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# URBAN IMPACTS OF OIL DEVELOPMENT— THE FAIRBANKS EXPERIENCE

## INTRODUCTION

The discovery of oil on Alaska's North Slope set in motion a series of dramatic social and economic changes throughout the state. Some of these changes, such as distribution of state revenues and inflation, have touched all Alaskans. Virtually every Alaskan community has been affected, as the lure of high wages on the pipeline attracted men and women from even the remotest villages.

Other elements of change can be observed within those communities which have played special roles in energy development. For example, Anchorage continues to rapidly expand as a support, service, and supply center. Tok, Delta, Glennallen, Valdez, and numerous smaller communities have experienced sweeping shifts in population, employment, and housing.

The survey program from which this article originated was carried out as part of the Institute of Social and Economic Research's Man in the Arctic Program (MAP). Funded by the National Science Foundation and the State of Alaska, MAP is directed toward the identification, comparison, and forecasting of the social and economic effects of energy development in Alaska. For a comprehensive description of MAP, see David T. Kresge, "Alaska's Growth to 1990," *Alaska Review of Business and Economic Conditions*, 13:1 (January 1976).

However, the focal point in the construction phase of the trans-Alaska pipeline has been the city of Fairbanks. The largest community along the pipeline route, Fairbanks is located at the terminus of the Alaska Railroad and the Alaska and Parks highways. Because of this strategic location, Fairbanks has served as the central supply and staging center for the construction phase of the pipeline. The community has served as an important source of local manpower as well as the destination of a substantial portion of the job seekers coming from outside the state.

Thus, Fairbank's role as the northernmost pipeline supply terminus and its resulting growth in population have severely impacted the area and its citizens on almost every social and economic level. The resulting changes Fairbanks has undergone makes it a choice site for studying the impact on a town and its population. It was with this in mind that researchers from the University of Alaska's Institute of Social and Economic Research randomly selected and surveyed 415 residents of the Fairbanks area.

The choice of Fairbanks as a study area permitted us to isolate some of the major effects of oil development. Fairbanks is a large town by Alaska standards (in excess of 15,000 housing units) and possesses distinct community groups, defined by such vocations as construction, teaching (high school and college), government, and business. In addition, the

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size and heterogeneity of the Fairbanks population is well suited to the survey approach ultimately selected. This approach involved the careful sampling of a cross section of the Fairbanks community. The results from the sampling were then used to analyze the effects of oil development on the community as a whole as well as on important population subgroups within the community.

There were other reasons for selecting a survey approach. An initial review of available community statistics indicated the need to develop original data. For example, while the Fairbanks Impact Information Center provides excellent information on a community level of change, neither it nor any other agency could tell us how the individual viewed the changes in his community or what he perceived these changes to be. Nor did enough information exist to enable researchers to explore individual and family changes.

Finally, researchers required a method of analyzing community change that would allow them to test hypothesized relationships between an individual's perceptions, evaluations, and expectations and his actual behavior. The clearest test of such hypothesized relationships can only be made when specific data on these areas are available for a particular individual or household. Without such a control it is difficult to determine if a group of people making key choices (for example, buying houses or changing jobs) share a specific attitude or evaluate a particular community change the same way.

The Fairbanks community survey was designed to gather information on various facets of community change before, during, and after pipeline construction. It attempted to establish and define:

- Community characteristics — social, economic, and environmental.
- Social units — individuals, family, population group, community.
- Human attributes — behaviors, perceptions, evaluations, expectations.

The first category of survey questions was aimed at finding out what the community of Fairbanks looked like near the peak of the construction period and how that picture differs from what it was a few years ago. Specifically, the survey asked:

- Who is now living in Fairbanks?
- When did they come (and from where)?
- What is the status of their family?
- What are their ages, skills, education short-term plans, occupational and residence histories?
- What services do they use?
- To what organizations do they belong?

The answers to these and other questions together with available census information and other existing data will enable us to translate general population projections (for example, Fairbanks' population in 1985) into specific numbers of school-age children, families, persons by occupation, and other useful statistics.

The second category of questions attempted to identify and evaluate short-term changes as perceived by the individual survey respondent. These questions concerned the most visible impacts of oil development, including income increases, expanded job opportunities, a decrease in available housing, an increase in traffic levels, and increased competition for recreational resources (such as hunting and fishing). A combination of reports, perceptions, and assessments by those surveyed, as well as key observations made by the interviewers will enable us to trace interrelationships between objective indicators of change (such as changing jobs or buying a new home) and residents' perceptions of change. An important part of this analysis is the exploration of differences between population groups in the distribution of short-term changes, both benefits and costs. These population groups are defined by differences in occupation, age, family composition, length of residence, lifestyle, and work status with respect to pipeline construction.

Our third main category of questions was designed to give information on long-term changes that were set in motion or accelerated by oil

development. While it is unlikely that long-term changes can be predicted for different types of individuals, families, or for the community as a whole, it is possible to identify factors which may have long-term effects. Of key concern are changes in an individual's or a community's attitudes and values resulting from perceived differences between incoming population groups and long-term residents. Thus, the expectations of the Fairbanks population as consumers, demanders of public services, and supporters of specific public policies may also change and will in part determine the pattern of future community development. For example, new population groups coming into Alaska may have different values and outlooks from long-term residents, and this may lead to different policy choices (for example, between increased environmental protection versus further economic development).

The fourth and final category of questions was designed to find out the preferred pattern of living chosen by individuals and the consequences of those choices. For example, many Americans now question the traditional push for ever higher incomes and an ever higher standard of living. Some have broken out of this conventional way of thinking and have established the alternative goal of a closer relationship with the natural environment; they have achieved this at the expense of some traditional comforts of modern living, such as large houses that consume great amounts of electrical or other energy. At the same time, recent nationwide economic shifts have reinforced the concern of a growing proportion of Americans for an income that is both secure and that meets the rising cost of living. People have migrated to Alaska for both reasons: some have come to be close to a wilderness environment and to be self-reliant; others have come to experience immediate income gains and a challenging or exciting job. The construction of the trans-Alaska pipeline has created opportunities for a broad segment of the population to dramatically increase personal incomes. On the other hand, Alaska continues to offer most families the opportunity of minimizing their dependence on a cash income and on discretionary goods (such as extra cars, television, or dishwashers). Both higher incomes and alternative lifestyles are available to a broad segment of the population. As a result, Fairbanks offers researchers an unusual opportunity to study the patterns and consequences of relatively unconstrained living choices. Those who are constrained, such as career government employees locked into long-term salary and pension schedules, form important comparative groups.

## PRELIMINARY FINDINGS

### The Fairbanks North Star Borough

While it will be several months before a comprehensive analysis of the survey results is completed, a sample of initial results has provided some insights into the effects of pipeline impact in Fairbanks on population, households, mobility, and occupations.

**Population.** Fairbanks North Star Borough has grown from a population of 8,166 in 1950, to 30,618 in 1970, to approximately 42,000 in 1976.\* Much of the population growth since 1970 (over 10,000 persons) has obviously occurred since the start of pipeline construction in 1974.

**Household Characteristics.** Households in Fairbanks can be characterized as small, with household members young, white, well-educated, married, and generally well off (Table 1).

**TABLE 1**  
Basic Population Characteristics of Fairbanks

Average number of persons per household	2.9
Average age of Borough population (years)	27
Average years of education completed	13
Average household income before taxes for 1975	\$29,575
Nationality or ethnic origin	Percent
White	90
Alaska Native	4
Other	6
Marital status	100
Married	72
Separated or divorced	11
Widowed	2
Never married	15
	100
Number of respondents - 408	

\*For the purposes of this study, the North Star Borough population excludes on-base military and their dependents, residents of institutions such as hospitals, persons renting rooms on a nightly basis, and persons clearly transient in character.

**Mobility.** The most striking characteristic of Fairbanks residents is their mobility (Table 2). Forty-one percent of them or roughly 17,000 people have moved to Fairbanks since April 1973 and are still here. The figure would no doubt be higher if those persons could be counted who came to Fairbanks after 1973, but left before April 1976. The mobility of the Fairbanks population has increased since 1970. According to the U.S. Census, 33 percent of the population living there in 1970 had lived in Fairbanks for less than 5 years (excluding on-base military and dependents). The comparable 1976 figure is 47 percent. This increase in mobility is reflected in survey responses. For example, some 13 percent of Fairbanks residents plan to move from the area before January 1977, and another 13 percent plan to move away within the next 2 years. Thus, 26 percent of Fairbanks residents, or over 10,000 people, plan to move out of the North Star Borough during the next 2 years. Perhaps reflecting

the transient nature of persons associated with pipeline work, our survey shows that the more recent residents are more than three times as likely to move within 2 years as those who have resided in Fairbanks for more than 10 years. This may also reflect a selection process; those who don't like the area don't stay long.

**Employment and Occupation.** Survey results on employment and occupation for 1976 are shown in Table 3. Comparable statistics for 1970 show that there has been an increase in labor force participation for both males and females. The occupational structure of the North Star Borough has shifted as well. A greater percentage of employed females are in the top two white collar occupational categories (professional-technical and managerial-administration) in 1976 than in 1970.

The relatively high unemployment rate for heads of households was not unexpected, particularly in view of the time of year. During April and May, the rate of immigration for job seekers had probably increased while the hiring for pipeline jobs had not yet reached its seasonal peak.

The average work week for heads of households is clearly high, reflecting in large part the effects of pipeline construction activities. Further evidence of a strong dependence on pipeline construction is the substantial number of persons employed in construction trades (35 percent of all employed persons) and the high proportion of households where the head is currently working or interested in working on the pipeline (30 percent).

An interesting comparison can be made here between heads of households (of which 86 percent are men) and wives working outside the home. Table 3 shows these employed wives to be just as likely to hold professional-technical jobs as heads of households (although not by specific category). The percentage of employed females in Fairbanks holding professional-technical jobs has risen from 19 percent in 1970 to 25 percent in 1976. In contrast, the change from 1950 to 1970 was only from 17 percent to 19 percent.

Despite the social desirability of attributing the primary source of work satisfaction to reasons other than the pay itself, a quarter of the Fairbanks adult population appears to be deriving most of their job satisfaction from the pay they receive. It is interesting to note that the percentage of wives deriving satisfaction primarily from the pay is not significantly different from that of heads of households (25 versus 27 percent). However, wives do not appear to find their jobs as personally rewarding as do the heads of

**TABLE 2**  
**Mobility of the Fairbanks Population**  
**(percent distribution)**

Length of residence in Fairbanks North Star Borough			
Less than 3 years			41
3 to 10 years			26
Over 10 years			33
			100
Number of respondents			
408			
Plans to move from Fairbanks North Star Borough			
Within 6 months			13
Within 2 years			13
Sometime in the future			20
No plans to move			54
			100
Number of respondents			
408			
Plans to move by length of residence			
	Length of Residence		
	Less than 3 years	3 to 10 years	Over 10 years
Within 6 months	21	8	6
Within 2 years	20	10	6
Sometime in the future	21	20	21
No plans to move	38	62	67
	100	100	100
Number of respondents			
	167	104	136

**TABLE 3**  
**Employment and Occupation**  
**(Percent Distribution)**

Employment Status:	Fairbanks 1976				Fairbanks 1970	
	Head	(Male) <sup>a</sup>	Wife	(Female)	Male	Female
Currently employed	83	87	50	52	78	45
Currently unemployed	9	8	6	7	7	4
Not in labor force	8	5	44	41	15	51
	100	100	100	100	100	100
Number of respondents	405	325	296	355	9,634	9,605
Occupation:						
Professional/technical	26	26	24	25	22	19
Manager/administrator	12	12	10	10	14	6
Sales	4	4	4	5	7	7
Clerical	7	3	36	35	4	42
Craftsman	22	26	6	5	27	2
Operatives (except transport)	8	9	2	2	7	3
Transport	8	9	2	1	4	1
Laborer	6	7	2	1	4	1
Service, other	b	4	14	16	b	2
	100	100	100	100	100	100
Number of respondents	386	343	176	218	7476	4381
Hours worked Week Prior to Interview:						
	Head	Wife				
Mean	53.9	40.9				
Median	51.4	42.8				
Pipeline Employment for Head of Household:						
Working now for a pipeline company	21					100
Trying to or interested in working for a pipeline company	9					
Not interested in working for a pipeline company	70					
	100					
Number of respondents	400					
Sources of Work Satisfaction:	Head <sup>b</sup>	Wife				
Pay	27	25				
Friends and associates at work	7	17				
Lifestyle	8	7				
Personal satisfaction at work	54	47				
Other	4	4				
	100	100				
Number of respondents	328	164				

Major reason Wife Works:

Working due to high costs	22
Would be working anyway	78
	100
Number of respondents	166

<sup>a</sup> While head includes both male and female heads of households, 87 percent of them are male.

<sup>b</sup> Indicates less than 1 percent.

households, since 47 percent of the wives versus 54 percent of the heads of households derive their primary satisfaction from the job itself. Still, most wives do appear to be working for reasons other than the high cost of living. Therefore, a leveling off in the high cost of local inflation would not necessarily cause a decline in the high rate of participation by women in the labor force.

**Short-Term Effects of Pipeline Construction Activities**

Only 16 percent of survey respondents felt they had experienced no family changes related to community growth. Still fewer (2 percent) did not perceive the community as a whole to have changed. Overall, more responses concerned the negative aspects of community change. The most important of these perceived community level changes are listed in Table 4.

Changes within the family appear to be more equally mixed (Table 5). In economic terms, the

percentage of families that consider themselves better off approximately equals the percentage that considers themselves worse off.

**Household Income.** The most striking family change is household income. Incomes in the Fairbanks area rose 59 percent from 1973 to 1975 for households which obtained all income for that period while residing in the Fairbanks area (Figure 1). Household incomes for recent arrivals increased over 120 percent, receiving an added boost because of characteristically higher Alaska salaries. By 1976, those arriving in Fairbanks since December 1972 estimate their incomes to be generally higher than the long-term resident group (Figure 1). This is substantially due to the fact that more recent arrivals are more likely to participate in pipeline activities than long-term residents (see Table 6).

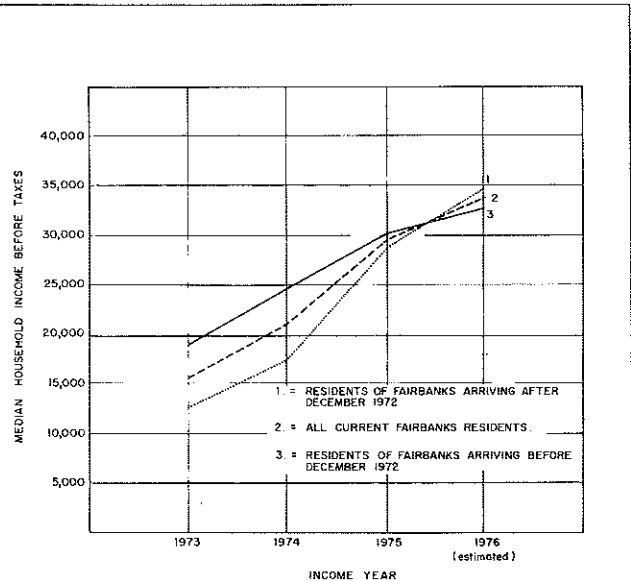
Not only did household incomes increase, but also, the distribution of income broadened over 1973. Figure 2 plots the percentage of people, ranked from lowest income to highest, on the horizontal axis and the percentage of total income they receive on the vertical axis. It indicates, for example, the percentage of all income that goes to the lowest 20 percent of the population. Under conditions of complete equality, the lowest 20 percent of the population would receive 20 percent of the total income. The diagonal line in Figure 2 corresponds to an ideal uniform distribution of income. The curves shown

**TABLE 4**  
**Perceptions of the Most Important Community Changes<sup>a</sup>**

Categories of Community Change	Percentage of total mentions <sup>b</sup>
1. Increase in the cost of living	30
2. Overcrowding (in stores, in lines, on roads)	19
3. Deterioration of the natural environment	12
4. Scarcity of goods and services	9
5. Improved economic conditions	8
6. Increase in crime, hostility, distrust	8
7. Change to more hurried lifestyle, more concern with money	5
8. Physical growth of Fairbanks (highways, buildings)	2
9. Little has changed	2
10. All other changes	5
	100

<sup>a</sup>The question read, "The first part of the interview covers changes in living conditions in the Fairbanks area since the start of pipeline construction. We are interested in those changes that you personally have experienced. First of all, what do you think have been the most important changes?"

<sup>b</sup>Up to three responses were coded for each respondent. The percentages given here reflect the proportion of all responses which fell into each category.



**Figure 1. Average (median) Income for Fairbanks Residents—1973 to 1976**

**TABLE 5**  
**Perceptions of Family Change<sup>a</sup>**

Family Changes	Percentage of Total Mentions <sup>b</sup>
1. No change	16
2. Worse of economically; job has not kept up with inflation; wife now has to work	14
3. Better off economically; more economic opportunity	13
4. Family apart more	5
5. Life busier, less privacy, lower quality of life	5
6. Moving into or out of Fairbanks	5
7. Worsening services	4
8. Type of people moving up are different; growing hostility between groups	4
9. School scheduling problems, overcrowding	3
10. Family together more, talk more	3
11. Moved to new housing	3
12. Housing costs increased	2
13. Personal family changes (divorce, marriage, retirement, childbirth) <sup>c</sup>	9
14. All other changes	14
	100
Number of respondents	376

<sup>a</sup>The questions was, "since construction on the pipeline began three years ago, many Fairbanks families have seen changes in their living situation. Some changes, like children graduating from high school, retirement, and marriage, are probably not affected by changes in the community. We are interested in family changes that have resulted from the tremendous growth of Fairbanks.

"Think about how you and your family were living three years ago. How has life changed for you and your family over the past three years?"

<sup>b</sup>Up to three responses were coded for each respondent. The percentages given here reflect the proportion of all responses which fell into each category.

<sup>c</sup>Personal family changes may not relate to community changes and are only included because they were frequently mentioned.

depict deviations from absolute equality. The closer the curve to the diagonal, the more equal the income distribution. As can be seen, the distribution of income for Fairbanks in 1975 was more equal than in 1973 and more equal than the distribution of income in the U.S. as a whole in 1967.

Income changes have been translated into heavy consumer expenditures. Table 7 illustrates household spending patterns, including 10 percent of the households that purchased homes, 30 percent that purchased cars, and 7 percent that purchased a trip to Hawaii. Plans for major expenditures during the next year appear equally high for homes and land. Other

expenditures, such as household appliances, may in fact be more frequent than suggested in Table 7, as they are less subject to well thought-out purchase plans.

Family economic gains have not been without their costs at both the family and the community level. In general, Fairbanks families are spending more time at work, less time together as a family, and less time in such recreational activities as movies, social visiting, and outdoor sports, including hunting or fishing for food (Table 8). Crowding has been largely responsible for the increased time required for local travel and shopping. A slight increase in time spent on vacations may reflect a redistribution of

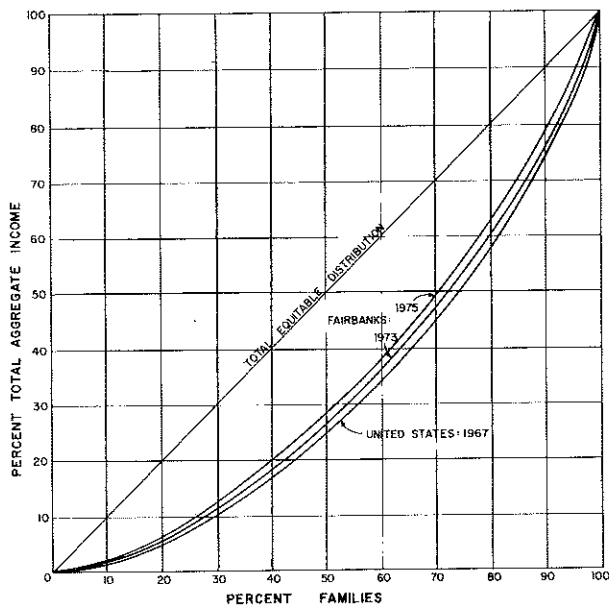


Figure 2. Distribution of Income Average Fairbanks Residents

TABLE 6  
Work Status with Respect to Pipeline Construction  
By Length of Residence  
(Percent Distribution)

	Length of Residence		
	Less than 3 years	3 - 10 years	More than 10 years
Currently working for a pipeline company	30	16	13
Trying or interested in working for a pipeline company	14	11	3
Not interested in working for a pipeline company	56	73	84
	100	100	100
Number of respondents	166	102	132

TABLE 7  
Fairbanks Household Spending Patterns  
(Percentage of Fairbanks households)

Major Purchases or expenses	Pattern of Purchases Over Last 12 Months	Anticipated Pattern of Purchases Over Next 12 Months
House	10	12
Mobile home	4	2
Other housing-related items (service hookups, building materials)	5	9
Car	31	9
Truck	9	3
Recreation Vehicle	4	1
Other transportation vehicles (motorcycles, airplanes, snowmachine)	8	3
Vacation	17	5
Hawaii	7 percent	
Lower 48	13 percent	
Alaska	2 percent	
Foreign	5 percent	
Moving, Commercial, Medical	3	1
Land	10	10
Furniture	7	3
Appliances, Equipment	23	6
Washer, dryer	7 percent	
Stereo, hi-fi, TV	7 percent	
Freezer, refrig., stove, dishwasher	6 percent	
No major purchases	25	48
Number of Respondents	408	408



leisure time into larger blocks and an increase in disposable income.

Despite a widespread increase in incomes, 46 percent of Fairbanks residents feel that they are bearing most of the costs of pipeline impact. Almost the same number (44 percent) feel the situation forces them to partially sacrifice important values (Table 9). Twenty-three percent feel that community changes over the past 3 years have been, in part, responsible for a sacrifice in values.

**Child Care.** Conditions which would be likely to result in child neglect do not appear to be widespread in the Fairbanks community. Table 10 indicates that only 15 percent of families with children under 12 years left their children home alone. Many of these

families had older children as well. While such a sensitive issue might not receive accurate responses, interviewers reported that they believed most responses to be honest.

The need for child care does appear widespread, however. Over a third of families with children use some form of child care, and the vast majority (77 percent) depend on the relatively unregulated services of a private babysitter. Public support for making more public funds available for day care is strong (66 percent), whether allocated to assist parents in paying for day care or to assist people who are providing or want to provide day care.

**Perceptions of Community Change**  
Perceptions of positive and negative family

**TABLE 8**  
Changes in Family use of Time in Fairbanks

Time Spent	Time Spent Now vs. 3 Years Ago			Total Percent	Number Respondents
	More Time	About the Same Time	Less Time		
1. Working (head of household)	52	37	11	100	391
2. Together as family	16	38	46	100	350
3. On outdoor recreation	19	38	43	100	373
4. Visiting with friends	16	48	36	100	384
5. Going out for entertainment	17	34	49	100	373
6. Shopping	28	46	26	100	391
7. Getting from place to place locally	52	33	15	100	399
8. On vacations outside Fairbanks area <sup>a</sup>	30	48	22	100	307
9. Hunting or fishing for food <sup>a</sup>	12	42	46	100	252

Major reasons given for changes in family use of time:

	Percentage Range <sup>b</sup>
Work	20-40
Expense of doing things	9-20
Lack of opportunities	5-10
Crowds	5-58
Need to get out, get away	3-7

<sup>a</sup>A substantial number of respondents (63) said they do not vacation outside Fairbanks and/or do not hunt or fish for food (133).

<sup>b</sup>Respondents were asked why the amount of time they have spent in each category changed over the last 3 years. The reasons listed here appear to be generally important.

**TABLE 9**  
**Perceived Sacrifices in Family Values<sup>a</sup>**

Forty-four percent of all families felt that the boom situation forced them to partially sacrifice important values:

Values sacrificed (percentage of all Fairbanks residents)<sup>b</sup>

	Percent
1. For the family to be physically together	26
2. Emotional security (to be wanted, needed, loved)	6
3. Family is away from home community	5
4. Intellectual and emotional base for children	4
5. Adequate standard of living now	4
6. To be active in the community	3
7. Long-term economic security	2
8. Other values	7

Twenty-three percent of these families felt that changes in Fairbanks over the past 3 years had forced a sacrifice in their values:

Community changes mentioned as responsible

(percentage of all Fairbanks residents)	Percent
1. Job requirements take away from daily life	7
2. High prices affect family life (more family members work, yet enjoy fewer of those activities that cost money)	7
3. Influx of people causes accelerated pace, loss of close contact with neighbors (since neighbors are transient, they plan to move away)	4
4. Changes caused by pipeline boom	4
5. Other reasons	6

<sup>a</sup>The questions read:

1. We've been talking about what you value for your family. Most of the time the situation we find ourselves in forces us to sacrifice one thing to gain another. Do you feel that the situation your family is in forces you to partially sacrifice any important values?
2. Tell me which values you think have been partially sacrificed and why.
3. Have changes in the community of Fairbanks over the past 3 years been at all responsible?
4. How have changes in the Fairbanks community been responsible for sacrifices in family values?

<sup>b</sup>Notice that the percentage breakdowns in each part of this table add up to more than the total percentage of families making these perceived sacrifices. This apparent discrepancy results because some families felt they had made two or more sacrifices.

changes have been mixed. In general, economic benefits have to be weighed against social costs. Perceptions of community change, however, are more uniformly negative. Fifty-six percent of Fairbanks residents felt that overall, Fairbanks has changed for the worse, primarily because of a decline in the quality of social conditions and a rise in the cost of

**TABLE 10**  
**Child Care in Fairbanks**

Families encountering a situation which forced them to leave children home alone in the week prior to the interview:

	Percent
a. Families with children under 18 years who left children home alone	15
b. Families with at least one child under 12 who left children home alone	15
c. Most frequent reasons for leaving a child home alone:	

	Percent
Job, school	32
Transportation of other family member	25
Single activities (e.g. shopping)	29
All other mentions	14
	100

Families with children that used child care facilities during the week prior to interview: 35

Type of child care used:	Percent
Babysitter	77
Day care center	11
Family or relative	11
Other form of child care	1
	100

Hours of child care:	Percent
No child care	65
Under 5 hours	12
5-19 hours	14
20-39 hours	5
40 hours or more	4
	100

living. Respondents were asked to give their detailed perceptions of over thirty community attributes, ranging from the availability of fish and game to such social problems in the neighborhood as alcoholism, child neglect, and drugs. Table 11 lists what respondents perceive to be the ten best and ten worst community attributes for Fairbanks.

Job opportunities are indisputably the major community-wide asset. Medical services receive a relatively high score as well. The respondents' assessment of neighborhood social quality is moderately high, as are their assessments of outdoor recreation and the availability of food and other consumer products. At the lower end of the community assessments, respondents see the high cost of living as a negative element which even surpasses such social costs as long waiting lines in stores and overall community mood. Those sampled also perceived as relatively poor a variety of services, including telephone, home and car repair, and electric power supply.

Table 12 shows those community attributes or characteristics which, according to our respondents, have changed the most from 1973 to 1976. For the

most part, the characteristics receiving the worst assessments were those which had changed the most between 1973 and 1976 (for example, the increase in traffic congestion). Other characteristics, such as

**TABLE 12**  
**Environmental Conditions Seen as Changing Most Since 1973**

Environmental Conditions	Change in Rating Scores*
Traffic congestion	-3.7
Time waiting in lines	-3.6
Variety of wildlife	-2.7
Overall mood of community	-2.6
Cost and quality of housing	-2.5
Cost of living	-2.4
Unspoiled nature	-2.3
Availability of fish and game	-2.2
Seeing people around town you know	-2.2
Vandalism, theft, disorderly conduct	-2.1

\*Scores reflect changes average (mean) scores between 1973 and 1976 on a scale from 1 to 9, where 1 is "worst expect to see" and 9 is "best expect to see."

**TABLE 11**  
**Ten Best and Ten Worst Community Assessments for Fairbanks**

Best Assessments	Percent Responding in Upper Third of Scale <sup>a</sup>	Worst Assessments	Percent Responding in Lower Third of Scale <sup>b</sup>
1. Local job opportunities <sup>c</sup>	64	1. Cost of living	77
2. Privacy in the home	62	2. Quality and cost of housing	74
3. Medical care	56	3. Time spent waiting on lines	71
4. Relations with neighbors	47	4. Telephone	69
5. Natural outdoor recreation	38	5. Traffic	67
6. Food and products available	37	6. Services (such as home and car repair)	62
7. Absence of social problems in neighborhood: Alcoholism, child neglect, drugs	37	7. Electricity	55
8. Absence of vandalism, theft, disorderly conduct in your neighborhood	34	8. Presence of wildlife in the Fairbanks area	50
9. Garbage disposal	33	9. Overall community mood	46
10. Communications with the outside	32	10. Availability of game and fish	39

Number of respondents - 380

<sup>a</sup>Figures indicate the percentage of respondents who believe a given community attribute to be in the upper third of a scale which runs from "best could expect to see" to "worst could expect to see."

<sup>b</sup>Figures indicate the percentage of respondents who assess a given community attribute to be in the lower third of a scale which runs from "best could expect to see" to "worst could expect to see."

<sup>c</sup>Through typographical error, an assessment of job opportunities was omitted. Initial results from a special mailing to respondents provides the basis for this figure.

“unspoiled nature”; “seeing people you know around town”; and “vandalism, theft, and disorderly conduct in your neighborhood,” also changed significantly for the worse.

Respondents were also asked to assess the overall natural, social, governmental, and economic characteristics of the community. Table 13 indicates that they now judge Fairbanks to be about as good in the areas of government services and economy (jobs and cost of living) as it is in the natural and social environments. Looking at the comparable scores for Fairbanks in 1973, it appears that respondents evaluated the Fairbanks community particularly high for its natural and social characteristics. Respondents now appear to feel that these have substantially decreased. However, they perceived only a slight decline in the quality of government and the economy.

This substantial drop in an overall community rating (from 1973 to 1976), however, suggests that respondents consider as critically important a decline in natural and social community attributes. However, respondents were hopeful that somehow an improvement in most community attributes will

appear after the pipeline is finished. But while the respondents foresaw improvements in the social and government sectors between 1976 and 1977, they foresaw little, if any, real gain for natural and economic community attributes.

### Long-Term Trends

Fairbanks and Alaska have in general served as the last frontier in the minds of numerous Americans afflicted with wanderlust. While a small percentage actually come and fewer remain, both short-term and long-term Fairbanksans share certain common motivations for coming to Alaska (Table 14).

Regardless of the severity of the Alaskan climate and the uncertainties of its economy, the pull of Alaska remains strong. The attractions, however, are changing in importance (see Table 15). While a chance to be independent and to start something new has not lost its pull, the more recent immigrants (associated with the pipeline boom) are noticeably more attracted to immediate income gains, a challenging or exciting job, and less attracted to a self-reliant lifestyle.

The different reasons for coming carries over to

**TABLE 13**  
Average (mean\*) Scores For Overall Community Characteristics  
Now, Before, and After Pipeline Construction

A. Average (Mean) Scores:			
	<u>Now</u>	<u>Pre-Pipeline—1973</u>	<u>Post-Pipeline—1977</u>
Natural	5.1	6.9	5.2
Social	5.1	6.8	5.6
Government	4.9	5.4	5.3
Economic	4.9	5.3	5.0
Overall	5.0	6.9	5.9
B. Changes in Average (Mean) Scores:			
	<u>1973 - Now</u>	<u>Now - 1977</u>	
Natural	-1.8	+0.1	
Social	-1.7	+0.5	
Government	-0.5	+0.4	
Economic	-0.4	+0.1	
Overall	-1.9	+0.9	

\*Mean scores reflect the average response on a scale from 1 to 9, where 1 is the worst you could expect to see and 9 is the best.

attitudes about the future of Fairbanks. Recent immigrants are almost twice as likely as long-term residents to want a great deal of growth in Fairbanks (19 versus 10 percent). They are also more likely to agree that more commercial development will increase the quality of life in Fairbanks (67 versus 59 percent). Since those living in Fairbanks for less than 3 years comprise 41 percent of the population, their views are important to the future development of the community. While it cannot be predicted how their views may or may not harmonize with long-term residents, the variance in attitudes between new and old residents may be an important factor over the long term.

However, not all recent immigrants are enthusiastic about growth, nor are all long-term residents reluctant to see more development. Another way to view the diversity of living patterns and responses to oil development activities is to isolate those residents who came to Alaska primarily for its wilderness attractions. First of all, a substantial percentage of Fairbanks residents feel that getting away from urban problems, being close to a

**TABLE 14**

**Reasons for Coming to Fairbanks**

	Percent Responding Extremely or Very Important <sup>a</sup>	Average (Mean) Score <sup>b</sup>
1. A chance to be independent, to start something new	50	2.9
2. To get close to a wilderness environment	46	2.9
3. Curiosity about Alaska	45	2.9
4. A challenging or exciting job	41	3.1
5. Long-term economic opportunity	39	3.1
6. Immediate income gains	35	3.2
7. To become part of a small community	30	3.5
8. To get away from urban problems	24	3.7
9. To be with family and friends	22	4.0
10. To live a pioneer's life, be self-reliant	20	4.8
11. School or military	19	4.1

Number of respondents - 400

<sup>a</sup>Respondents assessed the importance of each reason on a rating scale range from 1 to 5, where 1 is extremely important, 2 is very important, 3 is moderately important, 4 is not very important, and 5 is not at all important.

<sup>b</sup>Average (mean) scores are the average of all the responses on the same scale as described above. Thus, a lower mean score indicates that a reason is more important.

**TABLE 15**

**Reasons for Coming to Fairbanks by Length of Residence**  
(Average [mean\*] scores)

	Moved to Fairbanks		
	Less than 3 years ago	3-10 years ago	Over 10 years ago
1. A chance to be independent to start something new	2.9	2.9	2.9
2. Being close to a wilderness environment	3.0	2.7	2.8
3. Curiosity about Alaska	2.9	3.0	2.9
4. A challenging or exciting job	2.7	3.3	3.3
5. Long-term economic opportunity	3.0	3.2	3.1
6. Immediate income gains	2.7	3.6	3.6
7. Being part of a small community	3.9	3.3	3.1
8. To get away from urban problems	3.9	3.3	3.7
9. To be with family and friends	4.2	4.0	3.6
10. To live a pioneer's life, be self-reliant	4.0	3.7	3.5
11. School or military	4.3	3.9	4.1

\*Mean scores are the average of all responses for each reason for coming, on a rating scale ranging from 1 (extremely important) to 5 (not at all important). A difference of 0.2 between any two of the above categories would be likely to occur by chance less than 5 times in 100. Any difference greater than 0.2 can be considered significant. A lower mean score indicates that a reason is more important.

wilderness environment, and being self-reliant are extremely or very important reasons for coming to and staying in the Fairbanks area. (See Table 16)

By combining these variables, it is possible to increase the likelihood of isolating those who are strongly oriented toward a self-reliant, wilderness lifestyle. Respondents' scores on six questions (three reasons for coming and three reasons for staying) were summed to create a new variable, referred to in this paper as the "Alaska Lifestyle" variable.

Like other labels, such as "New Yorker," or "Democrat," "Alaska lifestyle" is as much an image as it is a distinct set of attitudes or behaviors. Nevertheless, no one disputes that substantial numbers of Fairbanks residents help build their own homes (38 percent of those owning homes); grow, hunt, fish or gather their own food to some extent (47 percent); and engage in a number of other activities stressing self-reliance (see Table 17).

The relationship is strong between (1) motivations to be self-reliant and near a wilderness environment and (2) correlating behavior. Table 18 clearly indicates that those with an Alaska lifestyle

**TABLE 16**  
**Three Main Reasons for Coming to and Staying in Fairbanks**

	Percent Responding, "Extremely or Very Important" as a Reason for:	
	Coming to Fairbanks	Staying in Fairbanks
To get away from urban problems	24	27
To be close to a wilderness environment	46	49
To live a pioneer's life, to be self-reliant	20	22

**TABLE 17**  
**Degrees of Self-Reliance among Fairbanksans**

How much of your own food would you say you and your family grow, hunt, fish or gather for yourselves:

	Percent
● Most to all of it	2
● About half of it	5
● Some of it	40
● Not any of it	53
	100

Which of these activities have you or your family participated in during the time you lived in Fairbanks?

	Percent
● Build or help build your own house	38
● Cut and gather your own firewood	39
● Sew many of your own clothes	48
● Repair your own automobile, television, or other appliances	73
● Use something besides a car or motorcycle to get to work or shopping	43

**TABLE 18**  
**Motivation to Lead an Alaska Lifestyle versus Actual Behavior**

Score on Alaska Lifestyle Variable*	High		Low	
	1	2	3	4
Proportion of food provided for family by hunting, fishing, growing or gathering				
● About half or more of it	13	6	4	2
● Some of it	43	42	38	35
● Not any of it	43	52	58	63
	100	100	100	100
Percent of families engaging in activities oriented to self-reliance while living in Fairbanks				
● Build or help build your own home	54	34	36	23
● Cut and gather your own firewood	51	50	30	18
● Sew many of your own clothes	52	52	44	42
● Repair your own automobile, television or other appliances	84	69	71	67
● Use something besides a car or motorcycle to get to work	45	45	36	47
Number of respondents	100	111	130	60

orientation are more likely to take part in building their own homes, gathering their own firewood, as well as the other activities shown in Table 18, except for the last item.

Summarizing the analysis to this point, the data suggests that more recent immigrants to Fairbanks tend to differ more than earlier immigrants in their

\*A high score on the Alaska Lifestyle variable reflects a greater proportion of responses in the extremely or very important categories of the items used to construct the scale.

reasons for coming and their living choices. Underlying the changes in reasons for coming that are evident over time, however, are variations in basic lifestyle orientations. Lifestyle differences have been shown to exist both psychologically as reasons for coming to Fairbanks, and behaviorally in the pursuit of activities which stress self-reliance.

Those in the community who share an orientation to the Alaska lifestyle tend to hold a number of other attitudes in common. As shown in Table 19, members of the Alaska lifestyle group tend to evaluate community change in Fairbanks in more negative terms and are more likely to feel that they are bearing the costs of pipeline impact. Looking to the future, they are less in favor of more growth and development (see Table 19 and Figure 3).

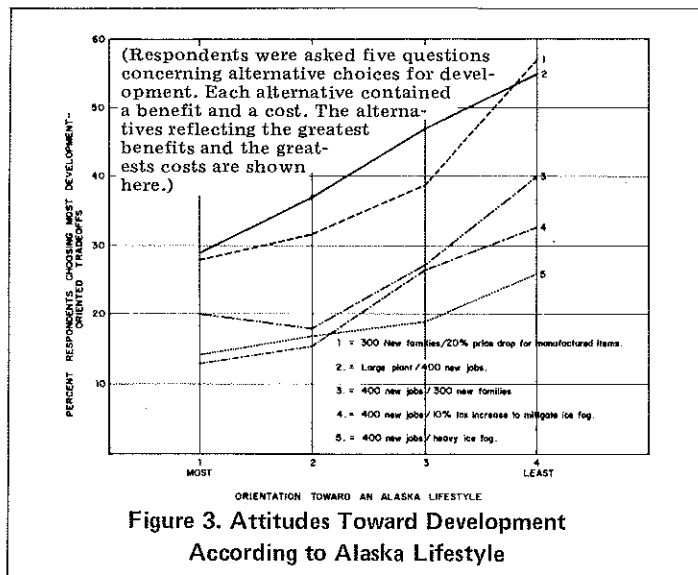


Figure 3. Attitudes Toward Development According to Alaska Lifestyle

As expected, those most oriented to an Alaska lifestyle are less likely to be working on the pipeline (see Table 20). However, those oriented to an Alaska lifestyle do not appear to be working less than other Fairbanks residents.

One would expect that a commitment to self-reliance would result in fewer hours spent earning a wage income. Increases in household income should also be less for the Alaska lifestyle group. Except for those most committed to an Alaska lifestyle, however, no significant income differences appear (See Figure 4). Further analysis may clarify what it means to lead an Alaska lifestyle. It is likely that for many, an Alaska lifestyle is achievable only at considerable expense. The Alaskan environment is not an easy one in which to be truly self-reliant; achieving the lifestyle for some includes compromising investments in such expensive items as preformed building material, chain saws, and snowmobiles.\*

The Alaska lifestyle, however defined, is considered by local residents to be a valuable cultural resource. They believe it contributes to the character

\*There are obviously many different ideas on what constitutes an Alaska lifestyle. For example, Alaska lifestyle living quarters may vary from a one-room log cabin with sod roof to a palatial log house (two-story, with built-in sauna), an A-frame, or even a geodesic dome. Many Alaska lifestyle purists object to the noise and pollution of chain saw and snow machines, while others accept them as necessary work or recreational tools. Therefore, "Alaska lifestyle" here is generally defined as attempting to be, to some degree, more self-reliant than the ordinary urban dweller in the lower states.

TABLE 19

Community Evaluation by Lifestyle Variable (Percent Distribution)

	Score on Alaska Lifestyle variable			
	High		Low	
	1	2	3	4
<b>Evaluation of Community Change</b>				
Changed for the better	5	14	17	22
Changed for the worse	61	69	50	48
Changed both for the better and the worse	27	16	25	14
Little if any change	7	6	8	17
	100	100	100	100
<b>Evaluation of Personal Situation with Respect to Pipeline Impact</b>				
Receiving the benefits	18	23	31	28
Bearing the costs	56	51	38	42
Neither or both	26	26	32	30
	100	100	100	100
<b>Amount of Growth and Development Desired in the Fairbanks area</b>				
Great deal	11	12	15	18
Some	41	44	58	64
Little	26	24	14	10
None at all	22	20	13	8
	100	100	100	100
Number of respondents	100	111	130	60

and diversity of the state and reflects the achievement of an alternative lifestyle to that prevalent in urban America. The effect of rapid growth from oil development on the viability of the Alaska lifestyle may be twofold. Increases in personal income may permit a larger number of Alaskans to, in effect, buy an Alaska lifestyle. The combined pressure of more people with more money to spend, however, may saturate the land that is undeveloped but accessible, making it more difficult for the few who are relatively self-reliant to sustain their lifestyle.

**SUMMARY**

The results of the Fairbanks survey have in general confirmed locally held beliefs about the pattern of community and family change. The magnitude of many changes has been unexpectedly large—for example, the increases in household income and perceived negative community changes. Some of the most important forces for change appear to be high mobility, large increases in personal income, heavy consumer expenditures, possible changes in the

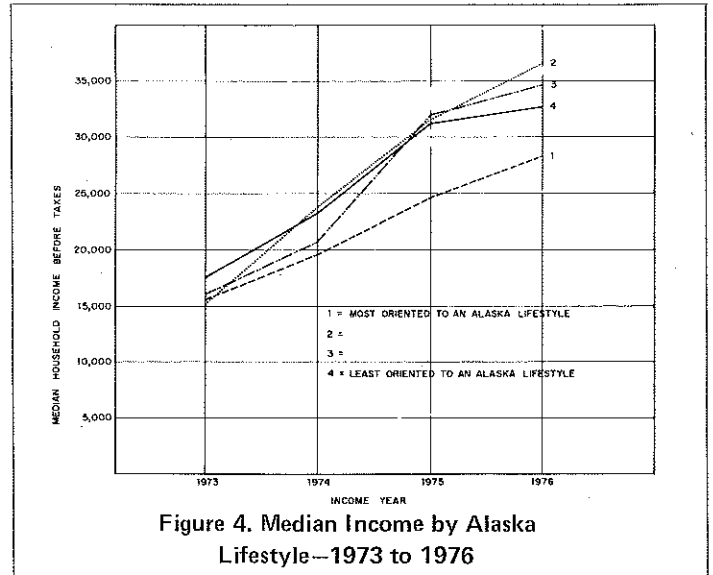


Figure 4. Median Income by Alaska Lifestyle--1973 to 1976

work patterns of women, and an increase in individual and community concern with economic opportunities and costs. That the community heavily depends on pipeline construction is shown by the 21 percent of household heads working for a pipeline company. Obviously, many more are involved in activities closely associated with pipeline construction.

The initial survey results indicate that the community-wide impact has been generally negative. Residents perceive the natural environment to have been permanently degraded while they expect the social attributes of the community to improve following the construction of the pipeline. The impacts on the family appear to be a mix of changes for the better and for the worse. The distribution of positive and negative family changes is not balanced, however, as the analysis by length of residence and lifestyle orientation has shown. Long-term residents and residents oriented toward a self-reliant, wilderness lifestyle feel that they share a disproportionate amount of the costs of pipeline impact.

**FURTHER APPLICATION OF SURVEY RESEARCH**

Two additional phases of related research are currently under way. The first of these, a survey of the leadership community of Fairbanks that parallels the survey reported herein, has been completed with the intent of providing another valuable perspective on community change. A comparison of the two surveys will be made in future publications. The second major undertaking attempts to satisfy a critical need to anticipate community change resulting from energy development. The project will

	Score on Alaska Lifestyle Variable,			
	High		Low	
	1	2	3	4
<b>Work Status with Respect to Pipeline Employment</b>				
Working for a pipeline company	14	21	23	26
Trying to or interested in working for a pipeline company	10	11	9	7
Not interested in working for a pipeline company	76	68	68	67
	100	100	100	100
Number of respondents	98	110	130	58
<b>Time Head of Household Worked During Week Prior to Interview</b>				
Less than 40 hours	11	10	8	16
40 - 49 hours	33	37	34	41
50 - 59 hours	17	18	16	14
Over 60 hours	39	35	42	29
	100	100	100	100
Number of respondents	75	92	112	49



combine the wealth of data generated by the Fairbanks surveys with the economic and demographic computer projection capabilities of the Man in the Arctic Program (MAP). This will allow the forecasting of more detailed patterns of future community change not only for Fairbanks, but for similarly impacted urban communities undergoing rapid change.

The MAP project is currently expanding its capacity to project regional changes. It will soon be able to project, for example, the number and occupational characteristics of an expected influx of immigrants in a given energy development scenario. These anticipated population groups can then be compared with those who migrated to Fairbanks during the pipeline construction period. Similarities in occupational demand between Fairbanks and future similarly impacted cities may permit a general application of the information compiled on living choices, attitudes, and expectations of comparable groups observed in the Fairbanks pipeline construction experience.

### MAP OUTLOOK

The Man in the Arctic Program will continue to investigate the social and economic implications of energy development in Alaska. Research is under way to incorporate the effects of the Alaska Native Claims Settlement Act (ANCSA) with the MAP computer models, while a parallel effort explores the institutional changes associated with ANCSA and the individual and community changes occurring in rural Alaska, particularly among the Native communities. As a comprehensive view of the social and economic effects of energy development in Alaska is being constructed, available research products in the form of computer models, detailed community data, and analysis models will be applied to policy questions confronting Alaskans.

### APPENDIX

#### Survey Preparation and Methods

The supervisory staff hired the survey interviewers locally. Each interviewer completed a three-day training session which included practice interviews. Once the actual survey got under way, interviewers met with supervisory staff once a week to clear up any questions or problems.

In addition to their training, interviewers were given written instructions on how to interview those households selected. The person to be interviewed within each household was also randomly designated to be either the husband or the wife or the head of

the family. In cases of a single adult or group of unattached adults, the head of the household was interviewed. Each interviewer contact was logged, and all sample addresses accounted for by the conclusion of the survey.

One major requirement of the survey design was to obtain a representative sample of all Fairbanks households, including the most recent arrivals to the Fairbanks area. This was difficult, because lists of area residents were incomplete and outdated. In order to ensure that all groups were represented in proportions matching those in the actual population, we used an area probability sample of households. Under this method, each household within the Fairbanks North Star Borough had an equal chance of being selected.

The population sample was based on detailed housing counts made by our research staff in March 1976 and the U.S. Census Bureau in the summer of 1975. All households in the borough were assigned to one of the more than 2,000 blocks or areas with clearly defined boundaries. From these, we selected for further fieldwork a sample of nearly 100 blocks in which each housing unit was uniquely described.

Each personal interview booklet contained over 40 pages of questions which in turn generated some 700 items of information. The design as well as the content of the survey booklet was determined by the particular categories of information desired.

Table A-1 summarizes the categories of actual survey questions. Each category breaks down into a series of questions designed to satisfy that particular area of research interest. (For example, one category would be the respondents' reasons for coming to and staying in Fairbanks.)

A total of 415 interviews were completed between April 12 and July 16, 1976, for a sample representing approximately 3 out of every 100 households in the North Star Borough. The sampling error of the total sample is estimated at 6 percent. Reported percentages can be assumed to be within 6 percent in 95 of 100 cases of the proportions of the population which could be observed if every adult in the North Star Borough were interviewed. With the exception of an unpublished special U.S. Census survey, no comparable public or private survey information for Fairbanks currently exists.

A desired response to the survey of 80 percent was not achieved (Table A-2), primarily because the survey took place in summer during the construction season. This is the time when many residents work up to 10 or 12 hours a day, 7 days a week in order to take advantage of the long hours of sunlight during this relatively short building season.

**TABLE A-1**

**Survey Content**

1. Reasons for coming to and staying in Fairbanks.
2. Knowledge of Fairbanks conditions prior to immigration.
3. Major problems encountered upon arrival in Fairbanks.
4. Present housing situation and plans.
5. Current and expected major purchases.
6. Perceptions of family changes.
7. Perceptions of family values.
8. Social needs: being with others, activities, child care.
9. Provision of own food, shelter, repairs and transportation.
10. Personal experience as victims of crime.
11. Perceptions of environmental, social, and economic change: Fairbanks during, before, and after pipeline construction—and compared with other communities.
12. Tradeoff preferences for growth and development.
13. Local government priorities.
14. Attitudes about planning.
15. Perceived personal satisfaction.
16. Background information: age, education, employment, income, and others.

**TABLE A-2**

**Summary Sampling Statistics\***

	Percent
Response rate	72
Refusal rate	7
No contact rate	12
Non-interview rate	9
	100

\*The response rate reflects the number of completed interviews as a percentage of occupied housing units. Refusals to participate were minimal and most often because of lack of time. The no-contact rate corresponds to the percentage of housing units that were apparently occupied, but where no one was contacted after more than three visits by an interviewer. Non-interviews include all other reasons for noncompletion of an interview.



*For those interested in further detailed results of the Fairbanks survey, we have prepared seven statistical summaries:*

- 1. Demographic Characteristics of the Fairbanks Population*
- 2. A Profile of Fairbanks Housing*
- 3. Reasons for Coming to and Staying in Fairbanks*
- 4. Perceptions of Community Change*
- 5. Social Conditions in Fairbanks*
- 6. Economic Conditions in Fairbanks*
- 7. Leading an Alaska Lifestyle: Is Anyone?*

*You may receive a copy of any of these summaries by contacting the receptionist/librarian at the Fairbanks offices of the Institute of Social and Economic Research, eighth floor Gruening Building, University of Alaska, telephone 479-7434. Copies are free upon request.*



## ABOUT THE INSTITUTE

Established in 1961 by the Alaska Legislature, the Institute of Social and Economic Research operates as a principal research organization within the University of Alaska system. Since its inception, ISER has developed into a full-scale economic and social science research institute, dedicated to applying its multi-disciplinary skills to the practical policies and problems of economic and social change in Alaska. Research experience and capabilities include:

- Economics of petroleum, mining, timber, agriculture, recreation, and other resources.
- Social and economic impact analyses of major proposed developments.
- Regional and community planning and development.
- Program planning and evaluation.
- Survey research.

- Education, social service, legal, ethnographic, and other investigations relating to Alaska Natives.
- Institutional and political studies of federal, state, and regional governments.
- Transportation and energy planning and policy development.
- Population and manpower forecasting.
- Arts and cultural life.
- Environmental, resource, and wildlife management.
- International comparative analyses and Alaska-related studies that have involved the Soviet Union, Japan, and Canada.

Institute research has a special geographical focus on: Alaska; northern Canada; and the North Pacific Basin, including Japan and Siberia, polar regions and circumpolar lands.

## PUBLIC SERVICE OBJECTIVES

Unlike profit-oriented research and consultant organizations, ISER's primary aim is to find answers to questions of social, economic, and political importance and disseminate its results to the public and private sectors. Most ISER research is carried out for and in close collaboration with state executive and legislative agencies, federal agencies, and Alaska Native organizations. Specifically, ISER's public service objectives are to:

- Provide information on the economy, population, government, and resources of the state for public and private use. ISER accomplishes this by: (1) Providing direct assistance to businesses, government, and the general public; (2) sponsoring conferences and symposia; (3) disseminating research results through ISER publications; and (4) filling requests for census information.
- Provide professional assistance to public and private organizations to help meet socioeconomic needs of Alaska's population. Staff members serve as advisors to or members of the Alaska Native Foundation, the Cook Inlet Native Association, the Women's Resources Center, the Federal-State Land Use Planning Commission, the Alaska Oil and Gas Royalty Board, the Alaska State Census Advisory

Committee, and the *Tundra Times*.

- Sponsor discussion of public issues. Examples: The Alaska Growth Policy Symposium, the Alaska Constitutional Review (both cosponsored by the Alaska Humanities Forum), and the Alaska Science Conference on "Change in the North: People, Petroleum, and Politics."
- Promote the exchange of information between the University of Alaska and other institutions. Examples: exchange of all institute publications with other research institutes in the U.S. through membership in such professional organizations as the Association for University Business and Economic Research (AUBER); exchange of information with the Institutes of the USSR Academy of Sciences.
- Strengthen the academic faculty of the University of Alaska and assist in the establishment of graduate programs in the social sciences. In addition to their institute responsibilities, institute members generally teach within their disciplines. Staff members teach or have taught such classes as regional planning, educational psychology, economics, political science, sociology, anthropology, transportation, and public works evaluation.

### FORTHCOMING REVIEWS

Beginning in 1977, the institute plans to start putting out the *Alaska Review of Business and Economic Conditions* as a quarterly publication. Among issues planned for the new year are:

- "*Alaska Electrical Power Requirements - A Review and Projection*," by Scott Goldsmith. This *Review* will provide an overview of recent trends in electrical power consumption in Alaska and will develop consistent sets of both regional and statewide projections of future electrical power use.
- "*Petroleum Development in Alaska*," by Thomas A. Morehouse. This issue will (1) briefly review oil and gas development in the state, from early exploration to the present development of the Prudhoe Bay field; (2) examine future potentials for oil and gas development in the state; and (3) discuss major factors affecting such development.
- "*Alaska Economic Forecasts for 1977*," by Daniel A. Seiver. This *Review* will both present economic projections for the new year and examine the institute's Man-in-the-Arctic econometric computer model used to generate the forecasts.