates derived from the household and retail surveys.

⁹ Note 1: Any household with spending less than 30 percent or greater than 120 percent of after tax income was set to *missing* for the purpose calculating spending as a percent of household income.

Note 2: If spending at the major household sector (e.g. housing, transportation, etc.) was missing for any record, the value was imputed based on the respondents stated spending on the particular sector as a percent of household income (if available).

Generalized Variance Function Method

Fortunately, there is an alternative to the development of exact standard errors. The generalized variance function (GVF) method is a procedure for estimating *approximate* standard errors for estimated means, proportions, ratios, indexes, and the difference between sample estimates. GVF estimates can be developed relatively quickly using standard statistical software (e.g. SPSS, SAS, Stata). Although the specification of the GVF function varies based the parameter of interest, available data, and the needs of the analyst, the following characteristics are typical parts of GVF procedure:

1. Reliance on the *central limit theorem*, which states that the means from sufficiently large samples repeatedly drawn from any distribution will be normally distributed.
2. Monte Carlo-styled resampling of the survey data to develop an empirical distribution for the particular parameter.
3. The estimation of a statistical function that relates the parameter of interest to its variance (or standard deviation).
4. The construction of a formula based on the parameter estimates in Step 3 that allows for the calculation of the approximate standard error (and by extension, confidence intervals).

Development of Generalized Variance Function and the “A” and “B” Parameters

An SPSS routine was written to perform the resampling routines, obtain the parameter estimates of interest, and estimate the statistical models. The generalized steps of the routine are as follows:

- Step 1: Draw 300 samples of approximately 100 cases per sample. Each sample is drawn using a Bernouli random variable, with each of the approximately 2,500 records having an equal probability (1 chance in 25) of being selected in each of the 100 samples.
- Step 2: Compute the mean and variance of each continuous variable for each of the 100 samples.
- Step 3: (Natural) log-transform each of the mean and variance estimates.
- Step 4: Estimate the following statistical regression model:

$$\ln(\sigma_x^2) = \beta_0 + \beta_1 \ln(\bar{x})$$

Where:

$\ln(\sigma_x^2)$ is the vector of standard deviation estimates for the variable of interest “x” transformed by the natural log function.

$\ln(\bar{x})$ is the vector of mean estimates for the variable of interest “x” transformed by the natural log function.

- Step 5: Save the Y-intercept and slope coefficient from each statistical model. These parameter estimates will be used as the “A” and “B” parameters for calculating the approximate standard error for each of the variables of interest.

Calculating an Approximate Standard Error using the *A* and *B* Coefficients

The *A* and *B* coefficients estimated in the SPSS routine are simply the y-intercept and slope coefficients from the simple statistical models relating the mean value of each parameter estimate to its standard deviation. Estimating the standard error and the lower and upper confidence bounds of any of the parameter estimates of interest is a straightforward 3-step process.

Step 1: Estimate the approximate variance of the parameter of interest:

$$\tilde{\sigma}_x^2 = e^{A * \ln(\bar{x}) + B}$$

Where:

$\tilde{\sigma}_x^2$ is the approximate variance of the parameter of interest.

$e^{A * \ln(\bar{x}) + B}$ is the *A* and *B* function raised to the exponential function *e*.¹⁰

Step 2: Compute the approximate standard error from the variance:

$$se_x = \frac{\sqrt{\tilde{\sigma}_x^2}}{\sqrt{n}}$$

Step 3: Compute the lower and upper 95 percent confidence bounds.¹¹

$$\text{Lower Bound} = \bar{x} - 2 * se_x$$

$$\text{Upper Bound} = \bar{x} + 2 * se_x$$

The *A* & *B* Table, Sample Sizes, and an Example Calculation

The *A* and *B* coefficients necessary to calculate approximate standard errors and confidence intervals are shown in Table VI-1. The sample sizes for each of the regional aggregations and individual communities, which are also necessary for calculating an approximate standard error, are shown in Tables VI-2, VI-3, VI-4, and VI-5.

Presented below are two examples of how to use the *A* and *B* coefficients to calculate the approximate standard error and confidence intervals for a parameter of interest. Only one example is actually necessary to demonstrate the process; however, by presenting two examples, the impact of sample size on the size of the approximate standard errors is shown and, by extension, the precision of the confidence interval.

Juneau Cost of Living Differential

Based on the previously described analysis, the cost of living differential for Juneau is 1.11. To calculate the standard error on this estimate, the study team utilized the *A* coefficient of 2.236 and the *B* coefficient of -3.042 from row 30 of Table VI-1 and the sample size of 300 from row 7 of Table VI-2.

¹⁰ Note the parameter of interest is log-transformed within the exponential function.

¹¹ Based on the assumption that two standard deviations on either side of the sample parameter estimate constitutes a 95 percent confidence interval. In fact, for very small sample sizes, the number of standard deviations increases.

Step 1: Estimate the approximate variance of the parameter of interest:

$$\tilde{\sigma}_x^2 = e^{A \cdot \ln(\bar{x}) + B} = \tilde{\sigma}_{Juneau}^2 = e^{2.236 \cdot \ln(1.11) - 3.042} \approx 0.0603$$

Step 2: Compute the approximate standard error from the variance:

$$se_x = \sqrt{\tilde{\sigma}_x^2} / \sqrt{n} = se_{Juneau} = \sqrt{0.0603} / \sqrt{300} \approx 0.014$$

Step 3: Compute the lower and upper confidence bounds¹²

$$\text{Lower Bound} = \bar{x} - 2 * se_x = 1.11 - 2 * 0.014 \approx 1.082$$

$$\text{Upper Bound} = \bar{x} + 2 * se_x = 1.11 + 2 * 0.014 \approx 1.138$$

Aleutians Cost of Living Differential

Based on our analysis, the cost of living differential for the Aleutians is 1.50. To calculate the standard error on this estimate, the study team utilized the *A* coefficient of 2.236 and the *B* coefficient of -3.042 from row 30 of Table VI-1, but the sample size for the Aleutians is only 77 (from row 17 of Table VI-2).

Step 1: Estimate the approximate variance of the parameter of interest:

$$\sigma_x^2 = e^{A \cdot \ln(\bar{x}) + B} = \sigma_{Aleutians}^2 = e^{2.236 \cdot \ln(1.50) - 3.042} \approx 0.1182$$

Step 2: Compute the approximate standard error from the variance:

$$se_x = \sqrt{\sigma_x^2} / \sqrt{n} = se_{Aleutians} = \sqrt{0.1182} / \sqrt{77} \approx 0.0392$$

Step 3: Compute the lower and upper 95% confidence bounds¹³

$$\text{Lower Bound} = \bar{x} - 2 * se_x = 1.50 - 2 * 0.0392 \approx 1.42$$

$$\text{Upper Bound} = \bar{x} + 2 * se_x = 1.50 + 2 * 0.0392 \approx 1.58$$

As the two examples demonstrate, not only can the cost of living differentials (or any other parameter) differ greatly across the state, so can the relative variance of the estimated distributions (i.e., all else being equal, there is greater variation associated with larger parameter values) and as sample size goes up, the standard error of the estimated parameter goes down. Because of this, for Juneau, with its low cost of living differential and large sample size (relative to the Aleutians), the approximate standard error is relatively small and the precision of the estimate is relatively high. The approximate 95 percent confidence interval for Juneau extends from 1.08 up to 1.14. Comparatively, the approximate 95 percent confidence interval for the Aleutians is relatively wide, extending from 1.42 up to 1.58. This is due to the larger cost of living differential and smaller sample size.

¹² Based on the assumption that two standard deviations on either side of the sample parameter estimate constitutes a 95 percent confidence interval.

¹³ Based on the assumption that two standard deviations on either side of the sample parameter estimate constitutes a 95 percent confidence interval.

Table VI-1: A and B Coefficients for Computing Approximate Standard Errors and Confidence Intervals for Results from the 2008 Alaska Differential Study

Row	Parameter of Interest	A	B
1	Shelter Cost as a Percent of Income—Owner	0.897	-2.462
2	Shelter Cost as a Percent of Income—Renter	1.069	-2.986
3	All Housing Costs as a Percent of Income—Owner	2.169	-1.074
4	All Housing Costs as a Percent of Income—Renter	1.069	-2.718
5	Vehicle Fuel Cost as a Percent of Income	2.600	1.517
6	Vehicle Maintenance Cost as a Percent of Income	2.190	1.338
7	Vehicle Insurance Cost as a Percent of Income	2.303	0.736
8	Automobile Payment as a Percent of Income	1.220	1.504
9	All Other Vehicle Payments as a Percent of Income	1.593	1.713
10	Spending on Food as a Percent of Income	2.398	-0.309
11	Spending on Groceries as a Percent of Income	2.536	0.131
12	Spending on Food Away from Home as a Percent of Income	2.438	1.739
13	Spending on Meat as a Percent of Income	2.547	1.607
14	Spending on Cereals and Bread as a Percent of Income	3.435	5.488
15	Spending on Dairy as a Percent of Income	3.987	7.515
16	Spending on Fruit as a Percent of Income	3.112	3.631
17	Spending on Soup as a Percent of Income	2.210	0.938
18	Spending on Beverage as a Percent of Income	2.512	2.634
19	Spending on Clothing as a Percent of Income	2.275	1.230
20	Local Spending on Clothes as a Percent of Income	2.117	1.574
21	Non-local Spending on Clothing as a Percent of Income	2.041	0.909
22	All Medical Spending as a Percent of Income	2.061	0.636
23	Spending on Medical Insurance as a Percent of Income	1.851	0.361
24	Spending on Medical Expenses as a Percent of Income	2.168	1.692
25	Spending on Travel as a Percent of Income	1.570	-1.186
26	Spending on In-State Travel as a Percent of Income	1.523	-0.924
27	Spending on Out-of-State Travel as a Percent of Income	1.556	-1.106
28	Household income	2.565	-6.886
29	After Tax Income	1.989	-0.657
30	Cost of Living Differential Relative to Anchorage	2.236	-3.042

Table VI-2: Sample Sizes for Regional Blocks

Sample Block #	Regional Blocks	Sample Size
1	Anchorage	300
2	Fairbanks	300
3	Parks/Elliott/Steese Highways	65
4	Glennallen Region	50
5	Delta Junction/Tok Region	76
6	Roadless Interior	51
7	Juneau	300
8	Ketchikan/Sitka	200
9	Southeast Mid-Size Communities	105
10	Southeast Small Communities	51
11	Mat-Su	187
12	Kenai Peninsula	200
13	Prince William Sound	100
14	Kodiak	104
15	Arctic Region	153
16	Bethel/Dillingham	151
17	Aleutian Region	77
18	Southwest Small Communities	77

Table VI-3: Sample Sizes for 1985 GDS Groupings

District #	1985 GDS Groupings	Sample Size
1	Ketchikan/Prince of Wales	153
2	Petersburg/Wrangell	49
3	Sitka	80
4	Juneau	300
5	Icy Strait/Lynn Canal	74
6	Cordova/Valdez	150
7	Palmer/Wasilla	216
8	Anchorage	300
9	Seward	24
10	Kenai/Cook Inlet	176
11	Kodiak	104
12	Aleutian Islands	79
13	Bristol Bay	56
14	Bethel	111
15	Yukon/Kuskokwim	78
16	Fairbanks/Fort Yukon	398
17	Barrow/Kotzebue	100
18	Nome	70
19	Wade Hampton	29

Table VI-4: Sample Sizes for 1994 GDS Groupings

District #	1994 GDS Groupings	Sample Size
1	Ketchikan/Prince of Wales	153
2	Wrangell/Petersburg	49
3	Sitka	80
4	Juneau	300
5	Icy Strait/Lynn Canal	74
6A	Cordova/Valdez (excluding Valdez Duty Station)	90
6B	Cordova/Valdez (Valdez Duty Station)	60
7	Palmer/Wasilla	216
8	Anchorage	300
9	Seward	24
10	Kenai/Cook Inlet	176
11	Kodiak	104
12	Aleutian Islands	79
13	Bristol Bay	56
14	Bethel	111
15A	Yukon/Kuskokwim (excluding Nenana Duty Station)	71
15B	Yukon/Kuskokwim (Nenana Duty Station)	7
16A	Fairbanks/Fort Yukon (South of Arctic Circle)	378
16B	Fairbanks/Fort Yukon (North of Arctic Circle)	20
17	Barrow/Kotzebue	100
18	Nome	70
19	Wade Hampton	29

Table VI-5: Sample Sizes for Individual Communities

Sample Block and Community	Sample Size
1: Anchorage	300
2: Fairbanks North Star Borough	300
3: Healy	22
3: Cantwell	4
3: Central	2
3: Nenana	7
3: Manley Hot Springs	1
3: Talkeetna	29
4: Glennallen	41
4: Chitina	3
4: Paxson	1
4: Slana	3
4: Tazlina	2
5: Delta Junction	53
5: Tok	21
5: Eagle	1
5: Northway	1
6: Galena	21
6: Fort Yukon	20
6: McGrath	10
7: Juneau	300
8: Ketchikan	120
8: Sitka	80
9: Craig	13
9: Haines	23
9: Klawock	7
9: Metlakatla	12
9: Petersburg	30
9: Wrangell	19
10: Hoonah	14
10: Skagway	14
10: Yakutat	10
10: Elfin Cove	1
10: Gustavus	8
10: Pelican	3
10: Tenakee Springs	2
11: Palmer	37
11: Wasilla	82
11: Willow	24
11: Other Mat-Su Borough	44

Table VI-5 cont'd: Sample Sizes for Individual Communities

Sample Block and Community	Sample Size
12: Seward	22
12: Kasilof	4
12: Kenai	77
12: Nikiski	6
12: Soldotna	23
12: Sterling	10
12: Homer	26
12: Anchor Point	6
12: Cooper Landing	2
12: Ninilchik	4
12: Seldovia	6
12: Other Kenai Peninsula	14
13: Cordova	37
13: Valdez	60
13: Whittier	3
14: Kodiak	104
15: Barrow	56
15: Kotzebue	44
15: Nome	48
15: Teller	5
16: Bethel	106
16: Dillingham	45
17: Adak	2
17: Cold Bay	1
17: King Cove	10
17: Sand Point	13
17: Unalaska/Dutch Harbor	51
18: Aniak	11
18: Anvik	2
18: Chignik	2
18: Emmonak	17
18: Goodnews Bay	5
18: Iliamna	2
18: King Salmon	9
18: Saint Mary's	12
18: Unalakleet	17

Statistically-Based GDP Definitions

The state could use the results of this study to set a unique differential for each individual community or regional block. However, such an approach may prove to be administratively inefficient, and could lead to a de facto assumption regarding the precision of the estimated differentials that does not exist – especially for small communities. Alternatively, a differential could be set that would apply to subsets of communities. There are numerous options for grouping communities based on such factors as geographic region, political boundaries, community size, or the size of the estimated differential. There are likely positive and negative aspects to each of these grouping methods.

Among the many alternatives for grouping communities is one based purely on the statistical similarity between pairs of estimated differentials. As noted earlier, each differential represents the mean value of the difference in the cost of living between the particular community and Anchorage. For each differential, an *approximate* standard error was estimated based on Monte Carlo simulation and the development of generalized variance functions. Using this information, along with the sample size for each regional block or individual community, the Fisher Least Significant Difference (FLSD) method was used to group communities and regional blocks based on individual pair-wise comparisons between the respective differentials.

The FLSD is a procedure for comparing the means of multiple (more than two) populations based on individual pair-wise comparisons. The two-step procedure begins with a standard one-way analysis of variance (ANOVA) test to determine if the differentials of all of the regional blocks and individual communities are jointly equal (null hypothesis), versus the alternative hypothesis that at least one differential is different from the others. If the null hypothesis is rejected, as it was in this analysis, then the second step of the FLSD procedure is taken. The second step consists of applications of two-sample *t*-tests between every pair of means.¹⁴ Two differentials are placed in the same group if results of the *t*-test indicate there is not a statistically significant difference between the two differentials.¹⁵

Results of the FLSD Analysis

The results of the FLSD analysis indicate that the 18 regional blocks and 11 communities examined can be pooled into four groups (see VI-6). One community, Valdez, could be placed in either of two groupings.¹⁶

¹⁴ The total number of two-sample combinations is equal to “24 choose 2” or $\left(\frac{24!}{2!(24-2)!}\right)$, which results in 276 combinations.

¹⁵ For more information on the Fisher Least Significant Difference Method, please see: Koopmans, L.H., Introduction to Contemporary Statistical Methods, Second Edition, PWS Publishers, 1987.

¹⁶ The estimated differential for Valdez, 1.08, is closer to the differentials of regional blocks and communities in Group 2. However, its relatively small sample size (60 observations) results in it also being part of Group 1, the “Anchorage” block.

Table VI-6: Community Groupings Based on FLSD Method

Sample Block/Community		Differential	Group #
Sample Blocks			
1	Anchorage	1.00	1
2	Fairbanks	1.03	1
3	Parks/Elliott/Steese Highways	1.00	1
4	Glennallen Region	0.97	1
5	Delta Junction/Tok Region	1.04	1
6	Roadless Interior	1.31	3
7	Juneau	1.11	2
8	Ketchikan/Sitka	1.09	2
9	Southeast Mid-Size Communities	1.05	1
10	Southeast Small Communities	1.02	1
11	Mat-Su	0.95	1
12	Kenai Peninsula	1.01	1
13	Prince William Sound	1.08	2
14	Kodiak	1.12	2
15	Arctic Region	1.48	4
16	Bethel/Dillingham	1.49	4
17	Aleutian Region	1.50	4
18	Southwest Small Communities	1.44	4
Communities			
	Barrow	1.50	4
	Bethel	1.53	4
	Cordova	1.13	2
	Dillingham	1.37	3
	Homer	1.03	1
	Ketchikan	1.04	1
	Kotzebue	1.61	5
	Nome	1.39	3
	Sitka	1.17	2
	Unalaska/Dutch Harbor	1.58	5
	Valdez	1.08	2

Table VI-7 shows the minimum and maximum differentials for each community group and the number of communities within that group.

Table VI-7: Community Grouping Statistics

2008 GDP #	Sample Blocks and/or Communities	Minimum Differential	Maximum Differential
1	Anchorage, Delta Junction/Tok Region, Fairbanks, Glennallen Region, Kenai Peninsula, Ketchikan, Mat-Su, Parks/Elliott/Steese Highways, Southeast Mid-size Communities, Southeast Small Communities	.95	1.05
2	Cordova, Juneau, Kodiak, Sitka, Valdez	1.08	1.17
3	Dillingham, Nome, Roadless Interior	1.31	1.39
4	Barrow, Bethel, Aleutians (other than Unalaska/Dutch Harbor), Southwest Small Communities	1.44	1.53
5	Kotzebue, Unalaska/Dutch Harbor	1.58	1.61

Section VII:

Appendix

Appendix Contents

Bibliography

Household Consumption Survey Instrument

Retail Price Survey Instructions

Market Basket Forms

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Alaska Geographic Differential Study

Household Consumption Survey

Phone Number: _____

Refusals: _____

Interviewer Name: _____

Date: _____

Hi, this is _____ with the McDowell Group, an Alaska research firm. We are conducting a study for the State of Alaska regarding the cost of living in different communities around the state. Your household has been randomly selected to participate in this important project.

May I speak with the person who is most familiar with your household spending? *(If phone is passed, repeat intro paragraph.)*

[When you get the right person] May I ask you a few questions about your household's spending on categories such as housing, utilities, transportation and groceries?

1. How many people currently live in your household? _____ ☐ DK/Ref.

2. Can you please tell me their ages? ☐ DK/Ref.

(Record up to 8 household members)

Respondent _____ e. _____

b. _____ f. _____

c. _____ g. _____

d. _____ h. _____

(use <1 for less than 1 year old)

3. Do you own or rent your home?

☐ Own

☐ Rent → 3a. How much is your households' monthly rent? \$_____ (skip to Q9)

☐ DK/Ref. (skip to Q9)

☐ Neither (skip to Q11)

☐ DK/Ref. (skip to Q11)

4. How much is your monthly mortgage payment? \$_____ (go to Q 5)

☐ Zero/paid off (skip to Q6)

☐ DK/Ref. (skip to Q9)

5. Do your monthly mortgage payments include:

☐ Property Tax ☐ Yes

☐ No → Q6 How much is your annual property tax? \$_____? ☐ DK/Ref

☐ Property Insurance ☐ Yes (skip to Q8)

☐ No → Q7 How much is your annual property insurance? \$_____? ☐ DK/Ref

☐ DK/Ref. (skip to Q8)

8. Which of the following best describes your home? (Read 1-3)

- ☐ House
- ☐ Condominium → 8a. How much is your monthly condo fee? \$_____ ☐ DK/Ref.
- ☐ Mobile home → 8b. What is your monthly space rent? \$_____ ☐ DK/Ref.
- ☐ Other _____ 8c. How much does your _____ cost per month? \$_____ ☐ DK/Ref.
- ☐ DK/Ref.

9. How many square feet of living space does your home have? Your best estimate is fine.

_____ sq. feet ☐ DK/Ref.

10. How many bedrooms does your home have? _____ bedrooms

☐ DK/Ref.

11. Which of the following do you use in your home? (Read a-g)	12. About how much did your household spend on _____ in the last 12 months? (If zero, ask if included in rent)	13. (If DK for any source) About how much did your household spend on _____ last month? (amount/time period)
c. <input type="checkbox"/> Electricity	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
a. <input type="checkbox"/> Oil	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
b. <input type="checkbox"/> Natural gas	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
d. <input type="checkbox"/> Propane	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
e. <input type="checkbox"/> Firewood or pellets	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
f. <input type="checkbox"/> Coal	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.
g. <input type="checkbox"/> Kerosene	<input type="checkbox"/> DK/Ref. \$_____ <input type="checkbox"/> Included in rent	\$_____/_____ <input type="checkbox"/> DK/Ref.

14. Does your household purchase any of the following services? (Read a-c)	15. About how much does your household spend on _____ each month? (If package, fill in d)
a. <input type="checkbox"/> Water	<input type="checkbox"/> DK/Ref. \$ _____ <input type="checkbox"/> Included in rent
b. <input type="checkbox"/> Sewer	<input type="checkbox"/> DK/Ref. \$ _____ <input type="checkbox"/> Included in rent
c. <input type="checkbox"/> Garbage	<input type="checkbox"/> DK/Ref. \$ _____ <input type="checkbox"/> Included in rent
d. <input type="checkbox"/> Combo _____ (record W/S/G)	<input type="checkbox"/> DK/Ref. \$ _____ <input type="checkbox"/> Included in rent
e. <input type="checkbox"/> None (skip to Q 16)	

16. Does your household currently make any of the following types of vehicle payments? (Read a-e)	17. About how much does your household spend on _____ payments each month?
a. <input type="checkbox"/> Car, truck , or motorcycle	\$ _____ <input type="checkbox"/> DK/Ref.
b. <input type="checkbox"/> Snow machine	\$ _____ <input type="checkbox"/> DK/Ref.
c. <input type="checkbox"/> Four wheeler	\$ _____ <input type="checkbox"/> DK/Ref.
d. <input type="checkbox"/> Boat	\$ _____ <input type="checkbox"/> DK/Ref.
e. <input type="checkbox"/> Airplane	\$ _____ <input type="checkbox"/> DK/Ref.
f. <input type="checkbox"/> Motor home	\$ _____ <input type="checkbox"/> DK/Ref.
g. <input type="checkbox"/> None of the above (skip to Q 18)	

18. On average, about how much does your household spend each month on fuel for all vehicles?

\$ _____ ☐ DK/Ref.

19. About how much did your household spend in the last 12 months on maintenance for all vehicles?

\$ _____ ☐ DK/Ref.

20. About how much did your household spend in the last 12 months on insurance for all vehicles?

\$ _____ ☐ DK/Ref.

READ: Now I'd like to ask you about your household's spending on personal travel, food and clothing.

21. Can you estimate how much your household spent in the last 12 months on plane tickets for destinations within Alaska, not including business travel?

\$_____ ☐ DK/Ref.

22. Can you estimate how much your household spent in the last 12 months on plane tickets for destinations outside of Alaska, not including business travel?

\$_____ ☐ DK/Ref. (surveyor note: total round trip cost, from home community)

23. About how much does your household spend on groceries per week?

\$_____ ☐ DK/Ref.

24. About how much does your household spend on each of the following types of groceries per week? Your best estimate will do. (Read a-f)	
a. Meats, poultry and fish	\$_____ <input type="checkbox"/> DK/Ref.
b. Cereals and breads	\$_____ <input type="checkbox"/> DK/Ref.
c. Dairy products	\$_____ <input type="checkbox"/> DK/Ref.
d. Fruits and vegetables	\$_____ <input type="checkbox"/> DK/Ref.
e. Soups, frozen meals, and snacks	\$_____ <input type="checkbox"/> DK/Ref.
f. Nonalcoholic beverages other than milk	\$_____ <input type="checkbox"/> DK/Ref.

25. Which store and community does your household buy most of its groceries from?

Store_____Community _____ Code #_____ ☐DK/Ref.

26. About how much did your household spend on restaurants and take-out last month?

\$_____ ☐ DK/Ref.

27. What percentage of your household food supply is obtained from activities such as hunting, fishing, gardening, or picking berries? (Read list)

- ☐ None
- ☐ Less than 25%
- ☐ 25 to 50%
- ☐ 50 to 75%
- ☐ More than 75%
- ☐ DK/Ref.

28. On average, about how much does your household spend on clothing per month?

\$_____ ☐ DK/Ref. ☐ Zero (skip to Q30)

29. About what percentage of your household's clothing purchases are made from businesses in your community versus businesses outside your community?

a. _____ % In community

b. _____ % Outside community (including Internet and catalogue purchases)

☐ DK/Ref.

30. About how much does your household spend on medical insurance every month? Do not include payments covered by employers.

\$ _____ ☐ DK/Ref.

31. In the last 12 months, about how much did your household spend on medical expenses not covered by insurance? Do not include travel costs.

\$ _____ ☐ DK/Ref.

READ: My last few questions are about overall household spending and income.

32. Can you please tell me, what was your household's total pre-tax income from ALL sources for 2007? Please include wages, unemployment or other assistance payments, social security, investment income and perm fund dividends.

\$ _____

☐ DK/Ref. → 32a. Can you instead tell me which category best describes your household's total income? (Read list)

☐ Zero-\$5,000

☐ \$35,000-\$50,000

☐ \$125,000-\$150,000

☐ \$5,000-\$15,000

☐ \$50,000-\$75,000

☐ \$150,000 or over

☐ \$15,000-\$25,000

☐ \$75,000-\$100,000

☐ DK/Ref.

☐ \$25,000-\$35,000

☐ \$100,000-\$125,000

The four categories should add up to 100%. Your best estimate is fine.

34. Is anyone in your household a State of Alaska employee?

☐ Yes

☐ No

☐ DK/Ref.

TO BE FILLED OUT BY SURVEYOR (Do not read)

- ☐ Male
- ☐ Female
- ☐ Don't know

Code #

Retail Price Survey Instructions

Introduction

The purpose of the retail price survey is to identify the price of approximately 175 items which most Alaskan households buy. The retail price survey will be conducted in nearly 60 locations in Alaska. These prices will then be compared with Anchorage prices for the same items allowing the State of Alaska to identify the difference in cost of living in areas throughout our state. Your job is to personally go into selected business locations which sell the items to Alaskan households and then record the prices of those items.

Enclosed are three documents:

1. Retail Price Survey Instruction Sheet

This document gives you some guidelines for how to select outlets, select items to price and specific questions to ask.

2. Interviewer's Retail Outlet Inventory

This document is a checklist for you to record the names, locations, and telephone number of all the retail outlets which you will collect prices from. You can also record the date you survey each outlet.

3. Retail Price Survey Form

This is the document you will use to record all of the prices which you collect for as many of the items as are available in each pricing location.

Retail Price Survey Instruction Sheet

Selecting Outlets

For most smaller pricing locations, outlets will be selected during the training session. We will rely on your personal knowledge of your communities. You may also use the local telephone book and other sources for each area. Four outlets in each category (grocery stores, service stations, etc.) are desired. If less than four exist in your pricing location, survey all those which do exist. If you find more than four exist, the most important ones to survey are the largest ones where the majority of people shop.

For smaller communities, there may be no outlets in some categories. Enter N/A in the first blank of that category.

During training you will fill out your Retail Outlet checklist as best you can, naming as many outlets as possible. After you arrive in the pricing location, take the time to look around and ask local sources to make certain you have listed all the important outlets that are possible. Remember to choose only four in each category. Avoid very small stores which do almost no business.

For Anchorage, eight outlets will be surveyed in each city, while in Fairbanks and Juneau six outlets in each category are desired. Outlets may be added in the Kenai/Soldotna and Palmer/Wasilla pricing locations if the rule of four outlets per category results in eliminating an excessive number of major stores.

If one store offers items in more than one category—like in many village stores and department stores—enter that store's name in each category. For example, AC Company stores offer groceries, clothing and boats. Enter "AC Store" in a blank under each category. This also happens with auto dealers. They sell cars and also repair them. It is fine to get prices for cars and for repairs from the same place, just as it is fine to get grocery, clothing and durable goods from the same store.

Pricing Rules

Specials in stores: If an item you are pricing is on special, use the regular price, not the special price.

When there are several choices for a grocery item: If the brand requested is not available, and there are still choices, select the most popular brand. This is normally the one at eye level and takes up the most shelf space. If the brand is available, get the brand price along with the most popular price.

When the item is not available: Select a similar item, if you can find one. For example, if you can't find Nabisco Saltine, select a box of plain crackers of the same weight. If you can't find a similar item, put N/A in the price blank of that store.

For autos, snow machines, four-wheelers: If model asked is not available, please pick the model that is closest to it. This normally means the model with the least amount of add-ons. For example, the Ford F-150 XL basic package does not include air conditioning or tinted rear-window. If the model asked is not available, please pick the closest brand. For example, if the Ford F-150 is not available, pick another American brand truck like the Chevrolet Silverado or the Dodge Ram. Always choose the base model and the basic package.

For furniture and appliances: The model listed is the basic model for each of the brands. However, there are more options for the basic models, so watch for extra costs, such as stainless steel and extra features. If the brand is not available, make an educated decision on the closest alternative.

For restaurants: Pick a basic restaurant popular in the community. Make sure it serves at least two of the three meal categories. This also means not picking eight Mexican restaurants, eight American burger joints or eight brand names such as Denny's. Pick places that would potentially serve several of the choices.

For bars: It is acceptable to pick bars that are also on your restaurant list. You do not have to go looking for the eight trendiest bars in each community. It is fine if you can eat and drink at the same location.

Market Basket Form for RPS

		Store 1	Store 2	Store 3	Store 4
		Price	Price	Price	Price
Item	Units	(size if applicable)	(size if applicable)	(size if applicable)	(size if applicable)
GROCERY STORE					
Cereals and bakery products					
Flour: Gold Medal, all purpose, white	5 lb bag				
Most popular, all purpose, white	5 lb bag				
Sugar: white	5 lb bag				
Evaporated milk: Nestle/Carnation	12 oz. can				
Most popular	12 oz. can				
Breakfast cereal: Kellogg's Corn Flakes	12 oz.				
Most popular, corn flakes	12 oz.				
Hot cereal: Quaker Oatmeal	18 oz. canister				
Most popular	18 oz. canister				
Rice: white, long grain, uncooked	28 oz.				
Bread: AC Bread, white	24 oz. loaf				
Most popular, white	24 oz. loaf				
Bread: AC Bread, whole wheat	24 oz. loaf				
Most popular, whole wheat	24 oz. loaf				
Pasta: spaghetti, uncooked	16 oz.				
Tortillas: Mission 8" flour, soft taco size	10 count				
Most popular, soft taco size	10 count				
Crackers: Pilot Bread	2 lb				
Crackers: Nabisco saltine crackers	1 lb				
Most popular	1 lb				
Meat, Poultry, Seafood, Eggs					
Ground beef: lean, 15% fat	\$/lb				
Chuck roast: USDA Choice, bone-in	\$/lb				
Steak: round, USDA Choice, boneless	\$/lb				
Steak: New York, USDA Choice, boneless	\$/lb				
Chicken: whole uncut	\$/lb				
Chicken: breast, boneless	\$/lb				
Bacon: Bar-S, thick-sliced	1 lb				
Most popular	1 lb				
Pork chops: center cut, bone-in	\$/lb				
Ham: boneless, NOT canned	\$/lb				
Hot Dogs: Bar-S	\$/lb				
Most popular	\$/lb				
Spam luncheon meat	12 oz.				
Tuna: light, chunk, in oil	6 oz. can				
Eggs: Grade AA, large	18 count				
Eggs: Grade AA, large	Dozen				
Dairy					
Milk: Darigold, fresh, whole	1 gallon				
Most popular, fresh, whole	1 gallon				
Milk: Darigold, fresh, 2% low fat	1 gallon				
Most popular, fresh, 2% low fat	1 gallon				

Butter: Flavorite, salted	1lb stick				
Most popular, salted	1lb stick				
Cheese: Tillamook cheddar cheese	2 lb				
Most popular, cheddar cheese	2 lb				
Cheese: Kraft American singles	16 slices				
Most popular sandwich cheese slices	16 slices				
Sour cream: Darigold	16 oz.				
Most popular	16 oz.				
Yogurt: Yoplait, blueberry	6 oz.				
Most popular	6 oz.				
Ice cream: Vanilla, premium	1.75 qts.				
Fruits and Vegetables					
Apples: Red Delicious	\$/lb				
Most popular	\$/lb				
Bananas	\$/lb				
Oranges: navel	\$/lb				
Potatoes: Russet	10 lb bag				
Lettuce: iceberg	each				
Tomatoes: large red, not on vine	\$/lb				
Onions: yellow, medium	\$/lb				
Canned Corn: Del Monte, kernel	15.25 oz.				
Most popular, kernel	15.25 oz.				
Canned green beans: Del Monte, CUT	14.5 oz				
Most popular	14.5 oz				
Canned mandarin oranges: Dole	11 oz.				
Most popular	11 oz.				
Orange juice: frozen concentrate	12 oz. can				
Other Food Items					
Soft drinks, NOT diet: Coke	12-pack				
Pepsi	12-pack				
7-Up	12-pack				
Coffee: Folgers, Columbian	27.8 oz. canister				
Most popular, caffeinated	27.8 oz. canister				
Tea bags: Lipton, NOT ice tea	Box of 16				
Most popular hot tea bags	Box of 16				
Soup: Top Ramen noodles, chicken	1 package				
Ketchup: Heinz	24 oz.				
Most popular	24 oz.				
Jelly: Smuckers, strawberry	18 oz. jar				
Most popular, strawberry	18 oz. jar				
Peanut butter: JIF, creamy	18 oz. jar				
Most popular, creamy	18 oz. jar				
Vegetable oil	32 oz.				
Miscellaneous					
Cigarettes: Marlboro Kings, regular filter	1 pack				
Shaving cream: Gillette, regular foam	11 oz.				
Most popular	11 oz.				
Toothpaste: Colgate Total, regular/mint flavor	6 oz.				
Most popular	6 oz.				
Shampoo: Suave, NOT professional grade	15 oz.				

Most popular	15 oz.				
Razor: Men's Gillette replacement blades	8 pack				
Most popular, no special ingredients	8 pack				
Soap: Dial, body bar	3 bar pack				
Most popular	3 bar pack				
Toilet paper, double roll	12 rolls				
Paper towels	1 roll				
Laundry soap: Tide, original scent, no additives	70 oz.				
Most popular, original scent	70 oz.				
Dish detergent: Dawn	28 oz.				
Most popular	28 oz.				
LIQUOR STORE					
Alcohol (Non-restaurant consumption)					
Beer: Budweiser, 18-pack	12 oz. cans				
Beer: Coors, 18-pack	12 oz. cans				
Wine: Gallo Chardonnay	1.5 liter bottle				
Wine: Gallo Cabernet Sauvignon	1.5 liter bottle				
Liquor: Seagrams VO	750 mL				
Liquor: Bacardi Superior Puerto Rican Rum	750 mL				
CLOTHING STORE					
Men's winter boot: Sorrel	1 pair				
Most popular	1 pair				
Men's underwear: Hanes Classic	3 pack				
Most popular	3 pack				
Men's socks: white crew	6 pack				
Men's pants: Dockers khaki	1				
Most popular, khaki	1				
Men's dress shirt: long sleeve, cotton/poly	1 shirt				
Men's Carhartt pants: Work Double Front	1				
Most popular work pant	1				
Men's jean: Levi 501, classic	1				
Most popular	1				
Women's pants: Dockers flat front khaki pants	1				
Most popular	1				
Women's jeans: Levi or Lee, classic	1				
Most popular, classic	1				
Women's underwear: Jockey	3 pack				
Most popular	3 pack				
Unisex rubberboots	1 pair				
Kid's rubberboots	1 pair				
Kid's shoes: Sketchers	1 pair				
Most popular	1 pair				
Kid's pajamas: cotton/poly, top & bottom	1 pair				
RESTAURANT					
Breakfast: 2 eggs, toast, coffee					
Pancakes, coffee					
Lunches: Hamburger, fries, coke					
Burrito, taco, coke					
Dinners: Steak, potato, salad, coffee					
Spaghetti, bread, salad, coffee					

BARS					
Alcohol not to be consumed at home					
Margarita					
Rum and Coke (Bacardi Superior)					
Gin and Tonic					
Wine: House red	1 glass				
House white	1 glass				
Beer: Budweiser	12 oz. can/bottle				
Alaskan	1 pint				
MISCELLANEOUS					
Movie theater ticket, new release	1 adult				
DVD rental	1 new release				
Rifle: Remington 30-06, 700 model, not stainless, not synthetic stock					
DURABLE GOODS					
Household Appliances/Goods					
Refrigerator: GE, top freezer, NOT stainless steel	22-25 cu. ft				
Most popular					
Freezer: GE, chest, NOT stainless steel	15 cu. ft.				
Most popular					
Washing machine: GE, top loader, multiple cycle	4.0 cu. ft. cap.				
Most popular					
Television: Panasonic, LCD display	32"				
Most popular					
Toaster: Hamilton Beach, 2 slice					
Most popular					
Blender: Hamilton Beach, plastic jug, 10-speed					
Most popular					
Vacuum cleaner: Hoover Windtunnel, upright, bagless, 12 amp.					
Most popular					
DVD player: Toshiba, progressive scan					
Most popular					
Queen size box spring: Spring Air, Four Seasons					
Most popular					
Queen size mattress: Spring Air, Four Seasons					
Most popular					
Queen size sheet set (flat, fitted, two pillow cases)	180-200 thread count				
PC computer: HP Pavillion, a6600z series	NOT laptop				
Most popular	NOT laptop				
TRANSPORTATION					
Personal Transportation	2008 Vehicles				
Truck: Ford F-150, XL, regular cab, standard package					
Most popular, American made, regular cab					
Sedan: Toyota Camry, 5 speed auto					
Most popular					
Snow machine: Polaris 800 RMK 155					
Most popular					
Four-wheeler: Kawasaki 750 Brute Force 4x4i					
Most popular					

Auto Services					
Oil/filter change: 2008 Ford F-150					
Oil/filter change: 2008 Toyota Camry					
Auto Supplies					
Oil 10 W 40	1 quart				
Antifreeze	1 gallon				
Vehicle battery: auto sedan	12 volt sedan				
ADDITIONAL GOODS AND SERVICES					
Communications					
Basic and preferred cable (or satellite)	monthly				
Internet dial-up	monthly				
Internet-DSL	monthly				
Phone	monthly				
Long distance (in-state)	rate per minute				
Wireless	monthly				
Medical					
Adult physical exam: age 18-39	per visit				
Adult physical exam: age 40-64	per visit				
Adult physical exam: age 65+	per visit				
Well-child physical: age 0-11 months	per visit				
Well-child physical: age 1-4 years	per visit				
Well-child physical: age 5-11 years	per visit				
Well-child physical: age 12-17 years	per visit				
Physician office visit	per visit				
Hospital stay (medical/surgical)	1 bed day				
Dental exam	per visit				
Dental cleaning: adult	per visit				
Dental cleaning: child	per visit				
Dental filling	per filling				
Eye exam	per visit				
Eyeglasses, lens/frame	1 pair				
Energy/Fuel					
Regular unleaded gasoline and diesel fuel	per gallon				
Home heating oil (with price breaks)	per gallon				
Natural gas, average per month including taxes	100 ccf				
Electric power costs per month	500kWh				
Electric power costs per month	1,000kWh				
Auto insurance					
Comprehensive coverage	6 month premium				
Travel					
Round-trip flight to/from Seattle (inc. air travel to hub)	per flight				
Round-trip flight to/from nearest major hub	per flight				