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6803 HOUSE HEALTH EDUCATION & SOCIAL SERVICES

## **The Reverse Pricing Method of Cost Differential Research**

The cost of living methodology is based on the "reverse pricing" concept. This concept is important because overall school district cost differentials are also based on the reverse pricing concept. Reverse pricing is a differential measuring technique which considers the uniqueness of each area (or school district) of Alaska. It measures what is consumed in each district and what prices are paid for those items. This unique expenditure pattern for each district is then duplicated in the base district at base district prices. The difference is the district differential.

Reverse pricing answers the question, "How much would it cost to operate your existing household (or school district) if it remained exactly as it is but was located in Anchorage?" In reverse pricing, the household (or school district) would continue to buy the same items in the same quantities as it now does, except it would pay Anchorage prices.

Reverse pricing allows the cost of living (or operating a school district) in Nome, for example, to be compared with the cost of living (or operating a school district) as one does in Nome but in Anchorage at Anchorage prices. One cannot price out how one lives in Nome and compare that equitably to the cost of living as one does in Anchorage. The same is true for school districts. Lifestyles, local conditions and expenditure patterns in many areas are simply not comparable to those in Anchorage .

Just as it is impossible to duplicate and price out the Anchorage lifestyle in each of 91 communities surveyed in 1985, it is likewise impossible to invent and price out microcosms of the Anchorage school district in 53 regions of Alaska. Reverse pricing eliminates this need which has tended to produce unrealistic results in some past Alaska cost of living studies.

The advantage of reverse pricing is that it respects the expenditure patterns of households (and school districts) in each location. It measures how people actually live and what is consumed and then compares local prices to Anchorage prices for these items.

Forward pricing, on the other hand, imposes the expenditure patterns of the base district onto other areas of Alaska, few of which resemble Anchorage. It then prices how much it would cost to live an Anchorage lifestyle in other locations in Alaska. The truth is, in much of Alaska, people don't live an urban lifestyle and therefore do not have the same expenditure pattern as Anchorage households. Further, many items consumed in the urban lifestyle are simply not available or are at least not commonly purchased in many areas of Alaska. On the other hand, most everything purchased in other areas of Alaska is actually available in Anchorage and can be priced for comparison using reverse pricing.

For households, this means continuing to buy the same mix of food, size and type of housing, types of transportation, clothes, entertainment/recreation, medical services and miscellaneous items which the household currently buys in Nome, Craig, Dillingham or wherever.

For school districts, this means continuing to educate the same number of children with the same staff in the same buildings with the same professional/technical services, communications, insurance coverage, utilities, supplies, materials, media and equipment as the district now has in Nome, Craig, Dillingham or wherever. The reverse pricing comparison is simply the difference between paying local vs. Anchorage prices for the household (or school district) market basket as it exists today in its home location.

### **Methodology for Household Expenditure Categories**

Methodologies from the 1985 *Alaska Geographic Differential Study* for measuring household cost of living differentials in the seven major Consumer Price Index (CPI) expenditure categories are described below. This is included so readers can gain a basic understanding of how cost of living research is conducted and how the computations are made. The seven household expenditure categories are housing, food, transportation, clothing, entertainment/recreation, medical and miscellaneous.

#### **Housing**

It was necessary to develop a separate methodology for housing costs in the Alaska. Unlike items in most other expenditure categories, housing has no readily available standard unit for price comparisons. Housing does not come by the pound, gallon, 16-oz. can or dozen. Housing throughout the state varies greatly by size, type and quality. While no measurement exists for housing quality, one does exist for housing quantity - square feet.

The standard unit of price comparison for the housing differential is cost per square foot. All monthly housing costs related to shelter, fuels and utilities were collected through interviews with each household in the sample. Households revealed their spending on shelter costs (mortgage and/or rent payments, mobile home space rental, condo fees, taxes and insurance), fuels (amount spend on fuels whether oil, gas, wood or propane) and on utilities (water, sewer, electricity, garbage, basic cable TV charge and telephone). These monthly costs were then totalled and a cost per square foot calculated. This cost in each district was then compared to the cost per square foot of housing in the base district, Anchorage. The difference is the housing differential in each district.

Using this methodology, the per gallon price of heating fuel is not compared directly to an Anchorage price for each of the several types of fuel. Instead, the cost of heating a standard unit of housing (a square foot) is compared between Anchorage and each district, regardless of the type of fuel used. This simplified the virtually impossible task of quantifying consumption, pricing the mix of fuels and adjusting for burning efficiency of each of several fuels used by Alaska households. The housing methodology also had the advantage of compensating, to some extent, for differences in housing quality. Poor quality housing, while usually cheaper in terms of mortgage or rent payments, is often more expensive to heat. The square foot method considers the difference in heating costs rather than just the difference in fuel prices.

For shelter costs, the amount households actually paid for mortgages and/or rent was the amount used. Some households held older, cheaper mortgages or none at all if the house was paid off. These amounts were averaged in with all other mortgages payments - many of them recent and with high interest rates. Shelter cost averages also included households paying subsidized rental or mortgage rates.

The important thing for readers to understand is that the 1985 study measured the cost to the household, whatever that cost was. It did not measure the cost to other entities such as school districts which may bear some of the cost of shelter. It also was not a survey of current market rates for home owners. It was a study of what Alaskan households pay for their housing. Any alternative would have involved measuring an amount which was not paid for housing - an example being the rental equivalent of the 2/3 of all Alaska housing which is owner occupied. Measuring an amount not actually paid by a household was not acceptable methodology for the 1985 study.

Housing expenditure weights vary from 19% to 34% of household expenditures. Ironically, more of total income is spent on housing in urban areas than in remote areas and this is true for several reasons. It is due partly to the fact that other expenditure items (food, transportation, clothing) take less of the family budget because of lower prices in urban areas. This allows the urban household to spend more on housing. Secondly, housing tends to be more expensive in high density urban areas where land costs and property taxes are high when compared to remote areas. Third, in urban areas most homes pay for the full complement of utilities including water, sewer and garbage. Some rural areas do not have these amenities available and therefore do not pay for them. Fourth, urban housing tends to be significantly larger than rural housing. The average Anchorage house is twice as large as the average Bethel home. Therefore, greater quantities of heating fuel, electricity and water are consumed, increasing the total expenditure weight of urban housing.

Finally, housing expenditure weights tend to be income sensitive. The higher the income, the greater proportion of it is spent on housing. While expenditures on the basics of food, clothing and transportation generally level off when income increases, the extra money usually gets spent on larger, better quality housing. Thus, in urban areas where incomes are higher, more of it is spent on housing. Conversely, in remote areas with lower income, a smaller proportion is spent on housing while relatively greater percentages are spent on the basics of food, transportation and clothing.

Housing cost differentials varied from a low of .70 to 1.00 for the base district to 1.41 in a remote area of the state. In fact, 12 districts had per square foot housing costs lower than the base district. Several factors explain this including urban vs. rural land costs, property taxes, age and condition of housing, local economic conditions, housing stock availability, housing quality, age and rates of average mortgages, population stability, housing subsidies and home ownership patterns. Perhaps the most notable example of Anchorage housing being relatively expensive is the comparison to housing in the MatSu Valley. There, land costs are lower and many areas do not have (and do not pay for) the full complement of housing utilities. As a result of living outside of the densely populated Anchorage urban area, MatSu residents pay 22% less per square foot for their housing than Anchorage residents.

Clearly, Anchorage households are in a trade-off situation. They pay more for housing by living in a dense urban area but in turn enjoy the benefits of lower prices and more selection in the retail sector.

Finally, housing is by far the single most influential factor in the difference in cost of living between Anchorage and Seattle. In 1985, Anchorage housing costs (1.00) were nearly twice those of Seattle (.53 price differential) and accounted for nearly all of the 16% difference between the locations. In 1988, with the significant decline in Anchorage residential real estate values and rentals, the difference from Seattle could be as little as 10%.

### **Food**

The food market basket of 67 items was taken from the larger market basket of the University of Alaska Cooperative Extension Service (CES) which has been conducting food cost surveys in Alaska since after statehood. Items selected - after consultation with the CES food survey expert - were those items most commonly consumed and most likely to be available in most of Alaska. This maximized the number of direct price comparisons which could be made between all other districts and Anchorage.

To identify local consumption patterns, food was broken down into groups and the household expenditure pattern for each food group was factored into the final food differential. For example, if residents of the Nome districts purchased more meat and less produce than Anchorage residents, this was

accounted for by weighting Nome's meat and produce expenditures accordingly. This technique is part of the reverse pricing methodology which respects and accounts for local consumption and expenditure patterns. The food groups were meat, cereal (grains, breads, cereals), dairy, fruits and vegetables (produce), non-alcoholic beverages (soda, coffee, tea, juice), prepared foods (canned and frozen including soups, mayonnaise, jelly, sugar, cooking oils and deserts) and food away from home (restaurants). Restaurant food comparisons included comparison pricing of the most common meals such as the standard breakfast of bacon/eggs/hashbrowns/coffee. Food away from home accounted for as much as 30% of some urban food budgets down to almost nothing in some rural districts with few restaurants.

Food outlets surveyed were those where households said they did most of their shopping. The number of food stores surveyed varied from 3 to 8, depending on the size of the community. Obviously, in communities with less than three outlets, all existing ones were surveyed. Again, this technique measures what people actually paid in the outlets in which they actually shopped so local expenditure patterns were preserved in the data. For example, if 60% of the households in a community shopped at one store, the prices of that store were given 60% of the price weight for that community.

Food expenditures vary from 22% of the typical household budget in Anchorage the base district to 36% in the most remote districts with the highest prices. Part of the reason for the high food weights in remote areas has to do with income levels. The poorer the district, the lower the income spent on housing and the more is spent on food. Another factor is the absence of other consumer expenditure opportunities in remote areas with weak economies. Some income is not spent simply because there is no selection to spend it on.

Food price differentials varied significantly, from 1.00 in the base district to a high of 1.67 in the Barrow/Kotzebue district. Price differentials in seven remote districts exceeded 1.38. In contrast, food prices before sales tax in the six largest urban areas varied by less than 7% in 1985. Most of the population of Alaska, which lives in these six urban areas, pays about the same food prices.

### **Transportation**

The third largest household expenditure category, behind housing and food, is transportation. The transportation market basket in the *Alaska Geographic Differential Study* consisted of 25 items in standard categories used in the Consumer Price Index. Initially, some 36 transportation market basket items were included in the survey and from these, the items most effectively measuring differentials in most districts were selected. These 25 items were grouped into seven categories under local transportation and one under nonlocal transportation (air fare). The seven local transportation categories were gasoline (regular and unleaded), parts and repairs (batteries, tires, oil,

antifreeze and hourly auto repair shop rates), insurance (rate for a specific model car and specific driver, automobiles (sale prices of 12 models of new and used cars and trucks), snowmobiles/ATVs, boats (16-ft aluminum skiff) and bus/taxi transportation.

The nonlocal transportation category included the cost of air fare from each district to Seattle compared with an Anchorage to Seattle fare. While a more comprehensive measure might have included costing out places where most people in a district traveled to, the complexity of the interviewing and multiple fare calculations and weighting were beyond the scope of the study. For the relatively small portion of the average household budget allocated to air travel, the district-Seattle differential was considered representative. Districts with more air travel in the typical budget received credit by having greater weights assigned to air travel costs.

Transportation market basket prices were collected on the local costs of each of these items by means of the retail price survey. In cases where items were not purchased locally, prices in the locations where they were purchased, plus freight, were used. For example, many remote districts purchased their vehicles of all kinds in Anchorage, Fairbanks and Seattle, then shipped to the buyer's local area.

Households were surveyed to determine how much spending was done on each of the eight transportation categories. This way, districts spending more on snowmobiles and boats than on cars, for example, were credited with those expenditure weights as well as the differentials between local and Anchorage prices. This, of course, is reverse pricing. Local consumption patterns are identified and quantified, then compared to Anchorage prices. Districts spending more than normal on air travel are credited in the same manner.

Total transportation expenditure weights vary between 16% and 25% of household expenditures, depending on the district. Most of this total is local transportation expenditures. Nonlocal transportation expenditures, even in the most remote districts, do not usually exceed 10% of all expenditures. Only in remote districts which are literally devoid of other consumer spending opportunities, such as the Aleutians and Bristol Bay, do nonlocal transportation expenditures exceed 11%. A typical urban household budget in Anchorage or Juneau, for example includes 5-7% for nonlocal transportation compared to about twice that for local transportation expenditures. For example, the typical Anchorage household spends about 12% of their budget on automotive transportation and 5% on nonlocal travel.

### **Clothing**

The clothing market basket consisted of 59 apparel and footwear items and six clothing upkeep services including coin laundry and dry cleaning. The clothing differential is weighted in three groups in accordance with the

Anchorage CPI subcategory expenditure weights for womens'/girls' clothing, mens'/boys' clothing and upkeep. The typical household spends about half of their clothing budget on womens'/girls' clothing, 35-40% on mens'/boys' clothing and 10-15% on upkeep, mostly dry cleaning.

Clothing items selected for the market basket ranged from pants, dresses, sweaters and blouses of differing fabrics to blue jeans, insulated winter boots, running shoes, work shirts and underwear. Thirty seven items were womens'/girls' clothing and footwear and 22 were mens'/boys'. The items were kept generic to allow for wider regional pricing coverage. If specific brands, sizes and styles had been specified, coverage would have been limited to the urban areas which have a wide selection. On the other hand, using generic products caused some problems because prices ranged widely for some of the items. However, it was found that about 80% of the 59 item market basket was useful for measuring differentials. The other 20% of the items were not used.

Differences in household expenditure weights for clothing were fairly modest. Three fourths of all districts spent 7% or 8% of their household budget on clothing. The lowest was 6% in Palmer/Wasilla and Fairbanks and the highest, 12% in Wade Hampton. In general, rural households spent slightly more of their budgets on clothing than urban households, indicating that the typical rural budget goes more for the basics.

Prices were collected in the retail price survey in the same manner as grocery prices. Households were asked where they purchased their clothing and these outlets were weighted accordingly. In districts except Anchorage, which has the greatest selection, significant percentages of clothing were purchased outside the community - by catalogue and in major regional centers while traveling. The percentage purchased outside the community was weighted and freight added to the catalog, Anchorage or Seattle prices where the items were purchased.

Clothing differentials tend to be low because clothing has low shipping weight (and therefore low shipping cost) in relation to total value. Clothing differentials are further modified by the Alaska traditions of catalog shopping and shopping when traveling to major cities. As a result, what households actually pay for clothing is some combination of local, catalog and urban prices. Clothing price differentials for most districts fall into the 1.10 to 1.20 range. Only two districts have differentials higher than 1.20 and five are below 1.10.

### **Recreation and Entertainment**

The goods and services in this market basket are those considered representative of what typical Alaskan households might be expected to buy in support of their leisure time needs. Sixteen items including a rifle, pistol,

softball bat, ball and glove, basketball, sport fishing rods and reels, cable TV subscriptions, records, tapes and videos and movie tickets were selected. Following the retail price survey, ten of these items were considered adequate measures of price differentials for most districts. These are the basis for recreation and entertainment differentials. Items from all major categories - hunting, sport fishing, sports and home entertainment - were included in this final selection.

Household expenditure weights on recreation and entertainment clearly reflect differences in district lifestyles and consumer selection. Households in the largest urban areas had the highest expenditures, 6% to 7%. This obviously reflected the variety of commercial opportunities for recreation and entertainment as well as the urban lifestyle of purchase goods and services for enjoyment. The lowest spending on recreation and entertainment - nearly half of all districts spent 3% to 4% - occurs in rural districts where the commercial fun opportunities are sparse and where lifestyles and spending are more oriented to the basics. Further, recreation and entertainment in rural areas tend to be more along noncommercial lines.

Price differentials are very modest in this category, ranging from slightly less than the base district in one case to a high of 1.21. Only two districts had differentials over 1.14.

### **Medical**

Medical services included in the medical market basket included both hospital and other medical items. The market basket consists of a physician's office call, the most common surgery, dentist x-rays, examination and most common procedure, optical exam, a pair of eyeglasses plus the daily rates for hospital private, semi-private and ward rooms. From this selection, the items found to be most effective in measuring differentials were the physician's office call, dental exam and most common procedure (a filling), eye exam, eyeglasses and daily rates for private and semi-private hospital rooms.

Household medical expenditure weights reflected racial differences in health care programs as well as the effects of consumer availability. Native Alaskans have complete coverage while other racial groups pay health care policy premiums and/or deductibles or some remain uninsured. In general, urban consumers spend much more heavily on health care than do rural households, partly as a result of availability and partly due to premiums and incomplete coverage. Households in three-fourths of all districts pay between 5% and 7% of their household budget on medical costs of all kinds. Households in five districts, all of them remote rural areas with high Alaska Native populations, pay out from 2% to 4% of their budgets for medical care.

### **Miscellaneous**

The CPI category of miscellaneous includes items which are mostly associated with personal care and its opposite, tobacco. Eight items were ultimately used in this market basket - shaving cream, lipstick, toothpaste, shampoo, toilet paper, laundry and bath soap and a carton of regular size filter cigarettes.

Household expenditure weights varied moderately with households in three-fourth of the districts spending between 4% and 6% of their budget on miscellaneous items. The range was also limited from 4% to 8%. No discernible urban/rural patterns were apparent.

Price differentials ranged widely and were similar to food price patterns. Many of these items are found in both food stores and drug/variety stores. Prices were collected from both types of outlets and averages. Prices for the same items tended to be higher in drug/variety stores than in food stores. They ranged from the base district 1.00 to remote rural differentials as high as 1.45. Miscellaneous differentials in eight rural districts topped 1.30.

### **Methodology for Computing School District Personnel Differentials**

As described in the previous section, the 1985 *Alaska Geographic Differential Study* data base was disaggregated from 19 to 53 districts. The data from 2,500 household interviews in 91 communities and 2,100 retail price surveys in 54 communities were recombined into the 53 Alaska school districts. This task was accomplished by a complex computer reprogramming process from the University of Southern California mainframe to an inhouse PC system. In the process, the weighting system for communities within the new districts was revised as well as the weighting of the retail outlets for food and clothing. Several hundred professional hours were required to perform the process of converting data for 19 districts into 53 districts.

Programs for the original data base were SAS and SPSS-X. Programs used to produce the final detailed differentials for each of the 55 districts included Z-Basic and Lotus 1-2-3. Finally, the results were converted to Excel for MacIntosh desktop publishing of the final document.

### **Expenditure Weights Adjustments**

Several procedures were followed when converting the original data base into expenditure weights for the seven household expenditure categories in each of the 53 districts.

In most cases, household expenditure weights resulting from the reprogramming fell within the normal ranges shown in the previous section. In districts where the expenditure weight for any of the seven household

items appeared outside normal ranges, further analysis was done to determine if these weights were appropriate for those items in those particular districts. When weights were outside the normal range or if no household surveys existed in the school district a set of rules were applied.

1. If no surveys existed in a district household expenditure weights from the closest similar district were used. Similar means similar in terms of social, economic and geographic characteristics. Thus, nearby similar district weights were used as proxies for those with missing data.
2. If the sample of households in any district produced an atypical weight in any category, the nature of that district was studied to see if the weight was justified. If not, then a proxy was assigned from the closest most similar district or group of districts.
3. If a district with a small household sample size had more than one weight outside the normal range, then the entire set of expenditure weights were replaced with those of the closest most similar district or district.
4. In cases where weighting data appeared atypical and the closest, most similar district also had small sample size problems, weights from the larger original election district in the 1985 study were substituted.

Readers should be cautioned that the sample sizes in many of the small districts are not large enough for precise statistical results. However, what makes the expenditure weights in most districts valid is the fact that expenditure patterns in a given area vary little from household to household. When variance is minimal, small sample sizes (less than 30), can closely reflect the true mean of the population being sampled.

#### **Retail Price Data Adjustments**

The retail price survey data base from the 1985 *Alaska Geographic Differential Study* was disaggregated in the same manner as the household expenditure data base. Prices from 2,100 outlets in 19 districts were reorganized and programmed into price data for the 53 school districts. The weights of retail outlets were recalculated based on the populations of their respective communities in the new districts.

Price data does not have sample size problem and therefore is not subject to the same error as household expenditure weight data. In small communities surveyed virtually every outlet of significance was surveyed, therefore the coverage was quite complete. And in small communities where residents do a significant share of their shopping in urban areas and/or through catalogs, those prices (plus shipping) were also averaged in. For larger communities with many outlets, four to eight outlets in each category were surveyed and those selected were the outlets where households did most of their buying.

For example, in Anchorage, eight food stores were surveyed and this included chain stores in which Anchorage households did nearly 100% of their food shopping.

The primary problem with price data was the lack of it in many districts and communities. Only 54 communities had price surveys conducted in them, compared to 91 with household surveys. Further, the limited retail offerings in many surveyed communities means that a number of goods and services simply were not present to have prices to be surveyed.

Price adjustments were made using rules very similar to those for the household expenditure weights. For districts without price data, prices of the closest similar district are used. Further, when a price differential falls outside the normal limits of the original 19 districts, an analysis of that district is done to see if the price is justified. If not, then a price from the closest similar district is used. When prices from the closest similar district do not appear complete or within the reasonable range, then the price(s) of the larger original election district was substituted.

Tables II-2 and II-3 give the household expenditure weights (II-2) and the price differentials (II-3) are for each district. The final differential is calculated in Table II-4 at the end of this chapter. This is done by multiplying the weight in each category in Table II-2 by the price of that category in Table II-3. These seven products are then added together in Table II-4 and their sum is the district personnel differential.

Table II-2

### District Household Expenditure Category Weights

(% of average household budget spent on each category)

District	Housing	Food	Transp.	Clothing	Rec & Ent.	Medical	Misc.
<b>Southern Southeast</b>							
Annette Island	0.22	0.35	0.21	0.08	0.04	0.04	0.06
Craig	0.22	0.35	0.21	0.08	0.04	0.04	0.06
Klawock	0.22	0.35	0.21	0.08	0.04	0.04	0.06
Hydaburg	0.22	0.35	0.21	0.08	0.04	0.04	0.06
Southeast Island	0.22	0.35	0.21	0.08	0.04	0.04	0.06
<b>Urban Southeast</b>							
Ketchikan	0.31	0.29	0.18	0.08	0.04	0.05	0.05
Wrangell	0.23	0.32	0.18	0.11	0.03	0.07	0.06
Petersburg	0.25	0.33	0.17	0.09	0.05	0.06	0.05
Sitka	0.30	0.28	0.16	0.08	0.05	0.06	0.07
Juneau	0.33	0.24	0.17	0.08	0.07	0.06	0.06
<b>Central and Northern Southeast</b>							
Kake	0.16	0.36	0.21	0.12	0.04	0.03	0.08
Chatham	0.20	0.40	0.15	0.12	0.03	0.02	0.08
Hoonah	0.15	0.41	0.22	0.09	0.02	0.05	0.06
Pelican							
<b>Other Southeast</b>							
Haines	0.26	0.33	0.18	0.08	0.04	0.07	0.04
Skagway	0.26	0.30	0.20	0.07	0.02	0.08	0.07
Yakutat	0.28	0.33	0.21	0.06	0.03	0.05	0.04
<b>Prince William Sound</b>							
Cordova	0.18	0.31	0.26	0.08	0.06	0.08	0.03
Chugach							
Valdez	0.31	0.22	0.21	0.07	0.05	0.07	0.07
Copper River	0.35	0.25	0.24	0.03	0.05	0.03	0.05
<b>Anchorage Urban Influence Area</b>							
Anchorage (Base District)	0.34	0.22	0.17	0.08	0.07	0.06	0.06
Matanuska-Susitna	0.34	0.27	0.18	0.06	0.04	0.05	0.06
Kenai Peninsula	0.26	0.26	0.21	0.08	0.05	0.07	0.07
<b>Kodiak</b>	0.30	0.28	0.19	0.08	0.05	0.05	0.05

Table II-3

### District Household Price Differentials

(Anchorage prices = 1.00)

District	Housing	Food	Transp	Clothing	Rec & Ent	Medical	Misc.
<b>Southern Southeast</b>							
Annette Island	0.85	1.10	0.82	1.10	1.05	1.15	1.31
Craig	0.85	1.10	0.82	1.10	1.05	1.15	1.31
Klawock	0.85	1.10	0.82	1.10	1.05	1.15	1.31
Hydaburg	0.85	1.10	0.82	1.10	1.05	1.15	1.31
Southeast Island	0.85	1.10	0.82	1.10	1.05	1.15	1.31
<b>Urban Southeast</b>							
Ketchikan	0.95	1.09	0.83	1.23	1.26	1.15	1.09
Wrangell	0.65	1.04	1.04	1.15	1.06	1.09	0.98
Petersburg	0.76	1.15	0.94	1.12	1.05	1.09	1.12
Sitka	0.85	1.18	0.94	1.10	0.97	1.04	1.17
Juneau	1.01	1.07	0.93	1.14	1.03	1.03	1.13
<b>Central and Northern Southeast</b>							
Kake	0.84	1.26	0.82	1.10	1.08	1.01	1.25
Chatham	0.69	1.25	1.00	1.10	1.09	1.04	1.19
Hoonah	0.53	1.25	0.90	1.10	1.20	0.90	1.22
Pelican							
<b>Other Southeast</b>							
Haines	0.69	1.21	1.02	1.10	1.40	1.03	1.11
Skagway	0.83	1.19	0.99	1.07	1.40	1.03	0.98
Yakutat	0.96	1.58	1.06	0.95	1.33	0.90	1.29
<b>Prince William Sound</b>							
Cordova	0.90	1.29	1.12	1.41	1.37	1.12	1.29
Chugach							
Valdez	0.87	1.23	1.11	1.10	1.17	1.06	1.08
Copper River	1.05	1.27	1.10	0.96	1.18	1.00	1.22
<b>Anchorage Urban Influence Area</b>							
Anchorage (Base District)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Matanuska-Susitna	0.78	1.00	1.04	1.14	1.00	0.99	0.96
Kenai Peninsula	0.76	1.12	1.09	1.14	1.09	0.87	1.17
Kodiak	0.81	1.18	1.02	1.12	1.07	0.97	1.21

Table II-2 continued

### District Household Expenditure Category Weights

(% of average household budget spent on each category)

District	Housing	Food	Transp.	Clothing	Rec & Ent.	Medical	Misc.
<b>Alaska Peninsula and Aleutian Islands</b>							
Adak							
Pribilofs	0.14	0.31	0.31	0.10	0.03	0.06	0.05
Aleutian (Region) East							
Unalaska	0.26	0.29	0.21	0.07	0.07	0.04	0.06
Dillingham	0.23	0.29	0.19	0.10	0.05	0.06	0.08
Bristol Bay	0.24	0.24	0.25	0.06	0.05	0.07	0.09
Lake and Peninsula Southwest							
<b>Yukon and Kuskokwim Delta</b>							
Lower Kuskokwim	0.25	0.36	0.18	0.10	0.03	0.03	0.05
Yupit							
Kashunamiut							
Lower Yukon	0.24	0.33	0.23	0.12	0.04	0.02	0.02
St. Mary's	0.24	0.33	0.23	0.12	0.04	0.02	0.02
<b>Interior Remote</b>							
Kuspuk	0.19	0.36	0.20	0.08	0.05	0.04	0.08
Iditarod	0.19	0.36	0.20	0.08	0.05	0.04	0.08
Galena	0.19	0.36	0.20	0.08	0.05	0.04	0.08
Yukon-Koyukuk	0.19	0.36	0.20	0.08	0.05	0.04	0.08
Yukon Flats	0.19	0.36	0.20	0.08	0.05	0.04	0.08
Tanana	0.19	0.36	0.20	0.08	0.05	0.04	0.08
<b>Interior Road System</b>							
Alaska Gateway							
Delta/Greeley	0.29	0.31	0.21	0.06	0.04	0.05	0.04
Nenana	0.29	0.31	0.21	0.06	0.04	0.05	0.04
Fairbanks	0.32	0.24	0.19	0.07	0.06	0.05	0.07
<b>Arctic</b>							
North Slope	0.27	0.31	0.20	0.07	0.02	0.03	0.10
Northwest Arctic	0.31	0.32	0.18	0.06	0.04	0.04	0.05
Nome	0.36	0.35	0.14	0.06	0.03	0.02	0.04
Bering Straits	0.24	0.29	0.18	0.10	0.05	0.09	0.05

Source: Derived from data base of Alaska Geographic Differential Study, 1985, by The McDowd Group for the Alaska Department of Administration, Division of Labor Relations.

Table II-3 continued

### District Household Price Differentials

(Anchorage prices = 1.00)

District	Housing	Food	Transp	Clothing	Rec & Ent	Medical	Misc.
<b>Alaska Peninsula and Aleutian Islands</b>							
Adak							
Pribilofs	1.23	1.37	1.49	1.04	1.06	0.97	1.39
Aleutian (Region) East							
Unalaska	1.23	1.37	1.49	1.04	1.06	0.97	1.36
Dillingham	1.12	1.42	1.40	1.11	1.18	1.07	1.61
Bristol Bay	1.02	1.68	1.40	1.11	1.18	1.07	1.67
Lake and Peninsula Southwest							
<b>Yukon and Kuskokwim Delta</b>							
Lower Kuskokwim	1.41	1.47	1.41	1.18	1.27	1.07	1.39
Yupit							
Kashunamiut							
Lower Yukon	1.11	1.65	1.55	0.97	1.03	1.17	1.57
St. Mary's	1.11	1.65	1.55	0.97	1.03	1.17	1.57
<b>Interior Remote</b>							
Kuspuk	1.05	1.61	1.44	1.10	1.16	1.01	1.47
Iditarod	1.05	1.50	1.44	1.16	1.08	1.01	1.23
Galena	1.05	1.49	1.42	1.22	1.08	1.01	1.41
Yukon-Koyukuk	1.05	1.58	1.62	1.22	1.08	1.01	1.36
Yukon Flats	1.05	1.62	1.36	1.23	1.43	0.94	1.54
Tanana	1.02	1.59	1.55	0.93	1.08	1.01	1.32
<b>Interior Road System</b>							
Alaska Gateway							
Delta/Greely	0.92	1.10	1.22	1.22	1.18	1.14	1.21
Nenana	0.89	1.33	1.28	0.97	1.18	1.08	1.12
Railbelt							
<b>Fairbanks</b>	0.92	1.02	1.16	1.22	1.08	0.94	1.06
<b>Arctic</b>							
North Slope	1.39	1.71	1.59	1.12	1.54	1.18	1.63
Northwest Arctic	1.34	1.59	1.45	0.99	1.19	1.08	1.44
Nome	1.36	1.60	1.28	1.00	1.06	1.17	1.54
Bering Straits	1.13	1.64	1.41	0.96	1.12	1.17	1.31

Source: Derived from data base of *Alaska Geographic Differential Study*, 1985, by The McDowell Group for the Alaska Department of Administration, Division of Labor Relations.

## **Summary of Results**

### **School District Personnel Differentials**

Study results and adjustments to district household expenditure weights and retail prices by district groups are described below:

**Southern Southeast:** Craig, Klawock, Hydaburg, Annette Island and Southeast Island are all assigned Craig household expenditure weights since Craig was the only community among these districts to have a significant number of households surveyed in the 1985 study. Craig's weights were adjusted to compensate for an overweight in medical and an underweight in food expenditures. These weights now reflect typical rural Alaska patterns which include high food expenditures and minimal out-of-pocket spending on medical costs.

For prices differentials the retail prices of the Craig survey are used in all five small southern southeast districts. In general, price levels compared to Anchorage are higher for all categories of items except housing and transportation. The lower housing costs in these small communities reflect something in common with most areas of rural Alaska. (See housing discussion under methodology in previous section).

In short, the higher retail prices representing this group of districts is balanced out by their lower-than-Anchorage cost of housing. The resulting household cost of living differentials for these five districts fall into the range typical of virtually the entire region, 1.01.

**Urban Southeast:** Household expenditure weights from the 1985 study were used for Ketchikan, Juneau and Sitka. The original Wrangell-Petersburg-Kake election district was disaggregated into three separate district, each with their own community weights. Petersburg and Wrangell weights are specifically from these respective communities. Wrangell's medical prices were out of range at the low end and Petersburg's (1.09) were substituted.

The region's five largest districts - Ketchikan, Wrangell, Petersburg, Sitka and Juneau - have about the same household cost of living ranging from a low of .97 for Wrangell to a high of 1.03 for Juneau. Given the methodology and degree of accuracy of this type of research, numbers in this range are considered virtually the same. Variations are due largely to the differences in what residents of Juneau pay for housing (per sq. ft.) compared to residents of other southeast urban communities.

In general, residents of larger urban communities pay more for housing and less for food and other retail items than do residents of smaller urban communities. There is no question that everyday retail prices in Juneau and

Anchorage are lower than in other southeast locations but this advantage is balanced out by higher urban housing costs on a square foot basis.

**Central and Northern Southeast:** Kake, Hoonah, Chatham and Pelican are placed in this group and household surveys were conducted in Hoonah, Angoon (Chatham) and Kake in the 1985 study. The expenditure weights used were those calculated from the sample in each of these first three districts. In the case of Pelican, where no surveys were conducted, expenditure weights from the closest community - Hoonah - were used.

Food price adjustments were made in Hoonah and Angoon by combining the prices in both communities, thereby increasing the items and outlets surveyed. The same food price differential was assigned both districts. Clothing prices in these two districts were outside the range at the low end and Kake's clothing prices were substituted.

These communities showed a very typical rural Alaska pattern of lower expenditures on housing and a significantly higher proportion of the household budget spent on food. In rural Native areas, housing mortgage and rent payments tend to be very low compared to Anchorage due to subsidies of various kinds, little or no land costs due to Native entitlements and a quality of housing which does not command top price. Even though utilities are often quite expensive in rural communities it is not enough to offset the low mortgage/rent payments. Therefore housing in rural areas is often cheaper, especially in Southeast Alaska where the climate is mild compared to most of rural Alaska.

For example, in both Hoonah and Angoon the proportion of total spending on housing ranges from 15-20%. In contrast, residents of these communities spend 40% of their budget on food - partly because food prices are significantly higher than in Anchorage and partly because expenditures on housing are lower, making food a larger than normal portion of the budget. Kake exhibits a similar pattern, 16% spent on housing and 36% on food. This pattern is typical throughout rural Alaska.

Because of more spending on higher priced food and less spending on lower priced housing, the cost of living differential for these districts is somewhat higher than in urban southeast and in southern southeast. These central and northern communities have less access to the regional center and do not benefit from road systems in their areas. Their differentials are somewhat higher and include 1.03 (Hoonah and, by proxy, Pelican), 1.05 (Kake) and 1.07 (Chatham).

**Other Southeast:** Haines and Skagway are small communities but benefit from being on the mainline ferry and highway transportation systems. As a result, their cost of living falls into the same range as the region's urban

communities. Haines and Skagway expenditure weights also resemble the regional urban pattern more than the rural regional pattern. Expenditures on housing in these districts are 26% of the household budget, significantly higher than that of the rural communities in the region. But food expenditure weights in Haines and Skagway are lower reflecting lower retail prices than in Hoonah and Angoon, for example.

Prices are also typical of smaller regional urban communities with housing costs less than Juneau (and Anchorage) while retail prices are higher. The result is household cost of living differentials of 1.02 for Haines and 1.03 for Skagway. Both of these are slightly lower than the larger original election district differential of 1.06. However, when rural areas are disaggregated out of the Haines-Skagway data, it is obvious that Yakutat especially raised the differential for the whole district.

Yakutat is usually considered a Southeast regional community but in terms of geography, access and economy it more resembles small Prince William Sound communities. Its expenditure weights and prices reflect its isolation and lack of economical freight transportation. Further, both expenditure weights and prices for Yakutat housing are significantly higher than in other communities (Hoonah, Haines, Skagway) in Yakutat's original election district. They begin to resemble housing data from more northern communities. Yakutat food prices are significantly higher than those in any other Southeast community, the differential being 1.58 compared to the next highest in Hoonah and Angoon at 1.25.

Yakutat's household cost of living differential is calculated at 1.20.

**Prince William Sound:** Cordova, Valdez, Chugach and Copper River are in the same geographic area but each represents a different type of district and their household cost of living differentials reflect those differences. Valdez, with a stable oil-based economy and on the main Alaska road system, shows a typical urban pattern of household expenditure weights and prices. Housing is weighted more in Valdez than in the isolated Prince William Sound communities and Valdez housing costs are slightly less than in Anchorage. Food in Valdez is higher than in Anchorage but not as high as in Cordova or the Copper River district (which uses Glennallen prices).

No household or price surveys were conducted in the Chugach district in the 1985 study so proxies were taken from the Copper River district for both household expenditure weights and retail prices. Neither the Copper River nor Cordova proxies were completely satisfactory for Chugach and the fact that Chugach's central office is located in Anchorage complicates the selection of a similar district's data. The Copper River district, like the Chugach district, is a multi-site district of small schools. Primarily for this reason Copper River was considered the closest similar district.

An upward price adjustment was made to the medical category in the Copper River district to better reflect typical prices of nearby districts. Cordova's clothing price data were adjusted downward to 1.15 because the original data base included prices outside the high limits of the original districts. Since Cordova's other retail prices were moderately but not excessively higher than those in Valdez it was judged the original data did not accurately reflect Cordova's overall price differentials.

Cordova's differential was significantly different from Valdez's for several reasons. With the exception of housing costs where the two communities were essentially the same, Cordova's prices were higher in all six other household expenditure categories. Also, Cordova's household weights were more typical of isolated coastal fishing communities than more urban communities with stable economies. As a result, significantly more weight falls on food which is more expensive in Cordova. Finally, access to Anchorage via highway has the effect of modifying retail costs in Valdez, as it does in all communities within driving range of Anchorage.

**Anchorage Urban Economic Influence Area:** The Anchorage, Matanuska-Susitna Borough (MatSu) and Kenai Peninsula Borough districts encompass the majority of Alaska's population and are economically integrated to a significant degree. They are connected by both highway and everyday commercial activity. Further, these areas are subject to about the same climate conditions (a little colder in MatSu) and many of the same economic influences.

While they do not resemble one another physically or in population terms their respective household costs of living are essentially the same. As in most other districts in the state when compared to Anchorage, MatSu and Kenai Peninsula housing is less expensive on a per square foot basis (22-24% less expensive). However, this is balanced out by slightly to moderately higher retail costs in most other expenditure categories. Food costs are the same in MatSu and Anchorage (Carr's, for example, has the same pricing policy in MatSu, Anchorage, Kenai/Soldotna and Fairbanks). But food prices are slightly higher on the Kenai due to the smaller, more expensive stores in several smaller communities. Costs of transportation and clothing - the next most important expenditure categories - are moderately higher than Anchorage in both MatSu and the Kenai Peninsula.

The household expenditure weights on the Kenai Peninsula resemble those of moderate sized coastal communities which normally have smaller weights for housing and larger ones for food when compared to Anchorage. This is logical since most of the population of the Kenai is distributed among several small to medium sized urban areas. MatSu, on the other hand, reflects the suburban lifestyle prevalent there with housing expenditure weights equal to

those in Anchorage which are the state's highest among urban areas. Anchorage and MatSu households spend 8% more of their total budget on housing than do residents of the Kenai Peninsula.

It should be recognized that the Kenai Peninsula area has some locations where retail prices are more than slightly higher than Anchorage's. However, the populations of these small communities, when weighted into the total Peninsula population, do not have much influence on the final calculations for the Kenai Peninsula Borough. In short, it costs about the same to live on the Kenai Peninsula (1.01 differential) as it does to live in Anchorage (1.00).

In the MatSu Borough, which benefits from lower housing costs as well as virtually the same retail prices as Anchorage, the cost of living is actually lower (0.95) than in Anchorage. However, as in the case of Wrangell in Southeast Alaska (0.97) the study team agrees with the State arbitrator's decision in 1985 and recommends that a 1.00 differential be assigned these two areas. It should not be implied that any cost of living research is accurate to within a point or two of the mathematical results of these complex calculations. The true differentials in these two areas of exception might well be closer to 1.00. Therefore, if there is some risk that residents in these areas be penalized, a 1.00 level is suggested.

Further, the reason the MatSu housing is less is not so much the lower cost of housing but the size of the housing. A separate analysis of the data showed that larger housing in the Anchorage-MatSu economic area tends to be less expensive per square foot and houses in MatSu are larger than those in Anchorage. This likely accounts for the difference rather than any true cost advantage in MatSu. Since Anchorage and MatSu are essentially the same economic community, it would not be reasonable to set a separate differential for a part of a single economic area. In the case of Wrangell, the closest most similar districts (Petersburg and Ketchikan) have differentials of 1.00 or more and there is no obvious reason for the Wrangell differential to vary significantly from the 1.00 level.

**Kodiak:** The Kodiak Borough district is in a unique geographic and economic situation. It does not experience the transportation and lifestyle hardships of the Alaska Peninsula and Aleutian region discussed below. It is a medium sized coastal urban area with good community infrastructure, some degree of retail competition, strong fishing and military industries and is reasonably well served with freight and passenger transportation systems. However, it does not enjoy road access to a regional center and has a location of some disadvantage. In short, Kodiak is in a similar situation as some medium sized Southeast communities.

Kodiak household expenditure weights are normal for a community of its size with the key housing and food weights well within what would

normally be expected. In fact, Kodiak expenditure patterns almost exactly duplicate the coastal community it most resembles in size and economic composition, Sitka. While Cordova is closer, it is less than one-third the size of Kodiak and this alone eliminates comparison, especially of retail prices.

Kodiak price levels are also typical with retail prices running moderately above Anchorage levels. For example, food prices were 18% higher, transportation, 22% and miscellaneous retail 21%. However, Kodiak housing costs are nearly 20% lower on a square foot basis when compared to Anchorage. This means Kodiak housing is still more expensive than Kenai Peninsula, MatSu and Petersburg (also a fishing port) housing but less expensive than Cordova or Valdez housing.

Overall, with no adjustments to either weights or prices, the household cost of living differential in Kodiak is 1.06.

**Alaska Peninsula and the Aleutians Islands:** With the exception of Kodiak, Alaska Peninsula and Aleutian districts fall into a general group characterized by small scattered communities, expensive access to the regional center (Anchorage), inclement weather and lack of an economical freight transportation system.

This group of districts includes Adak, Aleutian East (a new district combining the present districts of Sand Point, King Cove and most of the Aleutian Region district), Pribilofs, Unalaska, Lake and Peninsula, Southwest Region, Bristol Bay (King Salmon) and Dillingham. In the 1985 study household surveys were conducted in five of these communities - Unalaska, Sand Point, St. Paul (Pribilofs), King Salmon and Dillingham. Household surveys were conducted in five additional communities in this group but the number of surveys was so limited the data is not used. Retail price surveys were conducted in four communities - Unalaska, Sand Point, Naknek and Dillingham.

The Pribilofs, Adak and Aleutian East were assigned Sand Point household expenditure weights and a combination of Unalaska and Sand Point retail prices. This was done because the more limited Sand Point selection prevented pricing some items. Two adjustments to the Sand Point household data were made to modify medical and housing weights falling outside the normal parameters. Once these adjustments were made, Sand Point household expenditure weights closely resembled the typical remote rural pattern common in many districts in Western and Southwestern Alaska. Unique to the Aleutian districts is the expenditure weight (31% of the household budget) for transportation, highest in the state.

Aleutian prices also reflect actual conditions on the Chain with housing being well above Anchorage but food (1.37) and especially transportation (1.49) even

higher. Though the Sand Point sample was small, household weights and prices seem to be a fair reflection of economic and lifestyle conditions in the region. Overall, the Aleutian cost of living differential computes to 1.32, a level between districts in less severe conditions but less than the highest differentials of the most inclement and distant districts.

Unalaska weights and prices were retained for that district with no adjustments made due to the satisfactory sample of both households and retail outlets. Unalaska housing weights were higher and housing costs were lower when compared to smaller communities. The net result is a differential for Unalaska of 1.30. Likewise, Dillingham weights and prices were retained and the resulting differential was also 1.30. Both Dillingham and Unalaska showed somewhat higher expenditures on housing than in the smaller village communities in the region. This also is a common trend, the larger the community, the higher proportion of the budget households spend on housing.

Bristol Bay weights and prices were used as proxies for the Lake and Peninsula and Southwest Region districts following the closest most similar district rule. Bristol Bay household expenditure weights required no adjustment. On the other hand, retail prices from Dillingham were used as proxies in four categories in which Bristol Bay (King Salmon) data were incomplete or not available. Bristol Bay's original prices were retained in the most important categories of food and housing as well as in the miscellaneous category. The household cost of living differential for Bristol Bay was 1.35, also assigned to Lake and Peninsula and to the Southwest Region. Though the Southwest region surrounds Dillingham, its likely expenditure weights would more closely resemble those used for the Lake and Peninsula district, a similar type of district.

Though the Alaska Peninsula and Aleutian Island region covers vast territory and includes a number of different types of communities, it is not surprising that these district differentials fall in a fairly narrow range - 1.30 to 1.35. All communities surveyed suffer the same factors which increase living costs - climate, geography, small community size (therefore lack of selection and of retail competition), time consuming and expensive access to the regional center and lack of economical freight transportation.

It is suggested that the Pribilofs, as the most remote location in the district and without the luxury of Adak's military presence, be granted additional cost of living points. No price data was collected on the Pribilofs but clearly freight and passenger access costs exceed those of Unalaska and Sand Point, the closest most similar communities.

**Yukon and Kuskokwim Delta:** Lower Kuskokwim, Yupiit, Kashunamiut, Lower Yukon and St. Mary's school districts cover the coastal geographic area

from Cape Newenham on the South to the southern shore of Norton Sound on the north. The area lies between the Bristol Bay/Aleutians district group and the arctic districts which start with the Bering Straits district. Kuspuk was considered as part of this group but is perhaps more similar to the inland grouping of districts. Also Kuspuk was included originally in the Yukon/Kuskokwim election district which consists of the inland reaches of these two great river valleys.

The area is characterized by cold but not arctic climate, small subsistence-oriented communities with the exception of Bethel (which is large but still partially dependent on subsistence), long distance and expensive access to the regional center of Anchorage, no road systems, relatively expensive freight transportation systems, generally poor economies with low household income, and lack of retail price competition and selection.

District boundaries in this area are somewhat inconsistent. The largest district, Lower Kuskokwim, includes 26 sites including Bethel but does not include the Yupiit district. Strangely, Yupiit is nearly surrounded by other Lower Kuskokwim locations, is near Bethel and could easily be included in the larger district with perhaps a significant administrative savings. Kashunamiut (150 students) is in a similar situation. Serving a single small community, Chevak, it is located on the line dividing the Lower Kuskokwim and Lower Yukon districts and could easily be included as part of either district. St. Mary's, the largest community on the Yukon delta, has its own district with about 100 students while the Lower Yukon district surrounds it with several other sites with a total of 1,300 students.

Household and retail price surveys were conducted in 1985 in Bethel, Mountain Village and St. Mary's among the communities in this group of districts. Bethel household expenditure weights and retail prices were used for Lower Kuskokwim, Yupiit and Kashunamiut. Bethel expenditure patterns and prices were somewhat different than patterns typical of smaller isolated communities. In particular, housing expenditure weights as well as housing costs were higher than expected.

Living costs in Alaska tend to be highest not in the remote villages but in the village trade centers of Bethel, Kotzebue, Nome and Barrow. In these more urbanized locations, residents tend to buy a greater variety of goods and services locally but do so at very high prices. Even though these village centers are larger they still suffer from the same disadvantages as smaller villages. Those disadvantages include lack of retail price competition, climate, expensive passenger and freight transportation, high utility costs and poor quality housing which is expensive to heat and maintain. Finally, the village centers tend to have more cash economic activity and therefore higher incomes. Households with higher incomes demand and are willing to pay for

more goods and services. In remote rural Alaska larger does not mean less expensive.

The Bethel housing differential is the highest in the state, 1.41, and is confirmed by the higher than average Bethel housing weight. This Bethel housing factor raises the overall cost of living differential for this area to 1.39, above that of the Bristol Bay districts to the south and the inland districts to the northeast. Otherwise, Bethel prices for food and transportation and clothing are similar to those in most other remote districts in the same area of the state.

The original election district of Wade Hampton, which encompasses the Lower Yukon and St. Mary's districts, had the smallest total sample size in the 1985 study. As a result, household weights and retail price data were studied carefully before new differentials were calculated for these districts. The Mountain Village sample was larger than that of St. Mary's so the final weights used were a combination of the Mountain village sample and that of the larger original district. Revisions to the weights included Mountain Village housing weights and prices as these more closely resembled those of the three closest most similar districts. Then original district weights were used for transportation, clothing, recreation and medical. The final weights used fell well within normal ranges for the most remote small districts in the western and northern areas of the state. This includes high weights for food and transportation and a moderate weight for housing expenditures.

Price data used were primarily those of the Mountain Village retail survey which reveals higher-than-Bethel costs of food (1.65) and transportation (1.55) but somewhat lower housing costs. This is a typical pattern when comparing prices of a smaller community with those of a larger one. Only clothing does not have a significant differential because of the heavy use of catalogs in remote areas with little local selection. In summary the differential assigned to the Lower Yukon and St. Mary's districts was 1.38, nearly identical to the Lower Kuskokwim differential of 1.39.

**Interior Remote:** This group falls into two general areas. One area is the lower interior districts of Kuspuk and Iditarod. The other area is the arctic interior districts of Yukon-Koyukuk, Galena, Tanana and Yukon Flats. This entire group shares small remote locations, no road systems, severe winter climates but particularly so in the arctic interior areas, generally poor economies, expensive transportation but closer-than-Bethel access to the Fairbanks and Anchorage regional centers. Lack of retail price competition and lack of selection are also conditions shared by all six districts. There is some variation in access ease and cost with the Yukon Flats and Tanana having relative advantage in time and cost of getting to Fairbanks.

In the lower interior districts, household and retail price surveys were conducted in Aniak and McGrath and data from these surveys were used for computing differentials in the Kuspuk and Iditarod districts, respectively. Household sample sizes for the expenditure weight data were small in each of these districts. Household and retail price surveys were also conducted in Nulato, Tanana, Galena and Fort Yukon though the household sample size in each of these was very limited.

A detailed examination of the household expenditure weights in all six of these districts was conducted. While most weights stayed within the normal range for remote rural household expenditure patterns, the small sample sizes presented more variance than considered reasonable. In addition, the cost of housing, which is taken from the household survey rather than the retail price survey, was also affected by the small samples - a small as four households for Fort Yukon, for example. In total, 43 households in 10 communities were surveyed but no single community had a significant sample size.

For the reasons listed above, the study team felt the most accurate and fair cost of living data would be generated by using the original Yukon-Koyukuk election district household expenditure weights rather than trying to salvage usable weights from each community which might result in wide differences among similar districts in the same geographic area. The original election district household expenditure weights are classic for these small remote interior districts stretching from the middle Kuskokwim River Basin to the Upper Yukon River flats near the arctic circle. The election district weights are classic rural Alaska weights - light on housing, heavy on food, transportation and clothing and light again on recreation/entertainment and medical.

Retail price data, which is not dependent on sample size, showed some variation but in each category they were grouped in fairly close ranges. For example food price differentials ranged only from 1.49 (Galena) to 1.62 (Fort Yukon), high differentials typical of small remote communities. Retail prices in each of the six districts were retained except when prices for individual categories were not available. In such cases the category price from the closest most similar district was used. The exception was housing where the data was affected by extremely small household sample sizes. Instead, the original district housing cost differential (1.05) was assigned to all six districts.

The net result of these adjustments to both household weights and price data is the difference in cost of living among these six districts in due strictly to differences in everyday retail prices. Galena and Iditarod (McGrath prices) had 1.32 overall cost of living differentials, primarily due to slightly lower food prices. Tanana was assigned the proxy of nearby Galena, 1.32. Kuspuk's differential of 1.37 nearly matches the adjacent Lower Kuskokwim number of

1.39. It is higher than Galena due to higher food (1.61) and miscellaneous retail (1.47) prices.

The difference between the Kuspuk and Iditarod differentials is of some concern. These districts are adjacent and very similar geographically, they both have the same freight transportation system and share the lack of price competition because they contain only small communities. Also, only one of the several locations in each district had price survey data. The data from those single locations may not accurately reflect the similarity in costs. The true cost of living in the Iditarod district should more closely resemble that of Kuspuk rather than Galena, a single site location with military influence in the economy.

Finally, both Yukon-Koyukuk (Nulato prices) and Yukon Flats (Fort Yukon prices) scored a 1.39 overall household cost of living differential. These were higher than expected, especially since both have reasonable cost access to Fairbanks and Fairbanks prices.

However, an inspection of the everyday retail prices in these communities shows very high food prices in particular as well as high shelf prices for clothing and miscellaneous items. It is likely the small household surveys in these communities did not reflect the amount of shopping actually done in Fairbanks and through the catalogs. Had this been the case prices of clothing, transportation vehicles and some food would have been lower for these districts. Correctly, Fort Yukon's transportation price differential was lower than other more remote districts but other local prices more than made up for the lower transportation costs. Though Fort Yukon was surveyed in 1985 as part of the Fairbanks-Fort Yukon election district, the Yukon Flats school district most closely resembles the remote communities of the original Yukon-Koyukuk election district. For this reason, that district's household consumption weights were assigned to Fort Yukon.

**Interior Road System:** Nenana, Railbelt, Delta/Greely and Gateway districts are in the general category of districts on the main Alaska road system but with small communities which lack the retail competition and selection advantages of urban Alaska. Their economies are stronger than in most remote districts, they have frequent and reasonably priced freight transportation and some price competition exists both locally and as a result of nearby urban centers. These districts have a far lower cost of living than the remote districts in interior Alaska but do not enjoy the daily retail price advantages of the major urban centers of Fairbanks and Anchorage. On the other hand, reasonably convenient highway access to Fairbanks and Anchorage means residents of these districts pay urban prices for many major goods and services as well as some food purchases.

Clearly, the expenditure patterns of the interior road system districts should resemble something between the urban and remote rural patterns. Compared to the urban pattern, road system districts are likely to be lower in housing and higher in food and transportation. Compared to rural remote districts, road system districts should have expenditure weights higher in housing, lower in food and similar in transportation. On average, housing, food and transportation account for about three-quarters of all household expenditures.

Both household and price surveys were conducted in 1985 in Delta/Fort Greely and Nenana. Household surveys but not price surveys were also conducted in Healy, Cantwell, Clear, Tok and Northway. Readers should recall that the sample selection for the 1985 survey was to insure accurate results on an election district basis, which it did. But it was not designed to provide accurate household expenditure weight data in small communities with very small samples. The Tok, Northway, Healy, etc. household surveys were part of a statistically determined sample which totalled up to 300 per election district and was extremely accurate for those districts. However, taking tiny pieces of the sample and applying those results to small districts such as Alaska Gateway or Railbelt invites statistical variance which may not be truly representative of these small districts.

To overcome the small household sample problem, the largest samples - Delta/Greely and Nenana - are combined and an overall typical road system district pattern of household expenditure weights are calculated. They are in turn applied to all four Alaska road system districts. These new weights definitely take the middle ground between the urban and remote rural household expenditure patterns and appear quite reasonable for these highway districts which are neither truly remote nor urban. Housing and food weights fall in the middle and transportation is within four percentage points of both the rural and urban typical weights.

Price data in the Nenana retail price survey are applied to both the Nenana and Railbelt districts while Delta/Greely price survey data is applied to both the Delta/Greely and Alaska Gateway districts. Prices on the Alaska Highway side of the road system are slightly lower. Reasons likely include highway freight transportation costs and more local retail competition. Major settlements in the Alaska Gateway and Delta/Greely districts have more developed retail sectors than the major communities in the Nenana and Railbelt districts. The most significant price difference is in food which accounts for virtually all the difference in differentials.

In summary, the Nenana cost of living differential is 1.14 and Railbelt receives this Nenana differential as a proxy. Delta/Greely's cost of living differential is 1.10, reflecting the slightly lower retail prices. Alaska gateway is assigned the Delta/Greely differential.

**Fairbanks:** As in virtually all of urban Alaska, the cost of living in Fairbanks, the state's second largest urban area, is essentially the same as in Anchorage, 1.03. This places Fairbanks in the same category as Anchorage, the Kenai Peninsula, MatSu, Juneau, Sitka and Ketchikan. Prior to the development of the TransAlaska Pipeline and the restructuring of the urban Alaska economy which accompanied it, some moderate differences in cost of living existed between Anchorage and other major urban areas. Before the pipeline, Fairbanks generally scored 6 to 9 points higher than Anchorage.

However, with the change in scale of the Fairbanks economy and the intense retail expansion and competition accompanying it, daily retail prices became very similar to but slightly higher than those in Anchorage. Carr's food store chain, for example, charges the same prices throughout the railbelt region. In 1985, housing in Fairbanks on a square foot basis is slightly less expensive than in Anchorage. This is due to lower rent/mortgage payments per square foot, slightly larger housing size due to a greater proportion of single family units and probably lower land costs than in more densely populated Anchorage. These factors more than balance out the higher heating costs caused by climate and fuel oil prices. Fairbanks heating fuel costs are double those of Anchorage but still accounted for a very small proportion of the total household budget. Fairbank's lower-than-Anchorage housing costs are typical of most areas of the state.

Fairbanks' household expenditure pattern is nearly identical to that of Anchorage. Slightly less is spent on housing and slightly more on food but the difference is not statistically significant. As noted, Fairbanks housing costs were lower and food prices slightly higher (1.02) than the Anchorage base district. Prices of transportation, clothing, recreation/entertainment and miscellaneous retail were moderately higher ranging from 1.08 to 1.22. Medical prices were about the same as in Anchorage.

Finally, some rural households and outlets were included in the 1985 Fairbanks/Fort Yukon original election district and may have had an upward bias effect on the Fairbanks numbers. However, the weight of these rural surveys was almost insignificant. A separate run of just Fairbanks surveys confirmed the differential still at 1.03 without the rural bias.

**Arctic:** The North Slope and Northwest Arctic districts are the most arctic of all districts. However, both the Nome and Bering Straits districts are included in this group because they share some similarities with the true arctic districts. Bering Straits could also have been included with the Kuskokwim and Yukon River Delta group but this district actually extends to the arctic circle and surrounds Nome, giving it more ties with the arctic group.

The arctic districts are characterized by extreme climate, very long air distances from the regional centers of Anchorage and Fairbanks, the presence

is much further south and has a somewhat more mild climate than the true arctic districts. In fact, the cost of housing in this district is nearly identical (1.13 vs 1.11) to that in the closest districts to the south, St. Mary's and Lower Yukon.

Food prices are the highest in the state in the arctic districts with Barrow topping the list at 1.71 and Northwest Arctic the lowest at 1.59. These arctic food prices combined the results of both the 1985 differential study and the University of Alaska's Cooperative Extension Service surveys done at the same time. This resulted in more items and outlets being included in the data. Transportation costs were also some of the highest in the state with Barrow's being the highest of the arctic group. As expected, Barrow's overall retail prices were moderately higher than Kotzebue's and Nome's. This confirms the results of past studies which place Barrow at the top of the cost of living scale for Alaska.

Kotzebue and Nome overall cost of living differentials computed out the same, 1.41. Bering Straits' household differential was 1.34, mostly because of lower housing costs, while the North Slope district topped out at 1.53, the state's highest.

Table II-4 shows the last step in computing the district personnel for each district. As explained earlier in this chapter. The weight for each districts' expenditure category in Table II-2 is multiplied by that category's price differential in Table II-3. These seven category products are then summed in Table II-4 to arrive at the total Personnel Differential for each district.

of high-cost village service centers (Nome, Kotzebue and Barrow), no road systems, and scattered small communities. The economies of these village trade center communities are fairly strong compared to the smaller communities in these arctic districts. The village economies are typically subsistence dependent with low average household incomes.

Household expenditure weights for the arctic group tend to be high for both housing and food; housing because the climate requires substantial fuel and utility costs and food due to the highest local food prices in the state. In spite of the high cost of transportation to regional centers, transportation expenditure weights are moderate in the arctic. Clearly, food and shelter rather than transportation are the priorities in these districts and over 60% of household spending is on these two categories.

Household expenditure weights and retail prices for Nome and Barrow were used for the Nome and North Slope districts, respectively. Composites of several communities were calculated to provide household and price data for Bering Straits and Northwest Arctic districts. Both household and price surveys were conducted in Unalakleet, Gamble and Shishmaref. The results of these surveys were weighted by the population of those respective communities and the totals are the household expenditure weights and retail prices for the Bering Straits district. Using the same composite technique for Northwest Arctic, household and price survey results from Kotzebue, Selawick and Noorvik were combined and weighted to form the data for that district.

Predictably, the Bering Straits district showed the most rural pattern of household expenditure weights while Nome weights were the most urban in nature with slightly higher weights on housing than on food. Northwest Arctic and North Slope weights fell in between these extremes. Actually, the range of expenditure patterns among these four districts was fairly moderate, confirming the methodology used to compute them.

As expected, housing cost differentials for this group are the highest in the state except for the Bethel differential of 1.41. Barrow (1.39), Northwest Arctic (1.34) and Nome (1.36) were very close because they are village trade center communities in similar climate conditions. Uniformly, village trade centers have the highest housing costs in the state. The housing cost exception among the arctic group was the Bering Straits district with a differential of 1.13. This accounts for virtually all of the difference between this district's differential and those of the other arctic districts. Two reasons explain the lower Bering Straits housing differential. Throughout the state, housing costs are lower in village areas than in village trade centers. There is less demand for housing and less ability to pay for it in smaller communities. Also, housing stock is generally of lower quality, something which can't be measured in cost of living research. Finally, most of the Bering Straits district

Table II-4

## District Personnel (Household Cost of Living) Differential Sums

(Sum of seven categories = district differential)

District	Housing	Food	Transp	Clothing	Rec & Ent	Medical	Misc	Total
<b>Southern Southeast</b>								
Annette Island	0.19	0.39	0.17	0.09	0.04	0.05	0.08	1.01
Craig	0.19	0.39	0.17	0.09	0.04	0.05	0.08	1.01
Klawock	0.19	0.39	0.17	0.09	0.04	0.05	0.08	1.01
Hydaburg	0.19	0.39	0.17	0.09	0.04	0.05	0.08	1.01
Southeast Island	0.19	0.39	0.17	0.09	0.04	0.05	0.08	1.01
<b>Urban Southeast</b>								
Ketchikan	0.29	0.32	0.15	0.10	0.05	0.06	0.05	1.02
Wrangell	0.15	0.33	0.19	0.13	0.03	0.08	0.06	1.00
Petersburg	0.19	0.38	0.16	0.10	0.05	0.07	0.06	1.00
Sitka	0.26	0.33	0.15	0.09	0.05	0.06	0.08	1.02
Juneau	0.33	0.26	0.16	0.09	0.07	0.06	0.07	1.03
<b>Central and Northern Southeast</b>								
Kake	0.13	0.45	0.17	0.13	0.04	0.03	0.10	1.05
Chatham	0.14	0.50	0.15	0.13	0.03	0.02	0.10	1.07
Hoonah	0.08	0.51	0.20	0.10	0.02	0.05	0.07	1.03
Pelican	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
<b>Other Southeast</b>								
Haines	0.18	0.40	0.18	0.09	0.06	0.07	0.04	1.02
Skagway	0.22	0.36	0.20	0.07	0.03	0.08	0.07	1.03
Yakutat	0.27	0.52	0.22	0.06	0.04	0.05	0.05	1.21
<b>Prince William Sound</b>								
Cordova	0.16	0.40	0.29	0.11	0.08	0.09	0.04	1.18
Chugach	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13
Vakdez	0.27	0.27	0.23	0.08	0.06	0.07	0.08	1.06
Copper River	0.37	0.32	0.26	0.03	0.06	0.03	0.06	1.13
<b>Anchorage Urban Influence Area</b>								
Anchorage (Base District)	0.34	0.22	0.17	0.08	0.07	0.06	0.06	1.00
Matanuska-Sustina	0.27	0.27	0.19	0.07	0.04	0.05	0.06	1.00
Kenai Peninsula	0.20	0.29	0.23	0.09	0.05	0.06	0.08	1.01
Kodiak	0.24	0.33	0.23	0.09	0.05	0.05	0.06	1.06

Table II-4 continued

### District Personnel (Household Cost of Living) Differential Sums

(Sum of seven categories = district differential)

District	Housing	Food	Transp	Clothing	Rec & Ent	Medical	Misc	Total
<b>Alaska Peninsula and Aleutian Islands</b>								
Adak	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Pribilofs	0.17	0.42	0.46	0.10	0.03	0.06	0.07	1.32
Aleutian (Region) East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Unalaska	0.32	0.40	0.31	0.07	0.07	0.04	0.08	1.30
Dillingham	0.28	0.41	0.27	0.11	0.06	0.06	0.13	1.30
Bristol Bay	0.24	0.40	0.35	0.07	0.06	0.07	0.15	1.35
Lake and Peninsula	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
Southwest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
<b>Yukon and Kuskokwim Delta</b>								
Lower Kuskokwim	0.35	0.53	0.25	0.12	0.04	0.03	0.07	1.39
Yupik	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39
Kashunamiut	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39
Lower Yukon	0.27	0.54	0.36	0.12	0.04	0.02	0.03	1.38
St. Mary's	0.27	0.54	0.36	0.12	0.04	0.02	0.03	1.38
<b>Interior Remote</b>								
Kuspuk	0.20	0.58	0.29	0.09	0.06	0.04	0.12	1.37
Iditarod	0.20	0.54	0.29	0.09	0.05	0.04	0.10	1.32
Galena	0.20	0.54	0.28	0.10	0.05	0.04	0.11	1.32
Yukon-Koyukuk	0.20	0.57	0.32	0.10	0.05	0.04	0.11	1.39
Yukon Flats	0.20	0.58	0.27	0.10	0.07	0.04	0.12	1.39
Tanana	0.19	0.57	0.31	0.07	0.05	0.04	0.11	1.32
<b>Interior Road System</b>								
Alaska Gateway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Delta/Greely	0.27	0.34	0.26	0.07	0.05	0.06	0.05	1.10
Nenana	0.26	0.41	0.27	0.06	0.05	0.05	0.04	1.14
Railbet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14
Fairbanks	0.29	0.24	0.22	0.09	0.06	0.05	0.07	1.03
<b>Arctic</b>								
North Slope	0.38	0.53	0.32	0.08	0.03	0.04	0.16	1.53
Northwest Arctic	0.42	0.51	0.26	0.06	0.05	0.04	0.07	1.41
Nome	0.49	0.56	0.18	0.06	0.03	0.02	0.06	1.41
Bering Straits	0.27	0.48	0.25	0.10	0.06	0.11	0.07	1.34

Source: Derived from data base of *Alaska Geographic Differential Study*, 1985, by The McDowell Group for the Alaska Department of Administration, Division of Labor Relations.

### **III. Nonpersonnel Differentials**

### **III. Nonpersonnel Differentials**

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#### **Introduction**

All previous school district differentials have been based solely on the differences in household cost of living throughout Alaska. Since the bulk of the typical school district budget is spent on personnel, this makes the household cost of living reasonably relevant as a measure for distributing school funding. From 59% (Aleutian Region) to 88% (Anchorage) of the total school district operating funds are spent on personnel. The use of household differentials to determine school district funding assumes that operating households and school districts should cost about the same in any given district. This is not always an accurate assumption.

In short, the question of nonpersonnel costs has never been addressed in school district differential formulas. The exception was a 1981 study by Homan-McDowell which quantified personnel, media (textbooks, travel, etc.) and facilities operations cost differentials. However, results of this study were not incorporated into the school funding formula. Therefore, comparative costs of utilities, travel, freight, insurance, teaching and janitorial supplies, professional services, equipment and maintenance have never been a part of school district differentials.

This current study, *Alaska School District Profiles and Differential Study*, addresses the nonpersonnel cost side of school operations to the same extent as household costs have been addressed in other school district differential studies. By the study team doing so, the Alaska Legislature and other decision makers now have a credible information base for total school cost differential decisions. Using virtually the same methodology for school nonpersonnel costs as is used in household cost of living research, the study team calculated the differences in cost of operating school districts in 53 areas of Alaska. As a result, cost differential data now exists for the 12% (Anchorage) to 41% (Aleutian Region) of each district's budget which is spent on nonpersonnel items.

The nonpersonnel differential portion of the study was conducted in five phases, all following standard cost of living methodology:

1. Selecting Nonpersonnel Market Basket

2. Establishing District Nonpersonnel Expenditure Weights
3. Collecting Price Data
4. Developing Methodologies for Measuring Differentials of Nonpersonnel Market Basket items.
5. Calculating Nonpersonnel Cost Differentials

Table III-1 presents the results of the nonpersonnel differential research and analysis conducted in this study. The methods used in each of the five study phases are explained in detail following Table III-1, below.

Table III-1

### District Nonpersonnel Differentials

(Anchorage District = 1.00)

District	Nonpersonnel Differential
<b>Southern Southeast</b>	
Annette Island	1.23
Craig	1.25
Klawock	1.35
Hydaburg	1.27
Southeast Island	1.36
<b>Urban Southeast</b>	
Ketchikan	1.00
Wrangell	1.08
Petersburg	1.05
Sitka	1.03
Juneau	0.98
<b>Central and Northern Southeast</b>	
Kake	1.30
Chatham	1.21
Hoonah	1.24
Pelican*	
<b>Other Southeast</b>	
Haines	1.07
Skagway	1.11
Yakutat	1.19
<b>Prince William Sound</b>	
Cordova	1.37
Chugach	1.36
Valdez	1.17
Copper River	1.12
<b>Anchorage Urban Influence Area</b>	
Anchorage (Base District)	1.00
Matanuska-Susitna	1.01
Kenai Peninsula	1.01
<b>Kodiak</b>	1.15
<b>Alaska Peninsula and Aleutian Island</b>	
Adak	1.25
Pribilofs	1.38
Aleutian (Region) East	1.37
Unalaska	1.27
Dillingham	1.24
Bristol Bay	1.31
Lake and Peninsula	1.31
Southwest	1.27

<b>Yukon and Kuskokwim Delta</b>	
Lower Kuskokwim	1.43
Yupit*	
Kashunamiut	1.31
Lower Yukon	1.35
St. Mary's	1.35
<b>Interior Remote</b>	
Kuspuk	1.23
Iditarod	1.22
Galena	1.33
Yukon-Koyukuk	1.18
Yukon Flats	1.32
Tanana*	
<b>Interior Road System</b>	
Alaska Gateway	1.14
Delta/Greely	1.14
Nenana	1.22
Railbelt	1.14
<b>Fairbanks</b>	1.01
<b>Arctic</b>	
North Slope	1.34
Northwest Arctic	1.49
Nome	1.18
Bering Straits	1.53

Source: Based on data from *School District Survey and District Vendor Survey*, conducted as part of *Alaska School District Profiles and Differential Study*.

\*Yupit, Pelican and Tanana districts did not return *School District Survey*. Therefore, no district nonpersonnel expenditure data is available for calculating nonpersonnel differential. Differentials of closest most similar districts assigned.

## Selection of the Nonpersonnel Market Basket

Just as the household market basket consisted of 310 items in seven major expenditure categories (housing, food, transportation, clothing, recreation/entertainment, medical and miscellaneous), a nonpersonnel market basket had to be developed for purpose of cost comparisons.

A nonpersonnel market basket was designed which included eight major expenditure categories and 30 individual items. The eight major nonpersonnel expenditure categories, which include virtually all nonpersonnel expenditures from the School Operating Fund (01 fund), were taken directly from the Department of Education standard account codes for objects of expenditure.

The 30 market basket items were selected to represent subdivisions of the major account codes. A larger group of 38 items was first selected by the study team with input from educational professionals, including officials of the base districts, Anchorage. Next, the market basket was pretested by means of site visits to the central offices of three districts - Juneau (urban), Hoonah (rural single site) and Chatham (an REAA). Tested were ease of retrieving purchasing data from district files and the relevance of each item for

measuring cost differences among districts. After pretesting, a refined market basket was included in the school district surveys. Once the surveys were returned and analyzed and the vendor survey completed, a final nonpersonnel market basket of 30 items was selected. Final selection criteria included common use among districts, quality of data provided by districts, suitability for differential comparisons and available vendor data.

### **Nonpersonnel Differential Market Basket**

#### **Major Category**

#### **Market Basket Item**

#### **Professional and Technical Services (Code 400)**

Inservice Training Professional Services

Legal Services

Audit Services

#### **Communications (410)**

Long Distance Telephone

Local Telephone

Postage

#### **Insurance (415)**

Property Insurance

Liability Insurance

#### **Travel (420)**

Intradistrict Administrative Travel

Outside of District Administrative Travel

#### **Utilities (430)**

Electricity

Heating Fuel

Other Utilities

#### **Other Services (440)**

Equipment Repair and Maintenance Service

#### **Supplies, Materials and Media (450)**

Teaching Supplies

Tablets

Copying Paper

Elementary Workbook

Office Supplies

Legal Pads

Copying Paper

Envelopes

Maintenance and Janitorial Supplies

Paper Towels

Toilet Paper

Floor Compound

Disinfectant

Textbooks

Textbooks

Teacher's Manual

Equipment (510)  
Computer  
VCR  
VCR Camera  
Copier

## **Nonpersonnel District Expenditure Weights**

The nonpersonnel differential must first involve an accurate estimate of the expenditure patterns of each school district. Just as each district had its own unique pattern of household expenditures, each school district has a unique pattern of nonpersonnel expenditures. Some districts must devote a larger than normal share to utilities costs and travel while others tend to spend more on teaching supplies, equipment or professional/technical services. The expenditure pattern is a function of local choice and of necessity dictated by the climate, social values, economic conditions and funding levels.

The unique district expenditure weights allow the reverse pricing concept to be used on the nonpersonnel side as well as on the household side of the district differential. Essentially, reverse pricing is a method of computing differentials which respects the local expenditure pattern but prices it out as if the local district were located in Anchorage. It is a concept which assumes each district pays Anchorage prices for the exact mix of personnel, buildings, goods and services which it currently buys in its local area. Readers should refer to the discussion of reverse pricing in Chapter II. Consistency in methodology is critical to the credibility and results of the study so the reverse pricing concept is used for both personnel and nonpersonnel differentials.

District expenditure weights for FY 1988 were used. Since the study was being done well in advance of FY 1988 audit reports, each district was asked in May 1988 to estimate their spending by budget object code for the nearly completed fiscal year. These estimates were considered to be more accurate than the only other alternative which was District Budget Reports done prior to the fiscal year and which include estimated planned expenditures for FY 1988. The results provided by districts in the survey should closely resemble FY 1988 audits since the fiscal year was nearly complete at the time of the survey.

FY 1988 was selected because it was the most recent available data. It also was the second year following the severe budget cuts of FY 1987. Though a complete set of audit reports was available for FY 1987, atypical expenditure patterns in some districts caused by the cutbacks would not have been a good basis for differential weighting. It was assumed that by FY 1988 expenditure patterns would more closely resemble future patterns than FY 1987 data.

In summary, actual district survey results were used for the expenditure weights. In the small proportion of the 01 fund budget not covered by the

eight major categories, the extra weight was distributed proportionally among the eight categories. This means that the portion of the budget for which there was no differential work done received a differential equal to the average for that district.

In the case of the four districts which did not reply - Pelican, Yupiit, Tanana and King Cove - nonpersonnel as well as personnel expenditure weights of the closest most similar district were assigned.

Table III-2 details the nonpersonnel expenditure weights for each of the eight major categories by district. Each district's weights add to 100%, accounting for all of the nonpersonnel market basket.

Table III-2

### District Nonpersonnel Expenditure Category Weights (% of Nonpersonnel Budget Spent on Each Expenditure Category)

District	Prof & Tech Services	Communit- cations	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equipment
<b>Southern Southeast</b>								
Annette Island	0.15	0.05	0.20	0.14	0.11	0.00	0.27	0.07
Craig	0.27	0.03	0.06	0.13	0.20	0.03	0.25	0.03
Klawock	0.15	0.04	0.12	0.07	0.29	0.04	0.24	0.04
Hydaburg	0.11	0.02	0.23	0.06	0.29	0.01	0.20	0.07
Southeast Island	0.14	0.05	0.12	0.03	0.36	0.03	0.22	0.05
<b>Urban Southeast</b>								
Ketchikan	0.05	0.03	0.12	0.02	0.31	0.09	0.29	0.10
Wrangell	0.18	0.06	0.13	0.06	0.27	0.07	0.21	0.03
Petersburg	0.02	0.02	0.11	0.04	0.29	0.06	0.25	0.20
Sitka	0.10	0.03	0.07	0.17	0.11	0.15	0.19	0.17
Juneau	0.17	0.03	0.05	0.02	0.24	0.07	0.29	0.14
<b>Central and Northern Southeast</b>								
Kake	0.25	0.03	0.12	0.05	0.25	0.11	0.14	0.05
Chatham	0.14	0.03	0.11	0.07	0.27	0.06	0.21	0.10
Hoonah	0.12	0.04	0.03	0.04	0.44	0.07	0.19	0.07
Pelican*	NP	NP	NP	NP	NP	NP	NP	NP
<b>Other Southeast</b>								
Haines	0.14	0.03	0.00	0.02	0.39	0.10	0.26	0.06
Skagway	0.08	0.02	0.09	0.02	0.22	0.23	0.28	0.05
Yakutat	0.13	0.05	0.10	0.07	0.40	0.05	0.19	0.02
<b>Prince William Sound</b>								
Cordova	0.08	0.03	0.05	0.04	0.42	0.10	0.21	0.06
Chugach	0.14	0.04	0.16	0.19	0.19	0.03	0.20	0.04
Valdez	0.04	0.03	0.09	0.02	0.41	0.06	0.35	0.02
Copper River	0.17	0.03	0.15	0.04	0.23	0.04	0.20	0.13
<b>Anchorage Urban Influence Area</b>								
Anchorage (Base District)	0.07	0.04	0.06	0.02	0.29	0.16	0.31	0.04
Matanuska-Sustina	0.05	0.05	0.17	0.02	0.32	0.04	0.31	0.02
Kenai Peninsula	0.02	0.02	0.12	0.02	0.23	0.41	0.15	0.03
<b>Kodiak</b>								
	0.12	0.04	0.00	0.03	0.34	0.04	0.34	0.08

Table III-2 continued

### District Nonpersonnel Expenditure Category Weights

(% of Nonpersonnel Budget Spent on Each Expenditure Category)

District	Prof & Tech Services	Communi- cations	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equipment
<b>Alaska Peninsula and Aleutian Islands</b>								
Adak	0.23	0.02	0.11	0.05	0.17	0.08	0.21	0.13
Pribilofs	0.21	0.02	0.13	0.10	0.21	0.02	0.20	0.10
Aleutian (Region) East	0.12	0.04	0.12	0.18	0.12	0.19	0.13	0.10
Unalaska	0.08	0.03	0.17	0.04	0.32	0.06	0.18	0.12
Dillingham	0.11	0.05	0.12	0.04	0.35	0.04	0.26	0.01
Bristol Bay	0.24	0.02	0.17	0.05	0.24	0.02	0.15	0.10
Lake and Peninsula	0.04	0.02	0.18	0.19	0.17	0.03	0.25	0.11
Southwest	0.10	0.03	0.18	0.14	0.32	0.04	0.17	0.02
<b>Yukon and Kuskokwim Delta</b>								
Lower Kuskokwim	0.04	0.05	0.13	0.09	0.24	0.03	0.34	0.09
Yupik*	NP	NP	NP	NP	NP	NP	NP	NP
Kashunamiut	0.14	0.03	0.20	0.08	0.31	0.05	0.13	0.05
Lower Yukon	0.02	0.02	0.09	0.09	0.32	0.01	0.36	0.08
St. Mary's	0.04	0.04	0.25	0.10	0.39	0.04	0.08	0.06
<b>Interior Remote</b>								
Kuspuk	0.09	0.03	0.13	0.10	0.23	0.04	0.19	0.18
Kittarod	0.10	0.05	0.15	0.09	0.29	0.06	0.23	0.04
Galena	0.12	0.05	0.23	0.06	0.36	0.03	0.13	0.02
Yukon-Koyukuk	0.09	0.04	0.10	0.14	0.23	0.03	0.25	0.11
Yukon Flats	0.12	0.03	0.14	0.07	0.31	0.15	0.15	0.02
Tanana*	NP	NP	NP	NP	NP	NP	NP	NP
<b>Interior Road System</b>								
Alaska Gateway	0.05	0.19	0.06	0.07	0.19	0.07	0.19	0.17
Delta/Grady	0.08	0.04	0.20	0.02	0.28	0.17	0.20	0.00
Nenana	0.12	0.05	0.25	0.06	0.22	0.06	0.22	0.03
Railbelt	0.08	0.03	0.22	0.03	0.17	0.12	0.26	0.08
Fairbanks	0.10	0.03	0.10	0.01	0.25	0.32	0.14	0.04
<b>Arctic</b>								
North Slope	0.13	0.04	0.03	0.09	0.35	0.08	0.24	0.04
Northwest Arctic	0.10	0.03	0.16	0.09	0.37	0.03	0.18	0.05
Nome	0.04	0.02	0.15	0.04	0.56	0.05	0.13	0.01
Bering Straits	0.06	0.04	0.09	0.10	0.32	0.11	0.23	0.05

\*Not provided by district.

## Collection of Price Data

Two methods were used for the collection of comparative price data, a survey of district expenditures and a vendor survey.

School districts were provided a survey which they filled out describing the market basket items they purchased, in what quantities, prices paid for both purchase and shipping, and which vendors they most commonly used. This portion of the district survey was comprehensive and took concerted effort for districts to complete. In total, 51 of the 55 districts in existence in FY 1988 answered the survey, most of them with sound data. In cases where districts answers were incomplete or when they clearly were not using typical item costs, substitute data was used from the vendor survey, the closest most similar district or average costs for district groupings.

In general, school districts throughout the state showed some very similar patterns for many of their major nonpersonnel expenditures. In the services, for example, 35 districts used just four accounting firms for their audits. Also, four legal firms did the legal work for 38 of the 51 reporting districts. Two insurance agencies service 32 districts and two airlines - Alaska and Mark Air - provide interdistrict routes for nearly all districts.

For supplies and equipment a similar pattern emerged. Seven office supply companies are the vendors for 35 districts while just five companies are janitorial supply vendors to 37 districts. Teaching supply vendors are even more concentrated with five firms supplying 40 districts. And finally, Northwest Textbook Depository supplies textbooks and workbooks to all of the reporting districts.

More districts than those shown above are serviced by these dominant vendors. Four districts did not report and several provided incomplete information on their vendors.

The fact that most districts used the same vendors for most categories places much more importance on the vendor survey data as the basis for nonpersonnel prices. This provided an unexpected opportunity for setting standards for nonpersonnel differential items. By identifying these fairly standard vendor use patterns, the study team was able to develop standard costs and shipping patterns for most categories of nonpersonnel goods and services. While some districts use other vendors and pay prices which may vary from the standards, all districts have the choice of purchasing from the vendors used by most districts. When the standards are used as the price differentials, districts which make other choices are neither penalized for efficiency nor rewarded for inefficient purchasing practices.

The survey of school district vendors was done to determine current prices, typical shipping methods, quantity discounts and school district purchasing practices from the vendor's viewpoint. The survey was conducted primarily by telephone and involved vendors answering a series of questions about prices, rates, typical quantities purchased, shipping practices and costs, and travel patterns for professional assignments. Vendors were also asked to provide the study team with catalogs, rate sheets and other material used in assessing school expenditures on each of the 30 market basket items. The survey was conducted by staff economists on the study team.

Results of the vendor survey and the district nonpersonnel cost survey are discussed in the next section. Further, the results play a role in determining the methodology for each of the 30 market basket items.

Table III-3 shows the price differentials for each major category in each district. A detailed explanation of how prices were determined for all 30 items and 8 major categories follows Table III-3.

Table III-3

### District Nonpersonnel Price Differentials

(Anchorage District Prices = 1.00)

District	Prof & Tech Services	Communi- cation	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equipment
<b>Southern Southeast</b>								
Annette Island	1.12	1.29	1.38	1.35	1.83	1.03	0.91	1.00
Craig	1.08	1.14	1.40	1.36	1.85	1.14	0.92	1.01
Klawock	1.08	1.46	1.30	1.41	2.00	1.14	0.91	1.01
Hydaburg	1.07	1.10	1.13	1.38	1.87	1.15	0.81	1.01
Southeast Island	1.07	1.19	1.25	1.86	1.81	1.01	0.94	1.00
<b>Urban Southeast</b>								
Ketchikan	1.00	1.05	1.00	1.31	1.06	1.00	0.92	1.00
Wrangell	1.10	1.22	1.37	1.34	0.96	1.04	0.93	1.00
Petersburg	1.07	1.31	1.37	1.30	1.00	1.06	0.94	1.00
Sitka	1.07	1.16	1.00	1.21	0.96	1.01	0.92	1.01
Juneau	1.00	1.16	1.00	1.00	0.96	1.00	0.93	1.01
<b>Central and Northern Southeast</b>								
Kake	1.09	1.04	1.12	1.19	1.94	1.20	0.93	1.01
Chatham	1.10	1.13	1.35	1.70	1.37	1.15	0.93	1.01
Hoonah	1.09	1.14	1.25	1.30	1.46	1.09	0.91	1.01
Pelican*	NA	NA	NA	NA	NA	NA	NA	NA
<b>Other Southeast</b>								
Haines	1.08	1.15	1.00	1.06	1.12	1.15	0.92	1.01
Skagway	1.08	1.05	1.36	1.21	1.21	1.15	0.93	1.01
Yakutat	1.07	1.41	1.29	1.10	1.28	1.14	1.06	1.02
<b>Prince William Sound</b>								
Cordova	1.10	1.15	1.24	1.14	1.73	1.17	1.05	1.02
Chugach	1.04	1.29	1.32	2.20	1.25	1.08	1.05	1.01
Valdez	1.09	1.08	1.34	1.16	1.23	1.18	1.06	1.01
Copper River	1.06	0.90	1.32	1.12	1.19	1.11	1.05	1.01
<b>Anchorage Urban Influence Area</b>								
Anchorage (Base District)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Matanuska-Susitna	0.99	1.08	1.00	1.01	0.97	1.00	1.06	1.00
Kenai Peninsula	1.01	1.19	1.00	1.03	0.96	1.00	1.06	1.00
Kodiak	1.06	1.43	1.00	2.23	1.17	1.14	1.05	1.02

Table III-3 continued

### District Nonpersonnel Price Differentials

(Anchorage District Prices = 1.00)

District	Prof & Tech Services	Communi- cation	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equipment
<b>Alaska Peninsula and Aleutian Islands</b>								
Adak	1.21	1.46	1.31	1.99	1.17	1.74	1.06	1.04
Pribilofs	1.40	1.56	1.32	2.47	1.28	1.93	1.04	1.04
Aleutian (Region) East	1.20	1.02	1.39	1.68	1.28	1.69	1.06	1.03
Unalaska	1.24	1.89	1.30	2.10	1.18	1.81	1.07	1.04
Dillingham	1.16	1.49	1.31	1.42	1.31	1.35	1.05	1.02
Bristol Bay	1.16	1.31	1.38	1.46	1.64	1.36	1.06	1.02
Lake and Peninsula	1.15	1.53	1.34	1.77	1.34	1.35	1.06	1.02
Southwest	1.16	1.37	1.40	1.19	1.40	1.29	1.05	1.02
<b>Yukon and Kuskokwim Delta</b>								
Lower Kuskokwim	1.14	1.44	1.37	2.31	1.97	1.01	1.05	1.02
Yupit*	NA	NA	NA	NA	NA	NA	NA	NA
Kashunamiut	1.14	1.66	1.19	1.66	1.45	1.50	1.06	1.02
Lower Yukon	1.09	1.59	1.36	2.40	1.47	1.40	1.05	1.02
St. Mary's	1.13	1.60	1.38	1.58	1.38	1.40	1.05	1.02
<b>Interior Remote</b>								
Kuspuk	1.10	1.43	1.40	1.52	1.32	1.33	1.04	1.02
Iditarod	1.11	1.32	1.40	1.36	1.26	1.21	1.04	1.02
Galena	1.10	1.66	1.39	1.47	1.40	1.34	1.07	1.02
Yukon-Koyukuk	1.03	1.21	1.37	1.34	1.25	1.29	1.06	1.02
Yukon Flats	1.09	1.46	1.33	2.08	1.31	1.38	1.08	1.02
Tanana*	NA	NA	NA	NA	NA	NA	NA	NA
<b>Interior Road System</b>								
Alaska Gateway	1.11	1.16	1.32	1.29	1.20	1.11	1.06	1.01
Delta/Greely	1.08	1.34	1.32	1.35	1.06	1.05	1.07	1.01
Nenana	0.97	1.70	1.37	1.38	1.28	1.04	1.07	1.01
Railbelt	1.08	1.00	1.35	1.20	1.12	1.09	1.06	1.01
Fairbanks	0.97	1.11	1.00	1.20	1.00	1.00	1.08	1.00
<b>Arctic</b>								
North Slope	1.21	1.46	1.20	1.93	1.35	1.70	1.08	1.03
Northwest Arctic	1.15	1.46	1.29	1.77	1.85	1.48	1.06	1.02
Nome	1.19	1.30	1.37	1.58	1.09	1.48	1.08	1.03
Bering Straits	1.12	1.38	1.38	2.37	1.85	1.35	1.07	1.03

\*Not available. Based on data provided by districts.

## **Methodology for Expenditure Category Pricing**

### **Professional and Technical Services (Budget Code 400)**

The market basket for professional and technical services consists of legal service fees and expenses, audit fees and expenses and inservice training contract services. This major nonpersonnel budget category accounts for 5% to 20% of most district's nonpersonnel budget.

### **Legal Services**

Hourly rates for lead attorneys were collected from the school district survey and verified by the four major legal firms which account for most school district work throughout the state. Rates for lead attorneys were fairly consistent and the most common rate paid was \$135 per hour, regardless of district. These firms are located in the state's regional centers, especially Anchorage, and their lawyers travel to outlying districts. Interviews with these firms revealed that about 1/3 of all professional time for outlying districts is spent onsite at the district offices and that 2/3 is spent at the urban offices of the legal firm. Interviews further established a typical legal assignment done onsite lasted a full day at the \$135 hourly rate. Travel was priced at the full fare from the firm's office to the location of each district's office and per diem set at \$100. The actual hourly rate paid was used unless it was exceptionally high or low. In those cases the \$135 standard was used.

The method for calculating the cost differential for legal services assigned a constant \$135 per hour to 2/3 of all legal expenditures, meaning all districts paid the same for this portion. For the 1/3 of services performed onsite, the price differential was the cost of an 8-hour day at \$135 (\$1,080) plus air fare and one day's per diem (\$100). Therefore the total legal differential averaged the 2/3 at Anchorage prices and the 1/3 at onsite prices for an overall legal services differential.

If districts had used local legal services exclusively, their differential was 1.00. Legal cost differentials ranged up to 1.33 for the most remote and expensive to reach district, the Pribilofs.

District expenditure weights for legal services varies dramatically. Twenty-one districts spend less than 1% of their nonpersonnel funds for legal services. Thirty-nine districts spend less than 3%. Copper River and Hydaburg at the other extreme each spent 8% on legal services.

### **Audit Services**

Four audit firms were interviewed representing the audits of nearly three-quarters of all districts. In addition, the district survey asked the cost of the most recent annual audit (FY 1987) and the expected cost of the FY 1988 audit report. This audit cost data provided by the districts varied widely depending

on the type and size of district, the caliber of inhouse accounting personnel and on specific circumstances occurring in each district.

Spending on audit services varied from 0.13% (Anchorage) to 8% of the total nonpersonnel FY 1988 budget for a small Southeast Alaska single site district. The majority of districts pay from 1% to 4% of their nonpersonnel budget for audit services.

For the majority of districts, however, audit costs fell into general ranges reflecting district size. But the sizable number of exceptions outside these ranges meant that actual audit costs were not a good differential measure. For example, two small districts similar in size and type had audit costs which differed by over 300%. Therefore, an alternative to actual costs paid was necessary.

Interviews with leading school district audit firms established typical lengths of audit assignments based on the size of the district budget. Then travel to the district office and per diem were added to account for the expense of audit firm personnel in the field. Districts were grouped into four size categories based on budget size. Then standard audit costs for each category were estimated by the firms based on professional time and the average hourly rate for school audits.

#### **Audit Cost Categories for Districts**

District Class	Budget	Professional Time		Base Fee (@ \$60)
		Total	Onsite	
Small	<\$3 m.	140 Hrs	5 Days	≈ 8,400
Medium	\$3-10 m.	200 Hrs	10 Days	12,000
Large	>\$10 m.	300 Hrs	15 Days	18,000
Borough	Negotiated including travel			40,000

These are the amounts districts in each of these size categories could expect to pay for a typical audit. For those districts not using local firms, travel to the district office and per diem for the specific number of onsite work days was added to the base cost. The exception is borough district audits which are customarily negotiated at a fixed fee which includes travel, per diem and other expenses. A typical borough audit runs approximately \$40,000, according to the accounting firms, a figure assigned to all borough districts. Smaller districts are compared only to their own budget size category base price, not to the price of a borough audit in Anchorage.

Again, using these standards districts are neither penalized for efficiency and strong inhouse accounting capability nor rewarded for poor price shopping, internal inefficiencies or unusual one-time-only costs.

Using the reverse pricing technique, the base price for each district was the amount appropriate for its budget size. This was then compared to the same amount plus the travel and per diem for that district. Audit differentials were modest and ranged from 1.00 to 1.22 but most fell into the 1.08 to 1.15 category.

### **Inservice Training Services**

Inservice training contracting practices and fees varied widely throughout the state, according to responses in the district nonpersonnel cost survey. Further, district expenditures on inservice training contractors ranged from nothing for five districts to a high of 10% (Pribilofs) of the FY 1988 nonpersonnel budget. However, some of these districts which paid nothing to contractors still conducted inservice training using inhouse or agency professionals for which the cash cost was nothing. Larger urban districts identified at least one out-of-state vendor as being among their three most commonly used inservice contract vendors. This is used as a base for establishing a cost standard for this budget item.

Due to the variation in daily professional rates - apparently due to local choice - a standard was considered the fairest measure of inservice training cost differentials. The district surveys, while revealing a wide variation in rates paid, did show the rate of \$250 per day was by far the most common for contract inservice training professionals. The surveys also showed that a typical training assignment involved three days of professional time.

The differential is based on the use of an out-of-state expert from a common point (Chicago) to each of the districts including the base districts used in this calculation - Anchorage, Juneau, Fairbanks and Ketchikan. Therefore, the base cost becomes the cost of air fare to each base location (which is approximately the same from Chicago) plus per diem and \$250 per day in professional fees for three days. Total cost for base districts is \$2,060. For other districts, the additional cost of air fare from the closest base location is added. For the more remote districts where additional travel time is significant, one day of per diem (\$100) is added.

Inservice cost differentials varied from 1.00 for large urban districts to the range of 1.20 to 1.42 for the most remote districts in the arctic and Western Alaska. The highest costs are in the Aleutian Chain area.

### **Professional and Technical Services Summary**

Costs of these three items - legal, inservice and audit - were weighted proportionately, based on their respective expenditure weights in each district. The resulting price differential was then applied to each district's total expenditure weight for professional and technical services (code 400) as reported by the district in their survey.

The overall professional and technical services differential varied from slightly less than the base of 1.00 for Fairbanks, Nenana and MatSu to 1.21 for Adak and the North Slope and 1.40 for the Pribilofs. Over half of all professional and technical service differentials were under 1.10.

Total district expenditure weights for the code 400 category, professional and technical services ranged from just 2% for the Kenai Peninsula to 20% to 26% for five small rural districts which acquire virtually all of their professional services work from vendors outside the district. Nearly half of all districts - most of them small - spend between 10% and 20% of their nonpersonnel budgets on professional and technical services. Anchorage the base district spends 7%, Fairbanks, 10%.

#### **Communications (410)**

The market basket for communications consists of postage, long distance and local telephone charges. Overall the communications budget is relatively consistent from district to district. The expenditure weight varies from 2% to 6% for all but one district, Alaska Gateway, which has a satellite communications system. Anchorage, the base district spends a very typical 4% on communications.

The expenditure weights used for each of the items were those provided by the districts in their survey responses. The weight of communications expenditures on other items was distributed proportionately among the three market basket items. In cases where communications weights were missing, those from the closest most similar districts were used.

#### **Long Distance Telephone Charges**

In most Alaska districts, long distance charges are the most significant of the three communications market basket items with weights running from 1% to 3% of the typical nonpersonnel budget. In fact, the most extreme case was just 3.1%. Districts were asked for the most common calls for both intradistrict (in the case of multisites) and out-of-district long distance. Because of the complexity of calculating multisite intradistrict calls and lack of detailed district survey responses on this question, all long distance expenditures were priced at out-of-district rates. Normally, intradistrict calling was a small share of total long distance charges.

Long distance out-of-district calling patterns were very consistent. Most calls went to Juneau and Anchorage with Fairbanks being the third most frequently called instate location. Fairbanks is the regional center for interior and northern Alaska and the site of the University of Alaska main campus. Therefore, the standard district market basket became one call to each of three location - Anchorage, Juneau and Fairbanks. The cost of calling each of these from the district office of each district was priced at daytime weekday rates for a 10-minute call. The average price of these calls became the price differential.

For the three urban locations, the price was the cost of calling the other two and this sum was divided by three. This takes into account the urban advantage of local calling in one of the three locations.

Long distance differentials ranged from 1.00 to 1.98 (Adak) with half of all districts above 1.50.

### **Local Phone Service**

Local phone expenditures were under 2% of the nonpersonnel budget in all but nine districts and no district exceeded 4.2% (MatSu). Anchorage spent 3.2% on local phone service. Half of all districts spent less than 1% on local phone service.

The local phone market basket was difficult to determine because of the variety of systems in use throughout the state. In order to have some basis for cost comparison local phone companies were consulted and a very common system was suggested. A three-trunk rotary roll-over business phone system monthly charge was selected as the basis for local phone cost comparisons. This system is one that might be used in small to medium sized district offices. Then all local phone companies were surveyed for their rates for this system.

No uniformity was apparent and nearly half of the district paid less than Anchorage prices for this system. In fact, if any trend was apparent it was that urban prices for business phone systems were higher. Local phone differentials ranged from 0.60 (Skagway) to 2.27 (Galena, Yukon-Koyukuk and Unalaska).

### **Postage (and postal shipping)**

Postage budgets are small, averaging less than 1% of the nonpersonnel budget with the highest expenditure weight being only 1.2-1.4% (Annette Island, Southeast Island, North Slope). This indicates high use of parcel post in these districts.

Two methods were used to calculate the postage differential - one for multisite and the other for single site districts. For single site districts, sixty percent of all postage was considered stamps and priority mail of less than two pounds in weight. The price differential for this half is 1.00 for all districts since the unit cost is the same.

The remaining forty percent of the postage budget was split 20%-20%. The cost of sending two four pound packages - one via parcel post and the other by priority mail - to Juneau became the price for one 20% share. The cost of shipping the same two packages to parcel post zone 8 became the price for the other 20% share. Postal shipping in excess of two pounds is charged at different rates depending on the distance from the originating point. This

distance from the originating point is expressed in terms of parcel post zones. Each district has its own zones and the higher the zone number the longer the distance.

For multisite districts the methodology was the nearly the same. Since intradistrict postage was a factor, the 60% portion was split into two parts. Thirty percent was allocated for normal out-of-district postage of stamps and parcel post under two pounds. The other 30% was considered intradistrict postage. The rate for this intradistrict portion of the budget was the cost of parcel post and priority mail over two pounds (again the four pound packages). These four pound packages were sent from the district office to zones 2 and 3 within each multisite district. Finally, the remaining 40% was priced exactly as in the single site example. The multisite differential was the weighted average of the three parts - 30% normal, 30% intradistrict over two pounds and 40% out of district over two pounds.

Postage differentials were negligible and ranged from 0.94 to 1.13 with most districts clustered around 0.97-1.03.

#### **Insurance (415)**

District nonpersonnel expenditure weights for insurance varied considerably from 0% for two districts reporting no insurance expenditures (Kodiak and Haines) to a high of 25% of the total nonpersonnel budget for St. Mary's and Nenana. Eight districts, all of them small rural ones, reported spending between 20% and 25% of the nonpersonnel budget on insurance.

Urban district insurance expenditure weights also vary from 6% for Anchorage to 10% for Fairbanks and 17% for Matanuska-Susitna. Some districts - Juneau is an example - have either their property or liability insurance covered by their local government.

Property insurance rates were quoted by the two companies which insure the majority of districts. Essentially, three rates prevail for Alaska school districts - urban, remote sites with good condition buildings and remote sites with poor condition buildings. The urban rate is much lower than the remote rates but the remote rates are only about 10% apart. Districts were divided into the three groups based on the urban - remote criteria and the condition of remote district buildings was taken from the district survey of facilities which rated buildings on a four-point condition scale. Each rate assumed the same deductible (\$100,000).

Then the rates were adjusted to avoid double compensation for facilities costs. The foundation formula already compensates for the inefficiency of small site districts (see discussion in Chapter IV) by having a declining formula the size of funding communities increases. Unless the unit prices of facilities-related

costs are indexed, the foundation formula plus the differential result in mathematically exceptional funding levels for small districts.

The adjustment index is the number of square feet per student. The unit price of insurance is divided by this index to come out with the actual property insurance differential used in this study.

Liability insurance, though included in the expenditure weights of school districts, is given the base differential because liability rates are not sensitive to geographic location.

After adjustment for student density, insurance price differentials range from the base 1.00 for several urban districts to a high of 1.40 for four rural districts - Craig, Kuspuk, Iditarod and Southwest. Twenty-nine other districts showed total insurance differentials of 1.30 to 1.39.

### **Travel (420)**

The travel differential is limited to administrative and professional travel and does not include either student transportation or extra curricular travel. Neither of these categories are funded by the school operating fund (01 fund) under study in this report. Questions concerning extra curricular travel were asked on the district survey and an attempt was made to develop a differential since some 01 funds were used for it in some districts. However, figuring the destination, number of passengers, rates and frequency of each district's basketball team travel quickly became overwhelmingly complicated and the attempt was scrubbed.

Administrative and professional travel consumes from 2% (Skagway and Anchorage) to 19% (Lake and Peninsula and Chugach) of the nonpersonnel budget. However, only ten districts spent more than 10% and nearly half (24) districts spent under 5% on this major nonpersonnel expenditure category.

In their survey responses districts provided the most common destinations and the percentage of their total travel to each point for both intradistrict and out-of-district travel.

### **Out of District Travel**

The out-of-district travel patterns were extremely consistent and it quickly became clear that virtually all districts travel primarily to Anchorage and Juneau. Air fare to Anchorage and to Juneau from the central office of each district was researched and priced. Then a weighted ticket price was computed based on the frequency of trips to the two locations. For example, if a district went to Anchorage three times as often as to Juneau, the two ticket prices were weighted 75% and 25%, respectively. Then a typical school business trip to each of these locations was estimated to consume three days so per diem of \$300 was added to the price of the air ticket to each of these locations. The

weighted air fare for the two locations and the per diem was added together to find the total cost of the out-of-district travel market basket. For Juneau and Anchorage only one air fare and one three-day per diem amount was included. Therefore, the Anchorage base district amount was the value of one trip and all other districts except Juneau were assigned the value of two trips.

### **Intradistrict Travel**

For multisite districts, air fares for the three most common travel routes as identified by the districts on their surveys were priced. In cases where routes were not identified, the three most logical ones were selected. Then mileage on all intradistrict routes was researched and the average cost per round trip mile was computed. This was compared to the average round trip cost per mile (\$0.38) paid by the Anchorage district for intradistrict travel and the differential computed. A number of different rates existed for the Anchorage district depending on the bargaining unit and other factors. The \$0.38 rate was selected as representative of the typical Anchorage intradistrict travel rate.

### **Travel Summary**

The final travel differential considered the price differential of both out-of-district travel and intradistrict and then used the district expenditure weights for the two travel categories.

Overall travel differentials ranged from 1.00 for the base district and Juneau to over 2.00 for Bering Strait, Adak (1.99), Kodiak, Lower Kuskokwim, Yukon Flats and Pribilofs (highest at 2.47).

Intradistrict differentials tend to be more extreme with 11 multisite districts having differentials over 1.90 and two topping 3.00. They are Chugach (3.01) and Chatham (3.00).

### **Utilities (430)**

Utilities are perhaps the most complex and difficult nonpersonnel costs to include in district differential calculations. The same was true of utilities in the case of household costs of living. Merely comparing the price of a gallon of fuel or a kilowatt of electricity does not consider the real variables of differences in building type and quality. It does not consider the cost per student of heating buildings which do not have dense student populations. It also does not consider the difference in burning efficiency of different fuels and heating equipment.

Additional problems affect the pricing of utilities. The unit price of fuels, electricity and water/sewer are often negotiated on a year to year basis. Because of this, utility and fuel costs for any single district can vary significantly from one year to the next, especially in remote locations where utility costs are a larger portion of the nonpersonnel budget. These prices may or may not be related to the going market price in various parts of the state.

Thus, taking the specific price for a district for FY 1988 may not be fair to that district. An analysis of fuel prices shows that some districts have done an excellent negotiating job with suppliers and have significantly lower costs than neighboring districts. Others pay higher prices than nearby districts.

In the districts with the highest electricity prices, the main cost variable is fuel oil for diesel generators. These prices vary from year to year depending on market conditions and business practices of the utility.

Another issue is districts which provide utilities for subsidized staff housing. These costs show up in the nonpersonnel instead of the personnel budget where they might better be placed. This was handled by including district-maintained housing square feet in each district's total building volume. This prevents inflating the utilities cost per square foot in districts which provide housing utilities.

Many districts pay lump sums for water/sewer and solid waste so no unit prices are available for comparison in these cases.

Finally, utilities are the single area in which the school foundation formula itself must be taken into account. The foundation formula is based on instructional units, not on a standard number of students or on the size of the physical plant. In fact, the instructional unit formula is a graduated scale allocating less units per student as the number of students increases in any funding community. Therefore, districts with small communities already receive what amounts to an efficiency differential. Districts which must provide full programs but which have low student density and poor building efficiency are compensated by the foundation formula. In virtually all cases, the foundation formula provides significantly more funding than the differential.

It is simply much less efficient to provide education in an REAA with 10 sites and no school larger than 200 students. Per student, it takes more building space, equipment and personnel of all kinds to do so when compared to the efficiency of the major urban districts. The school foundation formula compensates for that additional cost by allocating money by instructional unit, not by ADM. Therefore, even without a geographic differential, the smaller less efficient districts receive a higher budget allocation per ADM. In addition, these districts usually receive a geographic differential because of the higher unit prices they must pay for personnel and nonpersonnel operations. Mathematically, it is important to adjust the utilities differentials to avoid double remuneration for operating inefficiencies. This is done so by dividing utility costs by square feet per student. (See discussion of foundation formula impacts in Chapter IV.)

The utilities methodology developed for this report considers all of the above issues - unit price problems, fairness in pricing, efficiency differences and the impact of the foundation formula itself.

Utilities expenditure weights range from 11% (Sitka and Annette Island) to 56% (Nome) of the nonpersonnel budget. Sitka has very reasonable local utility rates and a mild climate while Nome has an exceptionally large number of square feet to maintain in a harsh climate. Some coastal districts with marine climates (Yakutat, Hoonah and Cordova) have utilities expenditures in the low 40% range. This high percentage is created by their utility unit costs being high but the costs of other nonpersonnel items being reasonably low. Twenty-one districts spend 30% or more and the Anchorage base district spends 29% of its nonpersonnel budget on utilities.

### **Fuels**

To solve the fairness problem, districts were grouped into five categories depending on the per gallon price paid for heating fuel (oil). Though the Anchorage base district heats with gas almost all other districts use heating oil. The reverse pricing method requires that the actual market basket of another district be priced in the base district. Therefore, if that district buys oil in Nome, for example, the Anchorage price of oil, not gas, is the base price for comparison. The basis for comparison is the average price districts in each group reported paying for fuel oil.

The five groupings were based on the per gallon price of heating oil as reported by the districts. The price categories were \$0.70 and under, \$0.71-\$0.85, \$0.86-\$0.94, \$0.95-\$1.12, and over \$1.12 per gallon. Then the average price within each group was assigned to the districts in that group. In order, the group averages were \$0.69, \$0.74, \$0.92, \$1.07 and \$1.28. The urban base group included Anchorage, Kenai Peninsula, MatSu, Fairbanks Juneau, Sitka and Ketchikan. On average, Alaska's major urban districts paid \$0.69 per gallon for fuel oil during FY 1988.

In multisite districts where different prices were paid at different sites, prices were weighted based on the square feet of buildings at each site.

The next step is to compensate for the foundation formula effect of already paying for inefficiencies in operations. The price per gallon is then divided by the average number of square feet per student for each of the five groups. This reduces the price by approximately the same factor for which the foundation formula compensates for facility inefficiencies. The base group index created by this calculation is then divided into the same index for each of the four other groups. The result is the differential for heating fuel.

Expenditure weights for fuel were taken from the district survey results for FY 1988.

### **Electricity**

The five fuel price groups of districts remain the same for the electrical power groupings. The rationale for retaining the fuel groupings is that fuel prices drive electrical costs in areas of high kilowatt cost where the differential is most important to districts. On the other hand, the source of electrical generating power in the base group with the lowest prices tends not to be fuel oil but rather gas, hydro and coal. The average school district kilowatt hour cost is calculated for each of the five groups. This average is then assigned to each district in their respective group.

Next, the cost per kilowatt is divided by the same adjustment factor as used for heating fuel - square feet per student. This index (\$ per Kilowatt divided by sq.ft. per student) is compared to the index of the base group and the differential calculated.

Kilowatt costs are taken from the district survey results. In multisite districts prices paid at different sites were weighted by square feet of buildings at each site.

### **Other Utilities**

These include water, sewer and solid waste disposal. A slightly different method was used for the other utilities differential due to little unit cost data available for these items. Because of the lack of unit cost, no district groupings were done. Instead, each district's total cost for other utilities was divided by the total square feet of buildings in the district. This number - \$ of other utilities per sq. ft. - was then divided by the standard efficiency factor of square feet per student. The resulting other utilities index for each district was then compared to Anchorage's index and the differential calculated.

### **Utility Summary**

Nonpersonnel budget expenditure weights for each of the three utilities categories were taken from the district survey. The price differentials for each of these was produced by the methods described above. Though districts were assigned group average price differentials for fuel and utilities, each district's unique expenditure pattern was used for expenditure weights. The final result is a weighted total utility price differential.

### **Other Purchased Services (440)**

Equipment repair services for copiers, typewriters and computers are the market basket in this category. Hourly service rates were identified from the district surveys and by surveying repair service vendors. The most common rates were selected and applied to all districts. Rates vary little among districts as the real variable is travel costs.

Copier and typewriter repair services are normally done onsite. The typical repair trip involves a repairperson traveling to a number of sites (3 is assumed for the purposes of the study) on a single trip. This way travel costs are shared among locations and it becomes financially feasible for the more remote districts to have equipment repaired and maintained. Shared travel costs were researched and calculated for each district not using local service vendors. The differential for these services is simply the travel expenses necessary for onsite repairs compared to service without travel.

Computer repair and maintenance were assumed to be at central locations so shipping costs from each district to a major regional center were added to the urban hourly rate for computer servicing.

Expenditure weights for other purchased services have one of the widest ranges among major categories. Ten districts spend less than 3% of their nonpersonnel budget here while 13 spend between 10% and 41%. Kenai Peninsula and Fairbanks spend the highest percentage in 1988, possibly to avoid the higher cost of purchasing new equipment.

Price differentials for equipment repair and maintenance services also vary widely because of the transportation costs to remote districts. Thirty-two districts have differentials below 1.20 while six are above 1.50 topped by the 1.93 paid by the Pribilof district.

#### **Supplies, Materials and Media (450)**

A market basket of twelve items for teaching supplies (3), janitorial supplies (4), office supplies (3) and textbooks (2) was created for this major expenditure category. Teaching supplies in the market basket were the common ruled newsprint tablet, art construction paper and the most common elementary workbook. Janitorial supplies were floor finisher, disinfectant, toilet paper and paper towels. Office supplies were copying paper, legal pads and envelopes. Finally, the textbook basket was a 'class' worth of a common elementary text plus the teachers manual for that text.

Vendors for these items were often the same ones for most districts so districts were assigned the most common vendor. Then the items were priced and shipped from the vendor to each district via the most commonly used transportation mode. The quantities shipped were identical and consisted of a case of each item. The specific shipping weights of these cases were researched. For example, 20 textbooks and the teacher's manual weighs 63 1/4 pounds.

The total costs were then compared to FOB Anchorage prices for the same items in the same quantities from the same vendors, the difference being the differential. Readers should remember that the reverse pricing method measures the market basket purchased in the district and then identifies what

the Anchorage price would be. That is why the same quantity is priced in both the district and in Anchorage. This prevents comparisons of Anchorage district purchasing practices with those of small districts. In reality though, the FOB Anchorage price from the vendors which supply most outlying districts are nearly the same as those secured from Anchorage vendors by the Anchorage district bid process. This is likely due to the common discounts school districts are given by vendors.

Expenditure weights for supplies, materials and media are fairly uniform among districts. Forty-three spend between 15% and 30% of their nonpersonnel budget in this category and over half spend between 20% and 30%. The extremes were 8% (Unalaska) and 36% (Lower Yukon). Anchorage spent 31% in FY 1988.

Price differentials for supplies, materials and media are quite modest and ranged from less than 1.00 for several Southeast districts which benefit from low freight costs to just 1.08 for the most northern remote areas. The reason for the limited differential is that most items in this category are shipped via parcel post. Those rates are very reasonable and do not vary much throughout the state. A second reason is that most districts buy from the same vendors at the same prices.

#### **Equipment (510)**

This market basket consisted of the most commonly purchased model and brand of copier (Ricoh 70-60), projector (Bell & Howell), VCR (Panasonic PV4700) and VCR camera (Panasonic PV400). They were priced and shipped from the most common vendors for each item via the most common type of transportation used in each district. Freight and parcel post rates were researched and applied to each piece of equipment according to its shipping weight. In total, this market basket weighed 844.5 pounds, most of it being the copier.

The total cost was then compared to the same items FOB Anchorage from the same vendors. Again, the costs paid by districts outside of Anchorage are not much different than what Anchorage pays using their inhouse purchasing system which buys as much as possible from Alaska vendors. This is probably because school districts as a group already receive substantial discounts on many new equipment items.

Equipment expenditure weights vary from 1% (Nome) to 20% (Northwest Arctic) of district nonpersonnel budgets. Fifteen districts spend between 10% and 20% but the most common range is the 1% to 5% spent by 23 districts.

Equipment price differentials are nearly nonexistent and range only from 1.00 to 1.04. First, most districts pay the same prices for the same equipment. Then, equipment is very expensive compared to its shipping weight. For example a

\$400 VCR has a shipping weight of just 10 pounds and at parcel post rates to anywhere in Alaska the total cost difference is insignificant.

### **Calculation of District Nonpersonnel Differentials**

Nonpersonnel differentials were calculated using exactly the same procedure used in calculating household cost of living differentials. First, the expenditure weights for the nonpersonnel items in each district are identified from the *School District Survey*, Budget Summary Update section. Each district identified the amount of spending on each of the eight major expenditure categories and on most of the subcategories under each of these eight. Then the percent of the total was calculated for each item. This percentage becomes the expenditure weight for that category. For example, if a district spends 30% of its nonpersonnel budget on utilities, the utility expenditure weight is 30%, and so on for each of the eight major categories. Expenditure weights total to 100% to represent all the nonpersonnel spending for that district. These weights are detailed in Table III-2 in this chapter.

Next, the price differentials for each nonpersonnel budget category as compared to the base district are taken from the research just described above. These price differentials are contained in Table III-3 earlier in this chapter. Then the expenditure weight is multiplied by the price differential and the product becomes that category's contribution to the district differential. For example, a district spending 3% of its nonpersonnel budget on equipment repair and maintenance and paying a repair service price differential of 1.34 receives a contribution of 4.02 ( $3\% \times 1.34$ ) to the total nonpersonnel differential. The sum of the contributions of all eight nonpersonnel expenditure categories is the total district nonpersonnel differential. The total nonpersonnel differentials vary from 1.00 to Anchorage to 1.15 for Kodiak to a high of 1.53 in the Bering Straits district.

Table III-4 shows the products of multiplying weights and prices for each category. The sum of these eight products is the nonpersonnel differential for each district.

Table III-4

**District Nonpersonnel Differential Sums**

(Sum of eight categories = District Differential)

District	Prof & Tech Services	Communication	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equip.	Total Differential
<b>Southern Southeast</b>									
Annette Island	0.17	0.07	0.28	0.19	0.20	0.00	0.25	0.07	1.23
Craig	0.29	0.03	0.09	0.17	0.36	0.04	0.23	0.03	1.25
Klawock	0.16	0.06	0.16	0.10	0.57	0.04	0.22	0.04	1.35
Hydaburg	0.12	0.02	0.26	0.09	0.53	0.01	0.17	0.07	1.27
Southeast Island	0.15	0.06	0.16	0.06	0.65	0.03	0.20	0.05	1.36
<b>Urban Southeast</b>									
Ketchikan	0.05	0.03	0.12	0.03	0.33	0.09	0.26	0.10	1.00
Wrangell	0.19	0.07	0.18	0.08	0.26	0.07	0.19	0.03	1.08
Petersburg	0.02	0.03	0.15	0.06	0.29	0.06	0.23	0.20	1.05
Sitka	0.10	0.03	0.07	0.21	0.11	0.16	0.18	0.17	1.03
Juneau	0.17	0.04	0.05	0.02	0.23	0.07	0.26	0.14	0.98
<b>Central and Northern Southeast</b>									
Kake	0.27	0.04	0.14	0.06	0.49	0.13	0.13	0.05	1.30
Chatham	0.16	0.03	0.15	0.13	0.37	0.07	0.19	0.10	1.21
Hoonah	0.13	0.05	0.04	0.05	0.64	0.08	0.18	0.07	1.24
Pelican*	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Other Southeast</b>									
Haines	0.15	0.04	0.00	0.02	0.44	0.12	0.24	0.06	1.07
Skagway	0.09	0.03	0.13	0.02	0.27	0.26	0.26	0.05	1.11
Yakutat	0.13	0.07	0.14	0.07	0.51	0.05	0.21	0.02	1.19
<b>Prince William Sound</b>									
Cordova	0.09	0.04	0.07	0.04	0.72	0.12	0.22	0.06	1.37
Chugach	0.14	0.05	0.22	0.42	0.24	0.03	0.21	0.04	1.36
Valdez	0.04	0.03	0.12	0.02	0.50	0.07	0.37	0.02	1.17
Copper River	0.18	0.03	0.19	0.04	0.28	0.05	0.22	0.14	1.12
<b>Anchorage Urban Influence Areas</b>									
Anchorage (Base District)	0.07	0.04	0.06	0.02	0.29	0.16	0.31	0.04	1.00
Matanuska-Susitna	0.05	0.06	0.17	0.02	0.31	0.04	0.33	0.02	1.01
Kenai Peninsula	0.02	0.03	0.12	0.02	0.22	0.41	0.15	0.03	1.01
<b>Kodiak</b>	<b>0.13</b>	<b>0.05</b>	<b>0.00</b>	<b>0.08</b>	<b>0.40</b>	<b>0.05</b>	<b>0.35</b>	<b>0.09</b>	<b>1.15</b>

Table III-4 continued

### District Nonpersonnel Differential Sums

(Sum of eight categories = District Differential)

District	Prof & Tech Services	Communication	Insurance	Travel	Utilities	Other Services	Supplies Mat. & Media	Equip.	Total Differential
<b>Alaska Peninsula and Aleutian Islands</b>									
Adak	0.28	0.02	0.15	0.10	0.20	0.14	0.22	0.13	1.25
Pribilofs	0.30	0.04	0.17	0.24	0.27	0.04	0.21	0.11	1.38
Aleutian (Region) East	0.14	0.04	0.16	0.30	0.15	0.33	0.14	0.11	1.37
Unalaska	0.10	0.06	0.22	0.08	0.38	0.11	0.19	0.13	1.27
Dillingham	0.13	0.08	0.16	0.06	0.46	0.05	0.28	0.01	1.24
Bristol Bay	0.27	0.03	0.23	0.07	0.40	0.03	0.16	0.10	1.31
Lake and Peninsula	0.05	0.03	0.24	0.34	0.23	0.04	0.26	0.12	1.31
Southwest	0.12	0.04	0.25	0.16	0.45	0.05	0.18	0.02	1.27
<b>Yukon and Kuakokwim Delta</b>									
Lower Kuskokwim	0.04	0.07	0.18	0.20	0.47	0.03	0.35	0.09	1.43
Yupit*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kashunamiut	0.16	0.05	0.24	0.13	0.45	0.08	0.14	0.05	1.31
Lower Yukon	0.03	0.03	0.13	0.20	0.48	0.01	0.38	0.09	1.35
St. Mary's	0.04	0.06	0.34	0.16	0.53	0.05	0.09	0.07	1.35
<b>Interior Remote</b>									
Kuspuk	0.10	0.05	0.18	0.15	0.31	0.05	0.20	0.19	1.23
Iditarod	0.11	0.06	0.20	0.12	0.37	0.08	0.24	0.04	1.22
Galena	0.14	0.08	0.32	0.09	0.50	0.04	0.14	0.02	1.33
Yukon-Koyukuk	0.09	0.05	0.14	0.19	0.29	0.04	0.26	0.11	1.18
Yukon Flats	0.13	0.05	0.19	0.15	0.41	0.21	0.17	0.02	1.32
Tanana*	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Interior Road System</b>									
Alaska Gateway	0.06	0.22	0.08	0.09	0.23	0.08	0.20	0.17	1.14
Delta/Greely	0.09	0.08	0.27	0.03	0.30	0.18	0.21	0.00	1.14
Nenana	0.12	0.08	0.34	0.08	0.29	0.06	0.23	0.03	1.22
Rainbelt	0.08	0.03	0.30	0.04	0.20	0.13	0.28	0.08	1.14
Fairbanks	0.10	0.03	0.10	0.02	0.25	0.32	0.15	0.04	1.01
<b>Arctic</b>									
North Slope	0.15	0.06	0.04	0.18	0.47	0.14	0.25	0.05	1.34
Northwest Arctic	0.11	0.04	0.20	0.16	0.69	0.04	0.20	0.05	1.49
Nome	0.05	0.03	0.21	0.06	0.61	0.07	0.14	0.01	1.18
Bering Straits	0.07	0.05	0.13	0.23	0.60	0.15	0.25	0.05	1.53

\*Not available. Based on data provided by districts.

## **IV. Analysis of Selected District Statistics**

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## IV. Analysis of Selected District Statistics

(Selected Fiscal, Enrollment, Personnel and Facilities data for FY 1988)

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### Introduction

Though not required as part of the project contract, this chapter is included to provide an analysis of district data taken from the District Statistics pages of Volume II, *District Profiles*. Fiscal, enrollment, personnel and facilities data are presented and analyzed, primarily by using ratios per Average Daily Membership (ADM). These data and others can be found on the next to last page of each district profile in Volume II.

Districts are grouped geographical for ease of reference and comparison. However, the serious reader might find some of the most relevant comparisons by viewing districts of similar enrollment and of similar type - multisite, single site, remote, urban, districts under 200 students, 200-400 students, and so forth.

The source of most data used in this chapter is the *School District Survey* done as part of this study. School districts reported their FY 1988 school foundation fund budget on the survey. From this data, all fiscal comparisons by ADM are generated. ADM and instructional unit data was taken from Alaska Department of Education reports. Personnel (both certificated and classified) data came from the *School District Survey*, Personnel Inventory section and the instructional space information was derived from the Facilities Inventory section of the same survey.

The ADM comparisons are not intended to be a comparative measure of efficiency of operation. Instead, the purpose of these data is to show the significant differences among districts of differing types and sizes as well as striking similarities among similar districts. Some of the data also show the impacts of local choice on budget levels. A second purpose of this chapter is to allow districts to assess their own operations relative to those of similar districts.

## **Budget Analysis per ADM (See Table IV-1)**

### **Total School Foundation Budget per ADM**

Expenditures per ADM are affected by a number of factors - available revenue, local contributions, climate, quality and size of facilities, student concentration/dispersion, effectiveness of salary negotiations, district purchasing policies, administrative structure of the district and other sources of funding.

Per ADM total budget expenditures are lowest in the Anchorage base district at \$4,591 followed next by MatSu (\$4,815) and Sitka (\$5,061). The next largest urban school districts - Kenai Peninsula, Juneau and Ketchikan - all spend under \$5,300. At the other end of the scale is the North Slope district with \$19,477 per ADM. However, only one-third of the North Slope budget is from the state foundation fund and two-thirds from other sources, primarily local contributions. In the case of North Slope the high expenditure level is in part due to local choice.

The Aleutian Region (\$19,202), Yukon Flats (\$16,638) and Lake and Peninsula District (\$16,093) are the only other districts spending over \$15,000 per ADM and they are very small - 105, 346 and 361 ADM, respectively - compared to the 1,252 ADM of the North Slope.

Eleven more districts have ADM expenditures above \$12,000, nearly all of them in the remote areas of Western and Interior Alaska. Chugach, in Prince William Sound, is the exception. One of the smallest districts with an ADM of 107, the Chugach budget per ADM is \$13,355. Clearly, the very small districts are financially inefficient, even in areas with only moderate cost differences. Some of the more obvious candidates for merger with nearby districts - at least from a cost efficiency standpoint - are Hydaburg (109 ADM at \$9,330 per), Chugach (107), St. Mary's (112 ADM at \$14,438 per) and Aleutian Region (105) which will be merged with Sand Point and King Cove in FY 1990. Yupiit and Tanana also appear to be located so that mergers with nearby larger districts would likely result in significant savings. However, neither district submitted surveys so detailed data is not available to confirm what appears to be true based on district size and geography.

### **Personnel Expenditures per ADM**

Personnel expenditures per ADM show more consistency than nonpersonnel expenditures. Major urban districts - Ketchikan, Sitka, Juneau, Anchorage, MatSu, Kenai Peninsula, and Fairbanks - all spend less than \$5,000 per ADM on total personnel costs. Highest of this group is Fairbanks at \$4,859. Anchorage is lowest, \$4,023. An additional 12 districts spend less than \$6,000 per ADM on personnel.

Conversely, North Slope personnel costs of \$15,163 per ADM are 35% higher than those of any other district. Only three other districts - Aleutian Region, Yukon Flats and Lake and Peninsula - spend over \$10,000 per ADM in total personnel costs.

#### **Nonpersonnel Expenditures Per ADM**

This statistic demonstrates the efficiency of larger urban districts compared to remote multisites. The least spent per ADM is, of course, at Anchorage (\$568) but other urban districts are not far off with MatSu (\$664), Ketchikan (\$978), Juneau (\$757), Sitka (\$903) and Fairbanks (\$915) spending under \$1,000 per ADM. Kenai, which is a multisite district with both large and small funding communities spends \$1,020 which is \$105 more than Fairbanks.

Nineteen more districts spend between \$1,000 and \$2,500 per ADM on nonpersonnel costs. These are the smaller urban areas such as Kodiak and Valdez, most of Southeast Alaska and the smaller districts with road access to regional centers.

Those districts with the highest nonpersonnel costs per ADM are of course the remote districts in the West, Interior and North. The Aleutian Region was the leader at nearly \$8,000 per ADM followed by Yukon Flats (\$6,163). Other districts with over \$5,000 per ADM in nonpersonnel costs were Yukon-Koyukuk, St. Mary's and Lake and Peninsula. The Pribilof, Iditarod, North Slope and Bering Straits districts had nonpersonnel costs between \$4,000 and \$5,000 per ADM.

#### **State and Other Funding per ADM**

State foundation funding is highest per ADM in the remote multisite districts. Chugach, Aleutian Region, Lake and Peninsula, Kuspuk, Iditarod and Yukon Flats received between \$10,000 and \$15,000 in foundation funding. Five other remote districts received over \$9,000.

Annette Island had only \$2,151 per ADM in state funding but recovered \$5,168 per ADM from other sources, primarily due to its reservation status under federal law. Anchorage, Juneau, Ketchikan, Fairbanks, Valdez, MatSu, Kenai Peninsula and Adak (military) received \$3,500 or less. Again, these per ADM cost statistics are really a measure of both the foundation formula which grants more funding per student to smaller funding communities and the existing geographic differential.

Three districts have more than half their funding from other sources including local and PL 874 money. North Slope tops the list with over \$13,000 (compared to a relatively moderate \$6,167 from the State), Valdez (\$6,311 from other sources vs. \$3,479 State) and Annette Island. Those districts with the strongest tax base in relation to the population - North Slope and Valdez - are the biggest contributors to their own school systems.

As a group, the remote Western and Interior districts have fairly substantial per ADM income from other sources ranging from \$3,000 to \$6,000.

Districts with the least per ADM income from other sources are small districts but ones which are not at all remote. Skagway (\$379 per ADM), Nenana (\$475), Copper River (\$512), Railbelt (\$577), Petersburg (\$901), Craig (\$885) and Hydaburg (\$883) are the most obvious cases of lean local contributions.

Table IV-1

## District Statistics For School Foundation(01 Fund) FY 1988

Per Average Daily Membership (ADM)

District	Total Budget Per ADM	Personnel \$ per ADM	Nonpersonnel \$ Per ADM	State Funding \$ Per ADM	Other Funding \$ Per ADM
<b>Southern Southeast</b>					
Annette Island	7,319	5,475	1,845	2,151	5,168
Craig	6,784	5,236	1,547	5,898	885
Klawock	7,384	5,985	1,399	5,960	1,423
Hydaburg	9,330	5,690	3,639	8,447	883
Southeast Island	11,739	8,313	3,427	9,154	2,585
<b>Urban Southeast</b>					
Ketchikan	5,176	4,198	978	3,489	1,687
Wrangell	5,889	5,035	854	4,623	1,265
Petersburg	5,530	4,342	1,188	4,612	901
Sitka	5,061	4,159	903	3,803	1,259
Juneau	5,320	4,562	757	3,469	1,850
<b>Central and Northern Southeast</b>					
Kake	9,454	6,351	3,104	6,059	3,395
Chatham	9,211	6,937	2,274	6,674	2,538
Hoonah	6,682	5,440	1,242	5,638	1,045
Pelican*	NP	NP	NP	NP	NP
<b>Other Southeast</b>					
Haines	7,064	5,484	1,580	5,395	1,669
Skagway	6,465	4,868	1,598	6,087	379
Yakutat	8,761	6,856	1,905	6,116	2,655
<b>Prince William Sound</b>					
Cordova	6,999	5,708	1,091	4,928	2,071
Chugach	13,355	9,222	4,134	11,959	1,396
Valdez	9,786	8,137	1,649	3,475	6,311
Copper River	8,316	5,996	2,320	7,804	512
<b>Anchorage Urban Influence Area</b>					
Anchorage (Base District)	4,591	4,023	568	3,149	1,442
Matanuska-Susitna	4,815	4,150	664	3,519	1,296
Kenai Peninsula	5,369	4,349	1,020	3,604	1,765
Kodiak	6,396	5,282	1,109	5,202	1,194

## **Enrollment, Personnel and Facility Analysis (See Table IV-2)**

Table IV-2 shows a variety of comparative measures in terms of enrollment, personnel and facilities. The 1st count ADM for FY 1988 is as of October 1987. Total enrollment correlates very closely with many of the ratio analyses in both Table IV-1 and IV-2. As shown in the fiscal data, small enrollments usually mean high cost per ADM but high revenue as well because of the structure of the foundation formula.

### **ADM per Instructional Unit and the School Foundation Formula**

An analysis of enrollment and instructional units demonstrates the effect of the foundation formula on school funding. The instructional unit is the funding unit worth about \$60,000 before adjustment for the district differential. Given the highest differential currently in the statute (1.46 for Yukon Flats) the maximum value of an instructional unit is about \$88,000.

Then the foundation formula has a declining scale based on the size of each funding community. As a result, a small funding community receives more dollars per ADM than a large funding community. The intent of the graduated foundation formula is to compensate districts for the inefficiencies of lower student density. Obviously, it is more expensive to provide education for a district of 10 communities each with 200 students than a single community with 2,000 students.

Exactly how much more it does cost is complicated by the fact that the foundation formula and the differential attempt to compensate for the same thing - higher cost. While the foundation formula is intended to compensate for higher costs due to lack of efficient density, the differential is intended to compensate for higher costs due to prices, not inefficiency. However, it is nearly impossible to separate these two causes of the same effect - higher costs. Does it cost more to provide education in Lower Kuskokwim because of inefficiency or because of higher prices?

The method selected for separating the efficiency issue from the price issue is called reverse pricing. Reverse pricing is discussed in detail in chapter II, the chapter on the personnel differential. Essentially, this concept calls for placing each district in Anchorage as is, with all its inefficiencies. Then the identical goods and services normally purchased at the home site are purchased at Anchorage. The difference in prices becomes the differential. This method avoids attempting to operate and price every school district operation as if it were a microslice of the Anchorage district, an impossible comparison.

The ADM per instructional unit for FY 1988 measures the combined effect of compensating for both price and inefficiency. The results are revealing in the extreme.

Table V-1 continued

## District Statistics For School Foundation (01 Fund) FY 1988

Per Average Daily Membership (ADM)

District	Total Budget Per ADM	Personnel \$ per ADM	Nonpersonnel \$ Per ADM	State Funding \$ Per ADM	Other Funding \$ Per ADM
<b>Alaska Peninsula and Aleutian Island</b>					
Adak	7,140	4,904	2,237	3,210	3,931
Pribilofs	12,014	7,375	4,639	8,533	3,481
Aleutian (Region) East	19,202	11,269	7,932	15,280	3,921
Unalaska	9,349	6,649	2,700	6,362	2,987
Dillingham	7,838	6,210	1,627	5,920	2,618
Bristol Bay	10,478	6,685	3,793	6,510	3,968
Lake and Peninsula	16,093	10,519	5,574	12,242	3,851
Southwest	13,588	9,684	3,905	9,791	3,798
<b>Yukon and Kuskokwim Delta</b>					
Lower Kuskokwim	12,252	8,656	3,596	9,764	2,488
Yupik*	NP	NP	NP	NP	NP
Kashunamiut	10,989	7,683	3,306	7,980	3,009
Lower Yukon	12,351	8,394	3,957	6,721	5,630
St. Mary's	14,438	9,192	5,247	11,769	2,669
<b>Interior Remote</b>					
Kuspuk	14,780	9,989	4,791	10,528	4,252
Kitarod	13,579	9,305	4,274	10,495	3,085
Galena	12,522	9,222	3,301	6,476	6,047
Yukon-Koyukuk	13,731	8,615	5,116	9,291	3,841
Yukon Flats	16,638	10,475	6,163	13,566	3,071
Tanana*	NP	NP	NP	NP	NP
<b>Interior Road System</b>					
Alaska Gateway	10,432	7,127	3,306	8,456	1,977
Delta/Greely	5,896	4,879	1,017	4,814	1,082
Nenana	8,803	6,617	2,186	8,328	475
Railbelt	9,408	7,012	2,396	8,831	577
Fairbanks	5,774	4,359	915	3,561	2,213
<b>Arctic</b>					
North Slope	19,477	15,163	4,314	6,167	13,310
Northwest Arctic	10,165	7,225	2,940	7,187	2,979
Nome	7,565	5,807	1,758	6,096	1,469
Bering Straits	12,535	8,472	4,063	8,707	3,827

Source: School District Survey, Alaska School District Profiles and Differential Study  
\*Not provided.

The Chugach district has the lowest ADM per instructional unit, 4.0 students per IU. This compares to the Anchorage ADM per IU of 12.4 students. This means the combined effect of the formula and the differential is a factor of 3.10. Since Chugach's FY 1988 geographic differential was only 1.11, the effect of the foundation formula alone gave Chugach an inefficiency cost differential of 2.79 before the geographic differential was applied.

This is not to say it is not three times as expensive per student to provide education in the Chugach district. What it does say is the mathematics of the foundation formula have potential dramatic effects on school funding levels independent of the geographic differential. Some other districts with extreme foundation formula impacts are Lake and Peninsula (ADM per IU of 5.1), Yukon Flats (5.7) Southeast Island (5.8), Southwest (5.9), Hydaburg and Yukon-Koyukuk (both 6.4),

A less extreme example might be the Railbelt district with an ADM per IU of 8.1 students, compared to Anchorage's 12.4. In FY 1988 Railbelt's geographic differential was 1.23. After subtracting for this, the impact of the foundation formula was 1.25.

The foundation formula also works in more urban situations. The Kenai Peninsula district, with most of its students in large urban schools, also includes several smaller sites scattered about the peninsula. The district receives no geographic differential to compensate for prices because prices on the Kenai are about the same as in nearby Anchorage. But the foundation formula provides the district with an efficiency differential of 1.16 because of the small funding communities included in this largely urban district.

In summary, the impact of the foundation formula is usually much greater than the impact of the price differential. Ironically, the one with lesser impact is the subject of this study and is calculated in great detail, the result of nearly eight months of professional work by a team of up to six economists and education experts. The more significant of the two, the foundation formula, is based on a resource cost model utilized by Dr. Nat Cole, an associate in this current study, in the mid-1980's using education professionals throughout Alaska. These professionals defined the items necessary to provide a unit of instruction in all areas of the state and the cost model estimated the necessary expenditures. The foundation compensates for inefficiency due to lower student density.

The final result of this analysis is that this differential study could not ignore the effects of the foundation formula on funding levels. In unaltered form, the results of this study would have calculated the total combined cost difference from both inefficiency and prices. Instead, the results of the *Alaska School District Profiles and Differential Study* were reduced by an efficiency factor (sq. ft. per student) to allow the foundation formula to continue

compensating for inefficiency. This study now limits compensation to differences in prices, its proper role given the effects of the foundation formula.

#### **Personnel Per 100 ADM**

Table IV-2 shows ratios of foundation funded certificated, classified and total personnel per 100 ADM. Again the efficiency of the larger urban district becomes apparent. Nine districts including all the major urban centers have 10 or less total personnel per 100 ADM. Juneau is lowest at 8.9, Anchorage third lowest at 9.3 foundation funded personnel per 100 ADM.

Eight districts have 20 or more total personnel per 100 ADM. They are all remote multisite districts and range up to 30 for the North Slope district which spends nearly \$20,000 per student on personnel. Yukon Flats and Lake and Peninsula have 25. The major difference is not so much urban and remote. The real difference is between single and multiple site districts. Such small location as Hoonah (11.2), Nome (9.2), Dillingham (12.3) have personnel ratios close to the urban 10. But virtually all districts with more than a few sites average 18 or more personnel per 100 ADM.

Just four districts have more classified than certificated personnel per 100 ADM - North Slope (13 certificated vs. 17 classified), Yukon Flats (12 vs. 13), St. Mary's (11 vs. 12) and Lower Kuskokwim (10 vs. 11). In major urban areas, by contrast, the ratio of certificated to classified is typically 2 to 1. Anchorage (6 certificated vs. 3 classified), Juneau (6 vs. 3) and Fairbanks (7 vs. 3) and the Kenai Peninsula (7 vs. 3) are typical of the urban pattern.

This pattern may be a reflection of three factors. Districts with the most severe climates - and therefore high maintenance and operations activity - tend to have larger numbers of classifieds per 100 ADM. These same districts also generally have more building space per student because of lower student density. Classified local employment is also an important issue in districts where the school system is a major employer.

The extremes of certificated personnel per 100 ADM are from 6.2 (Juneau and Anchorage) to the range of 12 to 15 (Yakutat, Chugach, Lake and Peninsula, Kuspuuk, Galena and North Slope).

Extremes of classified are more dramatic. Lowest is Skagway with 2.1 classifieds per 100 ADM followed by Ketchikan and Sitka, both 2.4. Leading classified employers are the North Slope district at 17.1 followed by six districts with 11 to 12 classified personnel per 100 ADM. These are Southeast Island, Lake and Peninsula, Lower Kuskokwim, St. Mary's, Iditarod and Yukon Flats. Clearly, districts with multiple sites must allocate a much more significant portion of their personnel budget for maintenance and janitorial personnel.

### **Instructional Space per ADM**

A measure of the physical plant maintained by districts is the amount of building space used for instruction on a per student basis. Information on the *School District Survey* included the gross square feet of building space for instruction. This allowed a per ADM facility measure to be calculated.

The base district, Anchorage, is the most efficient urban district in terms of instructional space, providing 131 square feet per ADM. Juneau (141), Fairbanks (143) and MatSu (148) also exhibit the efficiencies of high student density. Even small single site districts provide education in the range of 170 to 220 gross square feet per ADM. Nome is an exception among single sites with 338, due to maintaining a former regional school facility.

The multisite districts again show the extra cost of providing education in areas of low student density. Twelve districts provide more than 275 square feet per ADM, most of those being the remote multisite districts. Two of these districts providing the most space appear to do so as a local choice. Valdez provides 303 and North Slope 414 square feet per ADM. Overall, the typical remote multisite districts maintain about twice the instructional space per ADM as the major urban districts.

Table IV-2

## District Enrollment, Personnel And Facilities Statistics FY 1988

District	1st Count ADM	Total Inst. Units	Funding Comm.	Certificated Pers Per 100 ADM	Classified Pers Per 100 ADM	Total Pers Per 100 ADM	Instr Space GSF per ADM
<b>Southern Southeast</b>							
Annette Island	415	40	1	8.7	4.0	12.6	239
Craig	213	23	1	9.4	3.1	12.5	NP
Klawock	170	20	1	11.5	6.5	17.9	168
Hydaburg	109	17	1	10.8	5.9	16.9	154
Southeast Island	465	80	16	11.5	11.1	22.6	112
<b>Urban Southeast</b>							
Ketchikan	2,531	208	1	7.0	2.4	9.4	176
Wrangell	507	46	1	8.1	3.2	11.3	209
Petersburg	630	58	1	7.4	2.8	10.9	165
Sitka	1,617	133	1	6.8	2.4	9.2	171
Juneau	4,493	373	1	6.2	2.7	8.9	142
<b>Central and Northern Southeast</b>							
Kake	180	22	1	11.0	6.1	17.1	264
Chatham	316	50	9	11.3	8.3	12.2	269
Hoonah	240	26	1	7.6	3.6	11.2	296
Pelican*	NP	NP	NP	NP	NP	NP	NP
<b>Other Southeast</b>							
Haines	366	38	2	9.7	3.5	13.1	255
Skagway	142	17	1	10.6	2.1	12.7	261
Yakutat	134	17	1	13.2	7.0	20.1	384
<b>Prince William Sound</b>							
Cordova	429	40	1	8.0	4.1	12.1	208
Chugach	107	21	4	12.2	10.3	22.4	244
Valdez	693	57	1	9.4	6.1	15.5	303
Copper River	536	67	7	9.6	4.6	14.1	222
<b>Anchorage Urban Influence Area</b>							
Anchorage (Base District)	38,734	3,115	3	6.2	3.1	9.3	131
Malanuska-Susitna	8,606	686	7	6.5	3.5	10.0	148
Kenai Peninsula	8,003	744	19	7.1	2.8	9.8	209
Kodiak	2,285	218	8	7.1	4.8	12.0	184

Table IV-2 continued

## District Enrollment, Personnel And Facilities Statistics FY 1988

District	1st Count ADM	Total Inst. Units	Funding Comm.	Certificated Pers Per 100 ADM	Classified Pers Per 100 ADM	Total Pers Per 100 ADM	Instr Space GSF per ADM
<b>Alaska Peninsula and Aleutian Island</b>							
Adak	604	52	1	7.8	3.1	10.9	127
Pribilofs	152	24	2	10.0	6.1	16.1	266
Aleutian (Region) East	105	24	6	11.5	7.9	19.3	361
Unalaska	153	19	1	10.0	3.5	13.5	292
Dillingham	463	43	1	9.3	3.3	12.6	210
Bristol Bay	245	29	2	10.7	5.4	16.1	283
Lake and Peninsula	347	68	14	13.5	11.4	24.8	534
Southwest	480	82	10	13.6	5.9	19.6	242
<b>Yukon and Kuskokwim Delta</b>							
Lower Kuskokwim	2,606	372	22	9.9	11.0	20.9	174
Yupit*	NP	NP	NP	NP	NP	NP	NP
Kashunamiut	169	22	1	10.7	4.7	15.4	118
Lower Yukon	1,282	168	11	10.1	9.2	19.4	239
St. Mary's	112	17	1	11.2	12.4	23.5	395
<b>Interior Remote</b>							
Kuspuk	375	61	8	12.0	7.5	19.5	321
Iditarod	399	64	9	11.1	10.9	22.0	265
Galena	151	19	1	15.4	6.0	21.3	323
Yukon-Koyukuk	545	85	11	10.6	9.3	19.8	215
Yukon Flats	361	63	11	11.8	12.8	24.6	365
Tanana*	NP	NP	NP	NP	NP	NP	NP
<b>Interior Road System</b>							
Alaska Gateway	502	69	7	8.7	6.2	14.9	239
Delta/Greely	930	80	1	6.9	3.1	10.0	146
Nenana	201	24	1	9.2	6.0	15.2	174
Railbelt	364	45	4	9.6	5.0	14.6	284
<b>Fairbanks</b>	<b>13,195</b>	<b>1,057</b>	<b>5</b>	<b>6.8</b>	<b>2.7</b>	<b>9.5</b>	<b>143</b>
<b>Arctic</b>							
North Slope	1,252	137	8	12.8	17.1	30.0	414
Northwest Arctic	1,540	181	NP	9.2	7.5	16.7	NP
Nome	725	63	1	7.4	2.5	9.2	338
Bering Straits	1,259	186	15	10.8	9.5	20.2	200

Source: School District Survey and Alaska Department of Education.

\*Not provided

# **Appendix**

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**Sample School District Profile as contained in  
Volume II District Profiles**



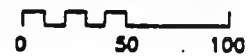
# BERING STRAITS SCHOOLS



Central Office:  
Unalakleet

District Size:  
24,240 sq. mi.

Scale in Miles



## LOCATION:

The district is located in the Bering Straits/Norton Sound subregion of the state. It includes the villages on Seward Peninsula and Norton Sound as well as on St. Lawrence, St. Michael and Little Diomedede Islands. The entire district lies just south of the Arctic Circle and extends west to the U.S./U.S.S.R. boundary.

## BOUNDARIES:

The district contains the area within the Bering Straits Native Corporation boundaries, exclusive of Nome City.

## ELECTION DISTRICT:

House District 23; Senate District L

Regional Corporation: Bering Straits Native Corporation.

## FUNDING COMMUNITIES:

Brevig Mission, Koyuk, Stebbins, Diomedede, Savoonga, Teller, Elm, Shaktolik, Unalakleet, Gambell, Shishmaref, Wales, Golovin, St. Michael, White Mountain

Extremes: The district extends from Shishmaref in the north to Stebbins in the south and from Gambell in the east to Unalakleet in the west. Gambell, 348 air miles from Unalakleet via Nome, is the furthestmost site from the district headquarters.

## GOVERNANCE:

Bering Straits Schools is an REAA within the Unorganized Borough. All of the school site villages are 2nd class cities, organized in the late 1960's and early 1970's.

## LAND STATUS:

The district includes the 2.69 million acre Bering Land Bridge National Monument. Village entitlements under ANCSA total 1.8 million acres. Elim and the villages on St. Lawrence Island have Indian Reservation status, with fee simple title to an additional 1,433,932 acres of land.

## LIFESTYLE/EMPLOYMENT:

The villages of the district have a mixed subsistence/cash economy. Major Industries: Government service (federal, state and local) is the largest industry in the area, accounting for the bulk of paid employment throughout the year. Self-employment opportunities, generally part-time and/or seasonal, are generated by commercial fishing, trapping and Native arts and crafts. The district contains 14 reindeer herds with approximately 20,000 animals which provide a source of employment in some communities. Employers: The school district is the largest single employer in the area. Other significant public employers are the local cities and the Bureau of Land Management (summer firefighting). Private employers include village stores, village native corporations and local transportation companies.

## SUBSISTENCE:

The Bering Straits area is one of the most traditional subsistence areas in the state, with subsistence products providing much of the annual food consumption. For example, Department of Fish and Game data indicate subsistence harvests for St. Lawrence Island communities amounting to around 1,000 pounds per capita annually. Major subsistence harvests for the area are walrus, seal, fish of various species and crab. Polar bear and whale are harvested in some communities.

## AVERAGE INCOME:

(1985 data): The annual average adjusted gross income (AGI) per wage earner for the district is \$14,386, about half the state average of \$28,693. Reported average AGI's for the communities of St. Michael and Unalakleet, with economies based on commercial fishing, are between \$5,000 to \$6,000 higher than other district communities. Unalakleet's average AGI of \$20,665 is the highest in the district while Diomedes's average AGI of \$8,266 is the lowest. By contrast, Nome, which is in the region although not a part of the school district, has an average AGI of \$26,619.

## UNEMPLOYMENT:

Unemployment for the Nome Census Area was 12.3% as of April, 1988, compared to a 9.9% state average. However, the reported figure is derived largely from Nome data; unemployment rates for villages in the census area are undoubtedly much higher.

## POPULATION:

Total: District population is 4,639 (as reported by communities in 1988 for revenue sharing purposes).

Ethnicity: District full-time residents are primarily Alaskan Natives. The Native population ranges from 100% at Diomedes to 87% in Teller (1980 U.S. Census data).

Community Size: The largest community in the school district is Unalakleet with 759 persons reported. Other large villages are Savoonga (487) and Gambell (494). Golovin, with 139 residents, is the smallest school site.

## TRANSPORTATION

**Air:** All communities can be reached by chartered aircraft from either Nome or Unalakleet. Diomede, which has no airport, can be reached by seaplane, weather permitting. Most of the larger communities are serviced by regularly-scheduled mail/passenger service from Nome.

**Water:** All communities are accessible by water. Barge access is generally possible at least part of the year, except at Diomede, where restrictive ice conditions, fog and/or choppy seas often prohibit barge delivery. Few of the area's villages have dock facilities, so freight must be lightered on the beach and transported up to several miles to the village. Skiffs and small boats are used for coastal and river traffic during the summer.

**Road System:** The district's only road is the 72 mile gravel highway from Nome to Teller. Land travel within communities is by snow machine in winter and three-wheeler in summer.

## CLIMATE :

**Climate Type:** The region's climate is transitional, with less temperature variation than continental and less cloudiness, lower precipitation and less humidity than maritime.

**Temperatures:** Winter mean monthly temperatures throughout the region vary slightly between minus 5° and minus 15°. Summer mean monthly temperatures are in the low 60's for the region's mainland communities and in the low 50's for island communities.

**Precipitation:** Maritime influences affect the region's precipitation rates, which range from a high of 18.9" per year in the Norton Sound communities to a low of 7.2" at St. Michael. Snowfall varies from a low of 32" annually at Shishmaref to a high of 98.2" at Gambell.

**Annual Heating Degree Days:** The average heating degree days per year measure for the district is 15,009.55, which compares with a statewide average of 10,896.

## TOPOGRAPHY:

The Bering Straits region encompasses all watersheds draining into Norton Sound and the Bering Sea.

**Rivers:** The Bering Straits region is criss-crossed by rivers, among the most important of which are the Unalakleet, Koyuk, Fish, Kuzitrin, Agiapuk and Serpentine drainages.

**Mountain Ranges:** The district includes the Kigluaik Mountains in the southern Seward Peninsula, with peaks rising to 4,000 feet.

**Other:** The district is generally treeless and relatively flat. Most of the villages are located on wet tundra regions near the coast.

## MAIN SERVICE CENTER

Anchorage

**Distance from Central Office:** Unalakleet has scheduled air service to Anchorage, 395 miles to the southeast.

## REFERENCES:

ADC&RA, Community Profiles, Bering Straits Region

ADR, Federal Income Tax Payer Profile, 1988

ADOL, Alaska Population Overview, 1985 Estimates, 1987

ADOL, Winter/Summer 1987 Employment and Wage Information

ADF&G, Subsistence In Alaska, Arctic, Interior, Southcentral, Southwestern and Western Regional Summaries, 1987

Alaska Climate Center, Technical Note #3: Alaska Climate Summaries, 1986

**DISTRICT STATISTICS—FY88**  
**BERING STRAITS SCHOOL DISTRICT: ADM 1259.40**

**INSTRUCTIONAL UNITS & DIFFERENTIAL SUMMARY**

Instructional Unit	No.	Differential Summary	
K-12	158.09	<b>TOTAL INST. UNITS</b>	<b>185.88</b>
Bilingual	11.42	<b>DISTRICT DIFFERENTIAL</b>	<b>XL39</b>
Special Education	14.04		
Vocation Education	2.33	<b>WEIGHTED INST. UNITS</b>	<b>258.37</b>

**FINANCIAL SUMMARY—SCHOOL OPERATING FUND (01 FUND)**

		% Of Budget	Per ADM
<b>TOTAL BUDGET</b>	<b>\$15,786,241.00</b>	<b>100%</b>	<b>\$12,534.73</b>
<b>Expenditures</b>			
Salary & Benefits	\$10,669,813.00	68%	\$8,472.00
Non Personnel costs	\$5,116,428.00	32%	\$4,063.00
<b>Revenues</b>			
State Foundation	\$10,965,970.00	69%	\$8,707.00
Local, PL874 & Other	\$4,820,271.00	31%	\$3,827.00

**PERSONNEL SUMMARY—SCHOOL OPERATING FUND (01 FUND)**

	No.	Per 100 in ADM
<b>Certified</b>		
Regular Classroom Teachers	98.12	7.79
Total Teachers Salary Schedule	115.68	9.19
Districtwide Administrators	8.29	0.66
Total Administrators	19.97	1.59
<b>Total Certified</b>	<b>135.65</b>	<b>10.77</b>
<b>Classified</b>		
Regular Instruction Aides	19.06	1.51
Total Aides	54.59	4.33
Secretarial	13.76	1.09
Business Services/Data Proc.	4	0.32
Maint/Custodial	41.66	3.31
Transportation/Other	5	0.4
<b>Total Classified</b>	<b>119.01</b>	<b>9.45</b>
<b>TOTAL PERSONNEL</b>	<b>254.66</b>	<b>20.22</b>

**OTHER FUNDS & PERSONNEL (NOT 01)**

<b>Other Funds</b>	<b>Other Personnel (FTE)</b>	
(Food Servs., Activities, etc.) \$2,724,170.00	Certificated	11.74
Per ADM \$2,163.00	Classified	64.37

**FACILITIES SUMMARY**

Total Buildings	62	Instructional(GSF)	251,881
Total Gross Sq. Ft. (GSF)	409,624	Instructional GSF Per ADM	200
Total Bldgs Per Maint FTE	3	Instructional GSF Per Bldg	6,297
Custodial (FTE) Per Inst Bldg	0.44	Instructional GSF Per Custodial FTE	14,263

**FUNDING COMMUNITIES SUMMARY—FACILITIES & ENROLLMENT**

Funding Communities	Grade Levels	Instruction Buildings	Other Bldgs.	Teaching Stations	Enrollment Oct. 1987
Brevig M.	P-12	2	2	11	45
Diomedes	K-12	2	2	12	51
Elim	K-12	4	NP	16	79
Gambell	K-12	3	5	13	125
Golovin	K-12	4	1	7	38
Koyuk	P-12	2	2	13	61
Savoonga	P-12	2	1	15	134
Shaktolik	K-12	1	1	9	51
Shishmaref	P-12	4	1	18	135
St. Michael	P-12	3	1	15	104
Stebbins	P-12	3	2	16	127
Teller	K-12	2	3	11	47
Unalakleet	P-12	3	3	21	197
Whales	K-12	2	1	7	36
White Mt.	K-12	3	2	10	31
<b>Totals</b>		<b>40</b>	<b>27</b>	<b>194</b>	<b>1261</b>

## DISTRICT DIFFERENTIAL SUMMARY

### BERING STRAIT

#### PERSONNEL (COST OF LIVING) DIFFERENTIAL

Household Item	Expenditure Weights	District Differential	Cost-Of-Education Differential
Housing	0.24	1.13	0.27
Food	0.29	1.64	0.48
Transportation	0.18	1.41	0.25
Clothing	0.10	0.96	0.10
Recreation	0.05	1.12	0.06
Medical	0.09	1.17	0.11
Miscellaneous	0.05	1.31	0.07
<b>Total</b>	<b>1.00</b>		<b>1.34</b>

#### NONPERSONNEL (OPERATIONS) DIFFERENTIAL

##### Expense Item

Professional and Tech. Services	0.06	1.12	0.07
Communications	0.04	1.38	0.05
Insurance and Bonding	0.09	1.38	0.13
Travel	0.10	2.37	0.23
Utilities	0.32	1.85	0.60
Other Purchased Services	0.11	1.35	0.15
Supplies, Materials and Media	0.23	1.07	0.25
Equipment	0.05	1.03	0.05
<b>Total</b>	<b>1.00</b>		<b>1.53</b>

#### DISTRICT DIFFERENTIAL SUMMARY

Personnel Differential	0.68	1.34	0.91
Nonpersonnel Differential	0.32	1.53	0.48
<b>Total District Differential</b>	<b>1.00</b>		<b>1.40</b>