Preparing for Gas Pipeline Impact:

A Guide to Health Planning for

Upper Tanana Communities in Eastern Interior Alaska

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PREPARING FOR GAS PIPELINE IMPACT: A GUIDE TO HEALTH PLANNING FOR UPPER TANANA COMMUNITIES IN EASTERN INTERIOR ALASKA

PREPARED FOR:

UPPER TANANA DEVELOPMENT CORPORATION

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ABSTRACT

Construction of a natural gas pipeline through Eastern Interior Alaska will foster a "boom-bust" phenomenon in Upper Tanana communities during the early 1980's. Literature which addresses the impacts of energy development and rapid change on health suggests that such endeavors are disruptive to both personal and community health. As a step in guiding health planning efforts aimed at minimizing the negative impacts of pipeline-related activities, the author conducted a field study during the summer of 1978 which (1) provided descriptions of Upper Tanana communities and their existing medical services; (2) identified existing health problems and service deficiencies in both Euroamerican and Athapaskan Indian communities, through personal interviews and with data derived from a mail survey; and (3) explored the health and medical service impacts on rural Alaskan communities of Alyeska Oil Pipeline construction in the early 1970's. On the basis of the research findings, recommendations are made to assist both Upper Tanana communities and Northwest Alaskan Pipeline Company in ensuring that appropriate medical services are operable during the impact period. In view of projected population growth in the Upper Tanana region in the years ahead, the recommendations can also assist in the planning for and development of services and programs required to meet long-term needs.

ACKNOWLEDGMENTS

This report is based primarily on research conducted during the summer of 1978, but draws upon my academic graduate training and previous fieldwork in Eastern Interior Alaska as well. Portions of this study were completed while my graduate studies were supported by an NIMH Pre-Doctoral Training Fellowship at the University of California San Francisco. I am indebted to many individuals and organizations, whose support, advice and encouragement contributed to the completion of this study and preparation of the final report. I hope that the finished product reflects my gratitude and sincere appreciation for those who assisted in innumerable ways.

I owe my greatest debt, of course, to the people of the Upper Tanana region, who extended many courtesies and made the field experience a memorable one. Their concern for the social impacts which accompany gas pipeline construction provided the substance of this report, and those who differed with me in conceptual terms stimulated my thinking nonetheless. I am especially grateful to the Athapaskan village leaders who allowed me the opportunity to conduct interviews in their communities and to participate in other activities.

My requests for assistance from health services personnel in Tok, Delta Junction, Glennallen and native villages were never denied, despite the pressing professional demands on their time. Staff members at Tanana Chiefs Health Authority and North Alaska Health Resources Association in Fairbanks shared information that could not have otherwise been obtained without duplicating previous efforts.

I extend special thanks to the Executive Director and Board of Directors of the Upper Tanana Development Corporation (UTDC), and to the Western Interstate Commission for Higher Education, for approving of and providing support for this project. The staff at UTDC gave freely of their time and assisted in numerous ways throughout the summer. By sharing her insights with me, Carol Buge' added an important dimension to my overall field experience.

Preparation of this report was a difficult task made somewhat easier by the efforts of serveral persons in Tok and at the University of California, who reviewed the manuscript in draft form. Bob Lohr, who provided direction for the duration of the project and continues to stimulate my thinking, added detailed comments and updated me on pertinent developments after I departed from the field. Dorothy Eshbaugh, Cathie Ipalook and Barbara Wihlborg not only pointed out discrepancies in the community and health services descriptions, but added their overall assessment of the report as well. Their assistance and support throughout the summer deserve more acknowledgment than I can express here.

Dr. Nelson H.H. Graburn, University of California Berkeley, who has enhanced my overall understanding of Northern peoples, identified several points in the report needing clarification. Dr. Linda Mittenness, University of

California San Francisco, assisted in preparation of the tables in Chapter VII, and suggested possible directions for further data analysis. A critical reading of the manuscript by my friend and colleague, Kirk Dignum, set the stage for discussion of alternative ways in which the report could have been organized.

Although I did not always heed the advice of my critics, their contributions have been given careful consideration in the preparation of this final draft. The reviewers appropriately share in any positive contributions this document makes to planning activities but I assume sole responsibility for the material in its present form, and for any errors or shortcomings it contains. The views expressed are my own and do not necessarily reflect the opinions of any individuals or agencies cited in this study.

Ginny Bergren deciphered the final rough draft and cheerfully typed this manuscript as my self-imposed deadline approached.

Finally, I extend special thanks to my mentors and colleagues at the University of California, and to Mim Dixon, who have been constant sources of encouragement throughout my research endeavors in the North.

This report is dedicated to my late grandfather, whose untimely passing last fall deeply saddened me as I concluded fieldwork, but served as inspiration for completing a challenging and exciting project.

TLH

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

FIGURES

"Anthropologists and other social scientists can no longer taks a passive role in simply studying the consequences of change. There is growing acceptance of the notion that we must apply our special knowledge and skills in an attempt to ease the commonly disruptive effects of such worldwide events as development, modernization, industrialization, and urbanization. To be successful in this endeavor we must first further our own understanding of the actual processes of change through more systematic, multidisciplinary, and theoretically relevant investigations in a variety of different settings. Only then will useful, predictive theories evolve which can be used to guide programs of change that ease the transition to new technologies, lifestyles, and states of mind."

Clyde M. Woods

I

INTRODUCTION /1/

On September 22, 1977, President Carter announced his selection of the Alcan Proposal as the route for a natural gas pipeline extending from Prudhoe Bay, Alaska, along existing utility corridors through Alaska and Canada, to markets in the Midwestern United States (Figure 1 and 2). A 138-mile segment of this major energy development project, the second in Alaska in less than a decade, will pass through the heart of the Upper Tanana region in Eastern Interior Alaska, and either directly or indirectly impact several small communities lying within that geographic locale. This portion of the Alaska Natural Gas Transportation System parallels the Alcan (Alaska) Highway and is within the confines of the Doyon Native Corporation and Tanana Chiefs Conference. It will run in close proximity to one Euroamerican community (Tok)/2/ and four predominantly native (Northern Athapaskan Indian) villages (Dot Lake, Tanacross, Tetlin and Northway) (Figure 3). Five outlying communities (Healy Lake, Mentasta, Chicken, Eagle City and Eagle Village) will also feel the affects of economic development in the region, but probably to a lesser extent than their counterparts along the pipeline route.

In a brief submitted to the U.S. Federal Power Commission in 1976, Alcan Pipeline Company (now Northwest Alaskan Pipeline Company) discussed the projected socioeconomic impacts of pipeline construction on the first five communities mentioned above. The brief stated that, to a certain extent, Tok resembled the community of Delta Junction in terms of the dislocations it might experience and that Delta Junction actually felt during construction of the Alyeska Oil Pipeline. Alcan "anticipated" that Tok could absorb potential impacts with minimal disruption and that gas pipeline construction would help to facilitate Tok's "existing emphasis on tourism and other economic development." Finally, since the community's infrastructure had already begun to expand, Alcan predicted that further development could be accomodated with a minimal amount of risk.

Dot Lake and Tanacross were considered probable recipients of similar impacts. The location of these villages near the Alcan Highway had facilitated "some integration and acculturation into Euro-American society." Alcan expected that there would be a lessening of cultural traditions and that some of the young men would be lured away from the community by the high pipeline wages. Post-construction impacts were projected for Tanacross, which was identified as the "largest native community directly on the Alcan Route" (Northway actually has a larger native population but sets several miles away from the corridor).

Alcan's brief noted the relative isolation of Tetlin from other communities in the region and stated that "the change from a cultural tradition in Tetlin would be the most significant of all the communities affected." In

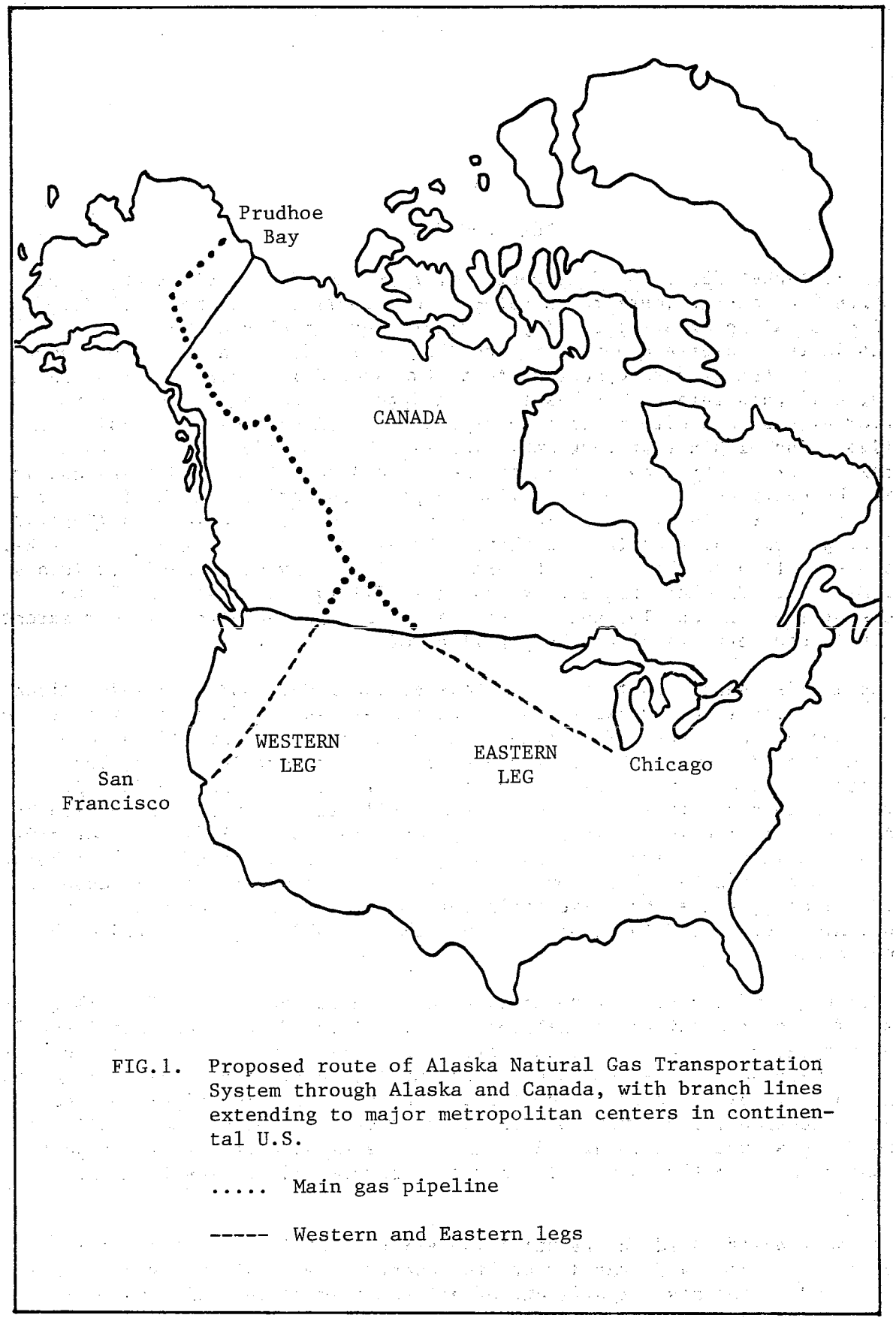

FIG.1. Proposed route of Alaska Natural Gas Transportation System through Alaska and Canada, with branch lines extending to major metropolitan centers in continental U.S.

..... Main gas pipeline

----- Western and Eastern legs

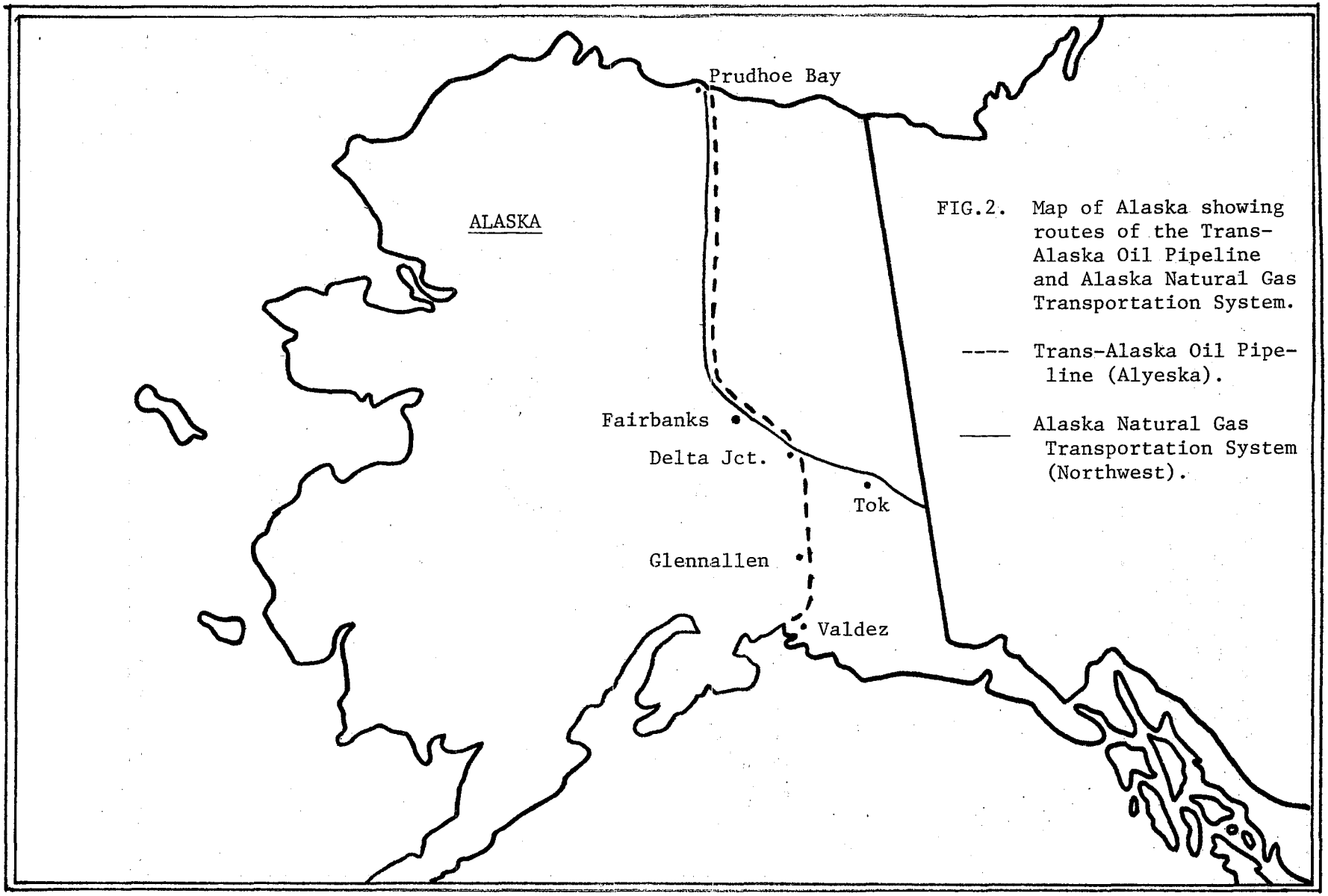

FIG.2. Map of Alaska showing routes of the Trans-Alaska Oil Pipeline and Alaska Natural Gas Transportation System.

---- Trans-Alaska Oil Pipeline (Alyeska).

____ Alaska Natural Gas Transportation System (Northwest).

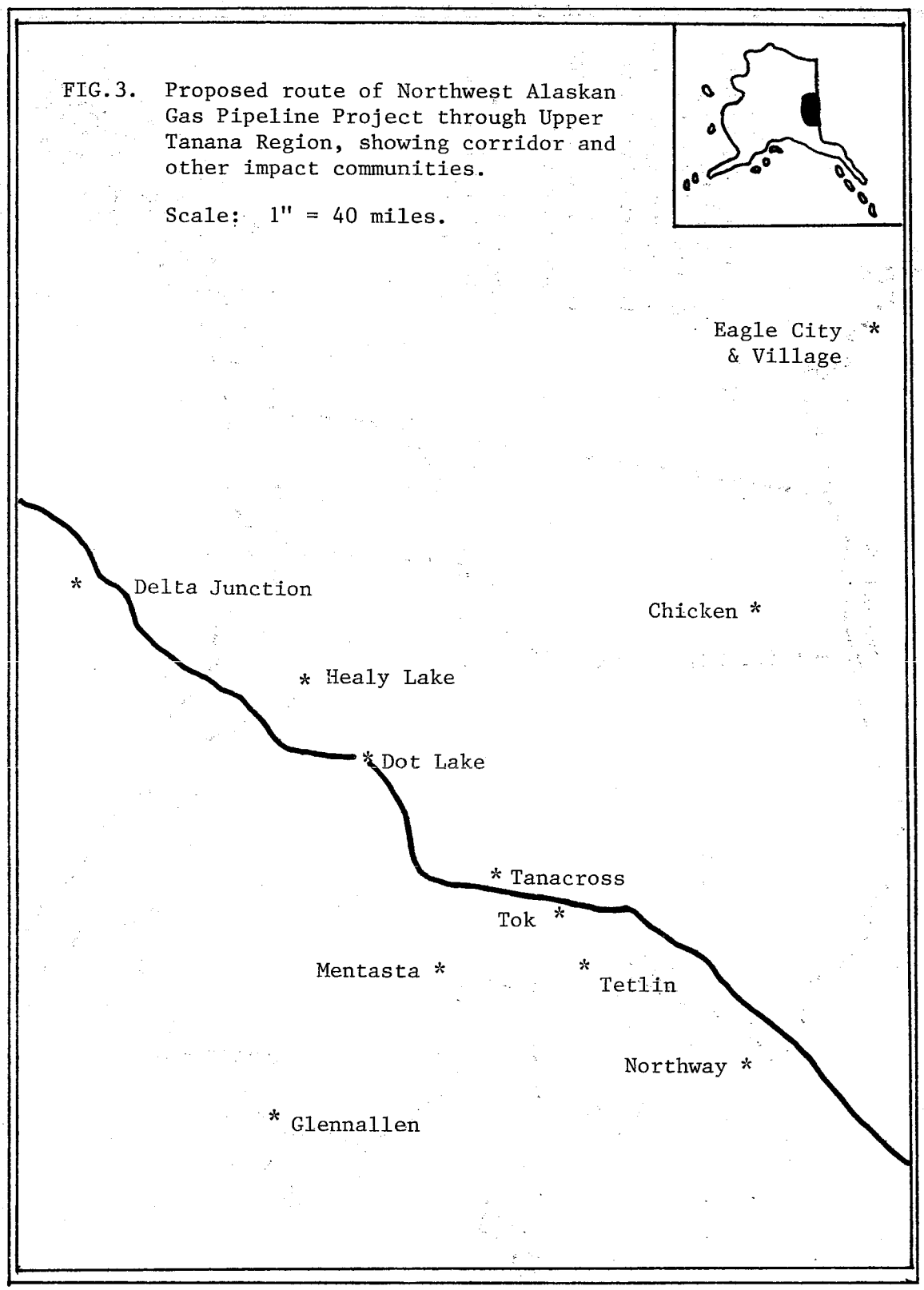

FIG. 3. Proposed route of Northwest Alaskan Gas Pipeline Project through Upper Tanana Region, showing corridor and other impact communities.

Scale: 1" = 40 miles.

attempt to soften the impact of this statement, Alcan added that some change in Tetlin is inevitable, whether by pipeline construction or other means. Similarly, tentative plans called for a major construction camp to be located near Northway, "which will increase temporarily the demands on local resources" but will "provide construction-related employment for a highly depressed labor market."

Alcan could not accurately gauge the potential effects on Alaska native communities and populations of continued economic development, but emphasized the "substantial socioeconomic benefits for native communities" which could be anticipated. The Company also believed that the establishment of "appropriate relationships with native communities and populations affected" and implementation of "appropriate mitigating measures" would minimize potential adverse social and cultural impacts of gas pipeline construction and related activities (Alcan Pipeline Company 1976). /3/

The Upper Tanana region has experienced steady, if not rapid growth during the past decade (See Table 1 on p.18). Depending upon the boundaries drawn, some 2,000 to 2,500 persons currently reside in the scattered settlements or in the hinterland. Historically, the region is the homeland for the Upper Tanana branch of the Northern Athapaskan Indians, and it continues to serve as the basis for their cultural traditions and subsistence activities. Since World War II and construction of the Alcan and Taylor Highways, however, increasing numbers of Euroamericans have been attracted to the region because of its "frontier" qualities and the solace it offers from the faster pace of life "Outside" (continental U.S.). Since the Alcan Highway is the "Gateway to Alaska," the lone highway route leading from the Lower 48 States and Canada to Alaska, all highway travelers must pass through the Upper Tanana region enroute to other parts of the State.

In view of current growth trends in the area, any additional population influx, especially that which accompanies energy development, carries important implications for local communities. Since both the direction and intensity that the impacts of pipeline construction will have on Upper Tanana communities remain somewhat unclear, the need for careful planning is patently evident. To this end, apparent delays in the construction schedule will benefit individuals and agencies involved in planning activities, if they use this time to assess the needs of, and adequately prepare corridor communities for pipeline impact. The absence of existing planning mechanisms in the Upper Tanana region emphasizes the importance for communities to not unduly delay preparatory measures.

Community planning efforts will be augmented to some extent by social and economic stipulations attached to the right-of-way agreement between the State of Alaska and Northwest Alaskan Pipeline Company. A similar agreement between the State and those companies involved in construction of the Alyeska Oil Pipeline lacked similar regulations, and instead addressed only environmental, technical and procedural matters. Public concern and the Alyeska experience prompted the State Legislature to specify that the project sponsors assume at least partial responsibility in minimizing the social and economic disruptions caused by gas pipeline construction (Alaska Industry 1978; also see Dixon 1978 for an excellent discussion of the socioeconomic impact of oil pipeline construction on Fairbanks, Alaska). Included in these stipulations are sections addressing transportation; public safety and law enforcement; health and social services and facilities; community relations; labor;

business participation; and conditions in construction work camps (Alaska Executive Coordination Committee 1978).

Since September 1977, Upper Tanana Development Corporation (UTDC), in Tok has given high priority to mitigating the negative impacts of pipeline construction on the lives of its constituency--primarily the elderly, native and low-income residents in the Upper Tanana region. Within two weeks after President Carter announced his decision, the UTDC Board of Directors (representing Healy Lake, Dot Lake, Tanacross, Tok, Tetlin, Northway and Eagle Village) developed a work program designed to assist local communities in preparing for pipeline-related impacts. The Board instructed UTDC's Executive Director to begin an assessment of the variety and severity of both positive and negative impacts expected from the project.

In October 1977, UTDC's Board of Directors met again, this time with an attorney and a consultant, who shared their experiences and insights based on their involvement with the Alyeska Pipeline project. In November 1977, UTDC sponsored a public meeting in Tanacross at which Morris Thompson, Vice-President of Northwest Alaskan Pipeline Company, spoke to local Village Council and Corporation Presidents. Representatives from Fairbanks Town and Village Association for Development, Inc. (FTVAD), the Interior Village Association, and the State of Alaska, Division of Community Planning were also in attendance.

Discussions at these meetings laid the foundation for the Upper Tanana Regional Forum on Gas Pipeline Impact, held in Tok in April 1978. The Tok Chamber of Commerce and FTVAD sponsored this forum with funding from an Alaskan Humanities Forum Grant and a supplemental appropriation from the State Legislature, which brought together Upper Tanana residents and State, federal, pipeline and other officials to discuss issues related to rapid growth, pipeline construction and long-term natural growth in the region. Committee sessions devoted to in-depth examinations of specific topics of concern to Upper Tanana residents complemented these discussions and included business and tourism; public utilities and telecommunications; land and agriculture; public safety, legal services and fire protection; education; women's concerns; rural and native concerns; highways and transportation; job training and placement; and social services (health, alcoholism and housing).

Although a final report based on the Upper Tanana Regional Forum has not yet been published, a preliminary report summarizing these committee sessions identified a range of social services concerns focusing on health-related issues as they related to pipeline impacts. A representative from the Tok Community Clinic described that facility and emphasized the need for its expansion; the clinic is currently not equipped to handle emergencies involving two or more people simultaneously, and lacks holding beds and emergency facilities. A report from the Public Health Nurse clearly revealed a need for additional staffing at the Public Health Clinic, and a plea was made for mental health services, which are currently nonexistent in the area.

The Tok Ambulance Coordinator expressed concern for the increase in highway accidents which will accompany regional growth and development. He stated that a second ambulance is needed, as are additional trained emergency personnel. A representative from the Upper Tanana Regional Council on Alcoholism (UTRCA) reviewed that agency's services and indicated concern for the added alcohol-related problems concomitant to future growth in the region. This

agency, too, is experiencing staffing shortages and other institutional limitations which restrict its capabilities to deal with existing problems.

Concern was expressed for senior citizens of the region, who would probably not share in the benefits of pipeline construction but would fall victim to the associated negative impacts. Similarly, those persons receiving Public Assistance from the State are without a permanent liaison in the region and would be subjected to further problems in the course of community growth.

The Governor of Alaska voiced his concern for health care budgets in the State and pointed out the problems in allocating funds for health services.

Northwest Vice-President Morris Thompson could not indicate the Company's plans for utilizing local health care facilities, equipment and personnel, since the Company had not yet addressed medical service planning. He indicated that Company representatives would consider making contractual arrangements with local health services, if such a plan seemed appropriate. Thompson mentioned the possibility of Northwest assisting in the much-needed clinic expansion in Tok, if the Company decided to use local services. /4/

This committee report clearly indicates a range of medical service deficiencies in the Upper Tanana region which will be magnified by continued population growth and pipeline construction. Upon learning of UTDC's involvement in social impact mitigation regarding the gas pipeline project, I contacted the Executive Director and indicated my interest in conducting a community health study which might serve as a guide to health service planning for the region. I had engaged in oral history research in the region during the previous two summers and was now eager to pursue a more challenging project more directly related to my professional training and career interests--and one which might contribute to health planning for rural Alaskan communities. Although UTDC had not anticipated direct involvement in health services planning, the Director found significant merit in my proposal; together we developed a project which remained within the parameters of UTDC's overall objectives and advanced this agency's role in impact mitigation for the region.

Since the project became a reality only a short time before actual field research began, some health care professionals and agency personnel in Tok expressed some displeasure with a project designed without adequate consultation. However, the actual project design and objectives remained flexible from their inception and until I had an opportunity to solicit input from these persons. Without the benefit of their ideas and expertise, the project on which this report is based would have significantly less to contribute to health planning for the Upper Tanana region.

Although this report is intended as a guide for health planning for the immediate future--because of the rapidly approaching gas pipeline construction project--it does not ignore long-term considerations. If the past decade is any indication of the future, the Upper Tanana region can expect continued steady growth in the years ahead. Appropriate health planning must account for both the short- and long-term needs, instead of addressing them on an individual basis. Furthermore, planners must remember that the rate of growth may affect the timing for additional services needed. Admittedly, such a strategy involves numerous risks, but since the majority of present and future service needs in the Upper Tanana region currently exhibit striking

similarities, the likelihood of superfluous programs and services being recommended is substantially reduced.

This report does not discuss all health-related issues associated with pipeline impact and long-term growth, nor is it a representation of all community viewpoints. Instead, it reflects the interests of community health professionals and other concerned citizens who shared their ideas with me, in conjunction with a review of pertinent literature and selected health documents. One of my primary objectives in this project has been for community residents to have the opportunity to express their views, that this and other relevant information be presented systematically, and that this report be utilized as a working document for planning purposes.

The report begins with a brief assessment of the impacts on health of "boom" projects and other instances of rapid change. Since gas pipeline construction will be a "boom," followed by a "bust" and rapid population decline, health planning must envision both short- and long-term needs, as mentioned above, and take into account the problems documented in other energy development projects. Brief descriptions of the target communities in this study are then presented to better, though inadequately, acquaint the reader with the Upper Tanana region. Following, in order, are chapters devoted to (1) a discussion of research methodology; (2) descriptions of health services currently available in the Upper Tanana region; (3) the results of surveys in Tok and Athapaskan villages; and (4) a summary of medical services and health issues in two Alyeska Oil Pipeline-impacted bush communities. This sets the stage for presentation of recommendations intended as guides for future health planning in Upper Tanana communities. In the Summary, I will identify topics requiring further consideration in the course of health planning activities in the region.

I must emphasize that this report is a working document from which additional and more specific health services research can be planned. Consequently, not all community viewpoints are expressed, nor did all residents in all communities have an opportunity to contribute to this study. A main strength of the report centers on its systematic approach and its emphasis on the fundamental health services issues facing Upper Tanana communities. I believe it warrants careful consideration by those who will participate in future health planning for this region; if this report creates an awareness among health planners--including those involved with the gas pipeline project--and serves as a foundation for (1) documenting service deficiencies; (2) identifying inter-agency overlaps serving as barriers to efficient service delivery; and (3) implementing needed services and programs, then it will have attained its primary objectives.

II

CULTURE CHANGE, DEVELOPMENT AND HEALTH

A thorough assessment of the impacts on health of rapid culture change and energy resource development lies beyond the scope of this report. In fact, the sheer diversity in both the types of change/development and their contextual framework complicate any such analysis. It is important, however, that the kinds of health problems which can accompany large-scale development be identified and taken into consideration in future health planning for the Upper Tanana region. A brief review of selected literature which addresses the potential or actual impacts of rapid change and resource development can be instructive in this regard.

Background

Culture change has been defined as "any modification in the way of life of a people, consequent either to internal stimuli (such as innovation) or to contact between two peoples with unlike ways of life" (Spindler and Spindler 1963:511). While acknowledging the difficulties in establishing a general definition for development, /1/ Hughes and Hunter (1970:444) offer a minimal definition in terms of its functional implications. They consider development to be,

> ...a conscious and deliberate intervention into the status quo ante, a purposive action to alter sets of conditions, whether these be (in the most common referent of the term) economic, as in attempts to improve the food supply; or in any other institutional area of human life, as in the establishment of new settlement patterns, educational systems, forms of governance, or whatever.

Hughes and Hunter also point out the development programs are interventions into the affairs of nature and can, therefore, have both intended and unintended consequences. From the above definitions, it should be clear that culture change and development are interrelated terms, and the occurrence of the latter signals the onset of the former, although "developers" often overlook this relationship.

The discovery of large quantities of oil in the North Sea in 1972 marked the beginning of rapid changes for inhabitants of the remote Shetland Islands, located 250 miles north of Aberdeen, Scotland, and 250 miles east of Bergen, Norway. By 1980, the Shetland Islands will emerge as a major receiving and processing site for North Sea oil, and the character of the islands will be transformed from a rural and seafaring existence to one far more industrialized. A long-term longitudinal mental health study developed by a research team from the University of California proposes to determine whether the rapid changes will adversely affect the islanders' mental health and promote

increases in social disorder (crime, divorce and suicide). The investigators have hypothesized that changes associated with oil development will have a deleterious effect on the Shetlanders' health and way of life. Preliminary findings reveal no significant changes in the mental health status of the population, although these data form an important baseline from which future change can be measured (Rosen and Voorhees-Rosen 1978). However, in their review of the literature, the Rosens enumerate several situations showing a strong correlation between culture change/industrialization in small traditional communities and the appearance or intensification of mental health and other problems (e.g., delinquency, alcoholism, drug addiction, venereal disease, sociopathic behavior, broken families and crime).

Hughes and Hunter (1970) examined development activities in Africa, which they view as an "underdeveloped region," and identified the unanticipated consequences on the health status of the population. Simply stated, they found that the ecological disruptions accompanying well-intended development programs changed the pre-existing relationships betweens humans and their geographic, biological, social and psychocultural environments. These include:

1) overall changes in man-habitat relationships;
2) increased population movements, mixing and concentration;
3) changes in patterns of water flow and use;
4) change in vegetation cover;
5) changes in micro-environmental conditions; and
6) changes in value systems and social sanction systems (Hughes and Hunter 1970:451-452).

Although the tropical diseases prevalent throughout much of Africa, fostered by ecological disruption and technological change, differ markedly from those in the Arctic and Subarctic regions of North America, Hughes and Hunter emphasize the need for, in their words, "wide angle vision" in contrast to the "tunnel vision" characteristic of many current development schemes (including those focusing on energy development in North America). Conversely, such problems as communicable diseases, behavioral and psychiatric disorders and poor nutrition are not specific to any geographic area and occur with regularity in rapidly changing regions.

Heyneman (1977) more recently reiterated the issues addressed by Hughes and Hunter, and emphasized specific epidemiological hazards which accompany programs of assistance in tropical countries. Heyneman also describes three disruptions above and beyond the health hazards of development which spell doom to both the land and its occupants: (1) loss of ecological integrity; (2) loss of cultural or social integrity; and (3) loss of personal integrity.

Boomtowns

"Boomtowns", a phenomenon which historically accompanied mineral extraction and processing ventures, continue to be linked with energy development projects. As Little (1977) points out, boomtowns have been romanticized and have captured the public appeal via the media; such favorable images, however, are inconsistent with the actual social and physical conditions of most boomtowns. Little presents data from Montana and Wyoming boomtowns in making his case and identifies a wide range of problems: inadequate recreation facilities; boredom for non-working wives and extreme work-related stress for

husbands; high instances of divorce, depression, alcoholism and attempted suicides; high delinquency rates and poor adjustment to schools, coupled with increases in assaults and cases of venereal disease among students; and psychological problems created by overcrowding (Little 1977:9-10). Little concludes by noting that "the social milieu of boomtowns is not conducive to good mental health."

Brown (177:5) paints an equally dismal picture of boomtowns, which are normally unprepared to absorb a population influx:

> Mental health problems are easily identified. There seems to be an increased incidence of depression among women and an increasing rate of alcohol consumption among males. Children and adolescents living in crowded quarters with parents under pressure show an increasing incidence of behavior disorders and social maladjustments. It is difficult for the newcomers to establish solid interpersonal relationships, those warm, supportive relationships of so much psychological value.
>
> There is further disruption in that most families long resident in the communities cannot meet the steeply rising cost of living, and must try to move to less booming areas where they can survive. Senior citizens on small fixed incomes are hard pressed and increasingly isolated, and have their meager network of relationships destroyed.

Two other energy-impacted communities in the Western U.S. also illustrate the medical service problems with which boomtowns must contend. Following the onset of power plant construction near Rock Springs, Wyoming in 1972, the doctor-patient ratio in the community fell from 1/1,100 to 1/3,700 within two years. Since the community encountered difficulties in attracting new health care professionals, 30% of the population indicated that, at the height of the boom, they were obtaining health services some 200 miles away in Salt Lake City (Energy Impact Assistance Steering Group 1978:A-2). Coal development and power plant construction near Craig, Colorado led to a 50% population increase in that community between 1972 and 1976. During this same period, crimes against persons increased 900%, alcoholism cases by 623%, family disturbances by 352%, child abuse/neglect cases by 130%, and child behavior problems outside of schools by 1,000% (Energy Impact Assistance Steering Group 1978:A-4).

Change and Development in the North

Turning now to Northern communities, available reports suggest that, with few exceptions, similar if not more serious health problems accompany large-scale energy development and associated activities. A discussion of the health issues which focus on the Arctic and Antarctic regions in nicely presented by the World Health Organization (1963); while this article does not focus specifically on health and development, it does identify the problems which existed in the early 1960's and remain largely unchanged. At best, poorly planned development and rapid change will do little to improve existing health conditions, and there is good reason to believe that conditions will worsen.

Kupfer and Hobart (1978) analyzed the impact of recent oil exploration work in the MacKenzie Delta region of Canada on the Inuit (Eskimo) people of Coppermine (located about 800 miles away along the Arctic coast). Rather

than recruit workers from the South or from among interested Northern Euro-americans, Gulf Oil Canada secured its work forced from Coppermine. Kupfer and Hobart found that the employment program was generally well-received by the Coppermine Inuit and White residents, at least on a short-term basis (the long-term implications of this economic windfall cannot yet be appraised). Following the first six-month work season, however, these impacts on health had been noted:

1) Consumption of "junk foods," sweets and starches increased, apparently a reflection of the greater availability of money and "junk foods;"
2) liquor purchases and consumption increased;
3) nurses at Coppermine believed that cases of child neglect sometimes accompanied drinking periods; and
4) reported incidences of violence increased, particularly among married women--perhaps stemming from separation from their husbands and increased liquor consumption.

Construction of the Alyeska Oil Pipeline in Alaska left its mark on every community in the State, especially those located along the pipeline corridor. The experiences of pipeline-impacted communities are especially relevant to planning for the gas pipeline, since the two projects exhibit striking similarities. Elsewhere in this report I discuss the impacts of the Alyeska project on medical facilities in two heavily-impacted communities (Delta Junction and Glennallen).

Smelcer (1974) reported on the impacts of preliminary Alyeska construction activities in the Copper River Valley (also see Strong 1977). At this early stage and in less than one year, she recorded a 30% population increase in the region, a 20% increase in motor vehicle traffic, and substantial increases in vehicle accidents, alcoholism, and in juvenile and drug offenses. Smelcer identified one of the major health-related needs was a "social development center," to deal with the growing problems of alcoholism, drug abuse and mental health. A similar report prepared by Ahtna, Incorporated, the native profit corporation in the Copper River region, reiterated the need for a mental health program "before such problems get out of hand as a result of pipeline impact" (Olson n.d.).

> ... out of the most recent offenses coming to the attention of this (Glennallen) court, 46 were directly related (according to the charge alone) to the misuse of intoxicants. The proportion of such offenses can be expected to increase in a rapidly growing unplanned community almost totally devoid of entertainment with the exception of gatherings at local bars...(Olson n.d.:9).

Mim Dixon (1978) presents a superb appraisal of the impacts of Alyeska Oil Pipeline construction on the community of Fairbanks, Alaska. Her residence in Fairbanks during the construction period and two years involvement with the Fairbanks North Star Borough Impact Information Center enabled her to carefully assess community changes related to this major development endeavor. To make inferences from the pipeline-related experiences of a large city to the smaller, more remote Upper Tanana communities is at best a risky proposition; in fact, Dixon identified several characteristics of Fairbanks which may have served as "inherent mechanisms for coping with

stress from community change." These included:

1) the duration of pipeline impact was well-defined;
2) a majority of the Fairbanks population was relatively transient;
3) the community has historically experienced boom and bust periods; and
4) many changes became changes of degree rather than kind of problem. (Dixon 1978:217-220).

Whether the same will hold true for smaller communities is uncertain, but they do lack the "cushion" necessary for absorbing even short-term impacts. Dixon's analysis of pipeline impacts does identify a range of problems which did affect Fairbanksans, including problems with health care delivery, rises in alcohol consumption and community stress, and a variety of negative impacts on the city's senior citizens.

On the basis of the above examples of communities which have experienced rapid changes and energy development projects, there is sufficient cause for planners to be concerned with the impacts on health that gas pipeline construction will have in Upper Tanana communities. Indeed, as Dixon stated,

> ... from 1968 to 1974 the emphasis of state and local leadership in business and government was to overcome obstacles to the trans Alaska pipeline and assure that it would be constructed. The goal of securing the pipeline superceded the goal of planning for the pipeline... (Dixon 1978:9).
>
> Failure of federal and state governments and private industry to assume greater responsibility for social and cultural impacts of the trans Alaska oil pipeline need not be repeated in other resource development situations... (Dixon 1978:295).

In terms of publicizing the negative implications of energy resource development and of presenting a more balanced view of the effects of development, the Canadians have shown a higher degree of success than the U.S. and other nations. The controversial and exhaustive MacKenzie Valley Pipeline Inquiry conducted by Justice Thomas R. Berger identified a wide range of impacts that would potentially accompany pipeline construction in the Yukon and Northwest Territories. /2/ Health concerns included those cited in the passages below.

> Construction of the pipeline would increase and intensify the impacts that recent changes have already had on the health of the native people. Accidents during construction, and incidents in the camps would required medical attention; these cases and the requirements of in-migrants who are not directly employed on the pipeline would impose a severe strain on existing health services. The pipeline companies may be required to supply additional medical services to attend to both their own workers and those working on pipeline-related activities. There may be some difficulty in recruiting medical staff to handle a sudden influx of several thousand people... (Berger 1977, Vol.I:153).

> Construction of a pipeline in the cold and dark of winter, in isolated locations, for a 10- or 12-hour day, seven days a week, is very taxing on workers. The psychological effect on people working in such conditions can be extreme. Regular periods of rest and recreation at intervals that are frequent enough to ensure that psychological problems do not develop are essential; they are essential for safety reasons and for camp morale... (Berger 1977, Vol.II:54).

The National Energy Board of Canada also warned that native people in the Yukon would be particularly vulnerable to pipeline impacts, including the effects of sudden increases in disposable income; increasing separation of the wage earner from his family; and increased crime, family breakdown and alcohol abuse (National Energy Board 1977:S/212-217). The implications of these impacts on personal and community health are patently clear.

The Alaska Highway Pipeline Panel (Interdisciplinary Systems Ltd. 1978) prepared a series of booklets designed to inform residents of Yukon Territory and their governments about the range of issues raised by construction of the Yukon Territory segment of the Alcan natural gas pipeline. Each booklet describes problems associated with a particular issue, offers alternative means of dealing with each problem, and identifies the strengths and weaknesses of each alternative. Health-related concerns are the subjects of three booklets, entitled "Public Safety," "Public Health," and "Alcohol and Drug Abuse." Such a conscientious undertaking reflects the farsightedness of the Canadians in their planning efforts, which are as yet unparalleled in the U.S. Foothills (Yukon) Ltd., the contractor for this segment of the gas pipeline, funded the entire project.

Planning Considerations

The extent of U.S. involvement in addressing the socioeconomic impacts which accompany energy development is limited, for the most part, to federal reports. A 1978 report to the President on energy impact assistance, for example, identifies specific needs of energy-impacted communities: emergency health services, physician services to remote and medically underserved areas, drug and alcohol abuse programs, and social services under Title XX of the Social Security Act. The latter services can include a broad range of services to persons with incomes up to 115% of the State median income, such as family planning and counseling, child care and child abuse services, homemaker services, health services and transportation (Energy Impact Assistance Steering Group 1978:52).

Another report prepared in 1976 offers guidelines to local, regional, state and federal officials for effectively assessing, planning and managing the socioeconomic impacts of energy development. The report raises several questions which form the nucleus of appropriate health planning for such situations (Centaur Management Consultants 1976:120-121):

1) What are the demographic characteristics of the population, including that which will accompany the development?
2) What special health needs will be directly related to the development and who will take responsibility for meeting them?
3) What are the long-term projected health facility needs for the community or communities to be affected by the development?

The report also points out specific problems and service needs for energy impacted communities:

> ... Health care facilities and services must be of a range and quality to meet the health care needs of the population and also provide accessible, preventive, maintenance, mental and emergency services as well as any special services which may (be needed) during the project construction.
>
> Demand for mental health services may rise because of an influx of new residents with no established roots, family members who are unemployed, and an absence of recreation activities. Special services may include alcoholism and drug abuse treatment. These services will call for more specialized personnel and perhaps an outpatient facility. Such a center would be very useful for treating problems that do not require long-term treatment, yet can be managed immediately on a local outpatient basis (Centaur Management Consultants 1976:117).

To the best of my knowledge, a report prepared by a former staff member of the Upper Tanana Regional Council on Alcoholism (UTRCA) in Tok is the only document which gives consideration to pipeline-related health concerns of Upper Tanana communities. Eshbaugh (1978) projected a series of "pipeline era stress factors" which would directly affect UTRCA and the mental health and well-being of area residents. These "stress factors" include: rapid and intense change; crowding resulting from housing shortages; inflow of people with few skills and insufficient funds; inflation above the national average; over-worked and underpaid service agency personnel; outsiders poorly adapted to the Subarctic climate and rigorous work schedules imposed by pipeline employment; easy access to liquor; inadequate recreation facilities; waiting lines in businesses and agencies; and changing personal values and priorities resulting from pipeline wages. These "stress factors" will to some extent affect all community residents. It is imperative that plans of action for dealing with these and other issues be given immediate attention by planners in advance of pipeline construction activities in the Upper Tanana region. This is only possible if the project developer (Northwest Alaskan Pipeline Company) informs Upper Tanana communities of its proposed activities in as much detail and as soon as possible.

The active participation of Upper Tanana residents in the August 1978 public hearing in Tok (on the proposed environmental, technical and socio-economic stimulations for the gas pipeline project) attests to their concern for the impacts of gas pipeline construction on local communities. It is significant that socioeconomic issues are being addressed, for decision-makers have frequently assumed "that social impacts are minor or that human beings are infinitely adaptable" (Little 1978:64). This should not be construed as a panacea for the problems accompanying energy development, however, as Little states in no uncertain terms:

> ... The desires of rural residents are of little consequence for the decision-making machinery of government or industry. Isolated rural residents have too few votes and too little economic clout. The energy industry loves to display local community support for its planned projects, but nothing requires a company to discard a project just because a local community opposes it (Little 1978:85).

At best, rural communities can hope for cooperation from the developer so that comprehensive community planning can be well-established before the boom arrives. Such advance planning provides local residents with some protection of their preferred lifestyles and allows them to deal more effectively with the range of development-related issues (cf, Nellis 1974:237).

III

UPPER TANANA COMMUNITY PROFILES/1/

Seven Athapaskan villages and three predominantly Euroamerican towns in the greater Upper Tanana region and its periphery will be impacted by gas pipeline construction (see Table 1 for population figures for these communities). For illustrative purposes, the ten communities can be placed along a "maximum-minimum" impact continuum, with the location of each with respect to the pipeline corridor hypothetically indicating the extent to which each will be impacted by the pipeline. The placement of each village/town on this scale is based primarily on its proximity to the corridor, but population and community facilities have also been given consideration. Figure 4 depicts this continuum and identifies general types and levels of impact projected for each set of communities.

FIGURE 4. Hypothetical pipeline impact continuum for Upper Tanana communities

EXTENT OF IMPACT MAXIMUM → MINIMUM Community			
Athapaskan	Dot Lake Tanacross Northway	Tetlin Healy Lake	Mentasta Eagle Village
Euroamerican	Tok		Chicken Eagle City
Types of Impact	Family disruption _____/ Economic opportunities _____/ Resource exploitation _____/ Community disruption _____/		

Dot Lake, Tanacross and Northway are "highway villages" (located near the Alcan Highway), lie along or near the proposed pipeline corridor, and will be maximally impacted by development activities. Because of their isolation and inaccessibility by road, Tetlin and Healy Lake will be less directly affected, although their resources will be subject to intrusion and subsistence patterns

TABLE 1. Selected Census data for Upper Tanana Communities, 1930-1977. /1/

Community	1930 [2]	1940 [2]	1950 [3]	1957 [2]	1960 [3]	1970 [3]	1976 [4]	1977 [4]	NATIVE POPULATION, 1977 [4]
Dot Lake	-	-	-	?	56	42	244	266	44
Eagle City	?	?	?	?	?	36	80	?	?
Eagle Village	?	?	?	?	?	?	44	?	?
Total of Eagle City/Village	54	73	55	55	92	?	124	150	-
Healy Lake	?	?	?	?	?	?	42	?	?
Mentasta	?	?	?	?	?	?	152	152	72
Northway	?	?	196[5]	?	196	40[6]	353	378	221
Tanacross	80	135	137	111	102	84	119	128	121
Tetlin	?	66	73	92	122	114	110	107	105
Tok	-	-	109	?	129	214	709	735	88
TOTALS	?	?	?	?	?	?	1853	?	

1. Population figures for Chicken were not available.
2. Ray 1959:113, Table 16, derived from U.S. Bureau of the Census 1953.
3. Fairbanks Town and Village Association for Development, Inc. 1977.
4. Figures compiled by Division of Public Health, Department of Health and Social Service, Tok Office, on 12/31/76 and 12/31/1977.
5. Ray 1959, derived from U.S. Bureau of the Census 1953.
6. Naylor, Gooding and Scott 1976:9) indicate that the 1970 census takers counted only the Euroamerican community in Northway and overlooked the geographically-separate native village. They estimate the 1970 population of both communities to be 190 persons.

to disruption. Mentasta and Eagle Village, neither of which is in the Upper Tanana region prior nor of the same linguistic affiliation of the aforementioned villages, will be least impacted, in view of their distance from the corridor. Natives from most or all seven villages found employment on the Alyeska Pipeline project, but only Mentasta was situated near the Alyeska corridor (about 80 miles away).

Tok is the largest community in the Upper Tanana region and lies along the pipeline corridor. As the regional center for goods, services and governmental agencies, it stands to be the most heavily impacted of all communities--although its predominantly Euroamerican population may adjust more easily to the development activities. Chicken, a former gold rush boomtown in the late 1800's has been revived by mining activity stimulated by soaring gold prices in recent years. The community itself, some 80 miles north of the proposed corridor, will not be directly affected by construction, although some residents may seek employment on the project. Similarly, Eagle City, more than 160 miles from the corridor, faces minimal direct disruption from the pipeline.

The remainder of this chapter briefly describes seven of the communities identified above on which this study is focused. Mentasta, Chicken and Eagle City are not discussed further in this report. These brief glimpses are not intended as comprehensive community descriptions. Instead, the profiles depict each as small, yet viable components of the Upper Tanana region.

Dot Lake /2/

The small and predominantly native village of Dot Lake sets next to the Alcan Highway some fifty miles northwest of Tok. Although Athapaskans have traversed the surrounding region for many years, the village owes its existence to construction of the Alcan Highway in the 1940's, and was established in 1954. Extensive culture contact facilitated by the highway has expedited the acculturation process in Dot Lake, although traditional activities remain in force. The native-owned and operated Dot Lake Lodge is the lone business in the community and offers a wide range of services: lodging, restaurant, gas station, grocery store and post office. The Dot Lake Little Chapel, a non-denominational church holding weekly services, has been in the village since the late 1940's.

The Living Word Ministry, a Euroamerican religious community of approximately 200 persons, established itself in 1973-74 near Dot Lake. Its residents engage in agricultural activities on their land and strive toward self-sufficiency, although some members engage in wage employment outside the community. The Ministry operates its own elementary school, with high school students enrolling in correspondence study through the Correspondence Study Program Office in Tok.

Eagle Village/3/

European contacts with Athapaskan bands in the Upper Yukon River region in Eastern Alaska can be traced back to 1847, following the establishment of a Hudson's Bay Company trading post at Fort Yukon. Such interactions led to the development of permanent villages, among them Johnny Village, located at

or near the present site of Eagle Village, three miles upstream from Eagle City along the Yukon River. The small band of Han-speaking Athapaskans had previously resided in two locations near the current village, and another move corresponded to their semi-nomadic lifestyle--with subsistence based predominantly on salmon fishing and on hunting large game animals.

The Eagle Village Athapaskans are closely related to and speak the same dialect as the remnants of another band living at Dawson City, Yukon Territory. Interactions between these two communities are far more frequent than those between Eagle Village and the Upper Tanana villages, primarily because of the distance (Eagle Village is 180 miles northeast of Tok via the Alcan and Taylor Highways). However, they belong to the same native regional corporations (Doyon and Tanana Chiefs Conference) and school district (Alaska Gateway).

Eagle Village has an elementary and high school, while a church staffed by missionaries from Central Alaskan Missions is located in Eagle City. The only telephone in the village was installed in the Village Corporation building (which houses a small clinic) upon its completion in 1977. At this writing, the telephone is out of order and will probably remain out of service until next spring. Residents obtain their mail and numerous goods and services in Eagle City. They formerly hauled water from the well in Eagle City, but now this is done at the Village Corporation building. A predominant midsummer activity is salmon fishing in the Yukon River, for this remains an important food source. The village and Eagle City are accessible only by aircraft or overland during the winter months, as the 160+ mile-long Taylor Highway is not maintained for approximately half the year.

Healy Lake /4/

Healy Lake, the smallest and most secluded of all Upper Tanana villages, is located 65 air miles northwest of Tok and is accessible only by boat or float plane. The village enjoys a long history; extensive archaeological investigations have revealed evidence of human occupation there more than 10,000 years ago, and of Athapaskan occupation for at least 3,000 years. More recently, in the 1920's and 1930's, a trader operated out of Healy Lake, when the Tanana River served as the primary transportation route between Fairbanks and the Upper Tanana region.

The small permanent population of approximately a dozen persons relies on Fairbanks and Delta Junction for its goods and services, and receives its mail in nearby Dot Lake. The population increases during the summer months, when natives and Euroamericans who own property in or near the village seek temporary refuge from urban life and/or to engage in seasonal subsistence activities.

Northway /5/

Located fifty miles southeast of Tok and several miles from the Alcan Highway, the community of Northway actually consists of two separate settlements. One is a village inhabited by natives who formerly led a nomadic lifestyle in the surrounding region and resided in semi-permanent hunting and fishing camps; the other is a smaller, predominantly Euroamerican community located two miles away, consisting of a Federal Aviation Administration (FAA) complex and small business district. Northway is reportedly named after

Chief Walter Northway, who adopted the surname of an early day trader and freighter in the region.

The earliest settlement at Northway consisted of the native village and a trading post. This changed significantly during World War II, following construction of the Northway Army Airfield, one of a series of airfields along a staging route utilized for ferrying aircraft to Russia under the Lend-Lease Program. Today, this airport is the port of entry for small aircraft entering Alaska, boasts a 4300-foot paved runway, and offers round-the-clock charter flight services and intermittent but regularly scheduled commercial flights (Polar Airways). A wide range of other services available in the FAA community, including two grocery/retail stores, two service stations, one restaurant, one bar and a motel complex. Alaska State Troopers have an outpost there and a public school provides instruction for students through high school (the first senior class graduated last year).

The native village has a health clinic, laundromat and community hall, with residents obtaining goods and services in the FAA community or elsewhere. Church services are conducted periodically in the Pentecostal Holiness Church. As is the case with other highway villages, the Northway natives continue to pursue subsistence activities and to engage in other traditional practices.

Tanacross /6/

Tanacross, formerly referred to as Tanana Crossing, lies twelve miles northwest of Tok, near the south bank of the Tanana River. Its residents are primarily the descendants of natives who formerly occupied now abandoned villages in the Upper Tanana and Fortymile River regions.

A small military expedition passed through the Tanana and Tok River valleys in 1899 and observed numerous native camps along the way. This contingent probably passed near a site referred to as the "Crossing of the Tanana," where in 1900, Oscar and James Fish established a small post along their mail route from Valdez to Circle City. Soldiers engaged in construction of the WAMCATS telegraph line built another post nearby at "Tanana Crossing" which remained in operation from 1902 to 1920.

In 1912, Bishop Rowe established St. Timothy's Episcopal Mission at the site of the aforementioned posts, which had since been abandoned. Shortly thereafter, a trading post opened at the same location. Natives from nearby villages who hunted, fished and trapped in this region then began to make more frequent visits to the Mission, and some settled there on at least a seasonal basis.

The village of Tanacross remained somewhat isolated until the early 1970's, at which time twelve frame homes were built on the opposite bank and road-accessible side of the river. Public Health Service drilled a water well there and constructed a pumphouse and complete water distribution and sewage collection system. Fifteen additional homes constructed in 1976 were also connected to this system.

Today, a small post office operates in the village, and a laundromat is located in the pumphouse. The community hall is the scene of youth dances, meetings and various other activities. A much-needed village medical clinic

was recently built and includes an office for the UTRCA alcoholism counselor. In 1978, community residents initiated a proposal for opening an elementary school in the village (students now attend school in Tok), which was approved by the regional school board and the State Commissioner of the Department of Education. Construction is scheduled for the summer of 1979.

The Episcopal Mission remained a strong integrating element in the community until it closed in 1975. Although the minister left in 1967, laymen led regular services in the interim. Non-denominational services are now held in a small chapel near the village and occasional Episcopal services take place in the community hall. Tentative plans call for construction of an Episcopal Church in the village at a yet unspecified date. Thus far the land has been cleared and logs gathered.

Because of the village's proximity to Tok, employment opportunities are more readily accessible to Tanacross natives than to their counterparts in other villages. Despite this strong acculturative influence, the people of Tanacross continue their traditional practices and actively engage in seasonal subsistence activities.

Tetlin /7/

The village of Tetlin, located about twenty miles southeast of Tok, contrasts other villages in the Upper Tanana region in many respects. First, it is the only one that elected to retain a reservation status and not participate fully in the Alaska Native Claims Settlement Act of 1971. Tetlin was the only Upper Tanana village that had this choice, since it was the only Native Reserve, established by Executive Order in 1930. Second, it is accessible only by boat or aircraft (or by snow machine during the winter months). Finally, the people of Tetlin exhibit a more traditional lifestyle than their counterparts and rely more heavily on subsistence activities for their livelihood. This either reflects, or is a reflection of their relative isolation from the Alcan Highway and other communities.

Tetlin and the now abandoned village of Last Tetlin (located nine miles south of Tetlin) were seasonal campsites for natives pursuing seasonal subsistence activities in the territory surrounding Tetlin Lake for many years. Following the establishment of a trading post in Tetlin in 1912, the people began to congregate there more frequently, although their subsistence activities remained relatively unchanged and required regular movements to sources of fur and food. The original village was located on the opposite bank of the Tetlin River from where it now stands and, with the exception of a handful of cabins, was relocated to facilitate construction of an airstrip.

The village currently has a post office, grocery store, laundromat, community hall and Bureau of Indian Affairs elementary school. High school students generally complete their education at Mount Edgecumbe, a BIA school in southeastern Alaska. Mail is delivered twice weekly via aircraft from Tok. Episcopal and Pentecostal Holiness Churches have provided religious instruction over the years, although neither is operative at this time. Instead, visiting religious practitioners conduct periodical, non-denominational services in the community hall.

The potlatch remains an important traditional ceremonial activity throughout much of Athapaskan Alaska, and entails dancing, feasting and gift distribution to invited guests and village members. One of the more elaborate potlatches held in the Upper Tanana region in several years took place in Tetlin this summer. Those in attendance included local villagers and a contingent from Minto, located northeast of Fairbanks on the Lower Yukon River.

Some Tetlin residents obtain seasonal employment in the village, while others occasionally secure temporary jobs elsewhere. The village owns and operates the Fortymile Roadhouse, located at the junction of the Alcan and Taylor Highways. Most families spend considerable time in temporary camps varying distances from the village in pursuit of subsistence activities.

Tok /8/

Tok is a predominantly Euroamerican community situated at the junction of the Glenn and Alcan Highways, five miles southwest of the confluence of the Tok and Tanana Rivers. Although native people traversed the surrounding region for many years in pursuit of fur-bearing and large game animals, the community originated as a result of three highway construction projects--the Alcan Highway in 1942, a refurbishing of the Glenn Highway in 1949, and the Taylor Highway in the early 1950's. An Alcan Highway construction camp established at the site of the State Highway Department was the first settlement in Tok. In the mid-1940's, an NC Company store opened for business, and by the late 1940's, a small service station was built at the junction of the Alcan and Glenn Highways. The U.S. Customs and Immigration Offices were located across the street and remained in operation until relocating to a site nearer the Canadian border.

Today, Tok is the population center of the Upper Tanana region and is the first major settlement on the U.S. side of the Canadian border along the Alcan Highway. The community is referred to as the "Gateway to Alaska," perhaps because all highway travelers must pass through Tok in order to reach other communities in the State. Many State and federal government services/programs have their regional headquarters in Tok, and, in conjunction with the seasonal tourist industry, comprise the major economic mainstays of the community. However, the increasing number of private businesses now emerging to meet the needs of a growing population should not be overlooked for their important contributions to the local economy.

IV

METHODOLOGY

In view of the wide range of resources consulted, no single data collection procedure sufficed for this study. Thus I employed an "eclectic methodology," if you will, and utilized the technique(s) most appropriate in each situation. This typifies anthropological field research when the investigator intends to explore a variety of topics and to procure information from many different sources. In this chapter I describe each technique, in varying degrees of detail, and permit the reader to assess the methodology vis-a-vis the information presented in succeeding chapters.

(1) As is normally the case in anthropological fieldwork, participant-observation served as a primary research tool. Much can be learned simply by being an attentive onlooker and by attempting to gain a "feel" for the way of life in the study communities. Through participant-observation I had the opportunity to gain the confidence of community residents by showing them that I had more than a passing concern for their health needs and related problems. This aspect of my methodology is less apparent in the content of this report than it was in the actual data collection.

(2) I arranged interviews at the outset of the research period with health and related program personnel in Tok, for the purpose of explaining the objectives and scope of the study, and to solicit their input into its design. Although this procedure detracted from the already brief time allocated for field research, it enhanced the value of the study to Upper Tanana communities and contributed to its acceptance by Upper Tanana community agencies.

(3) Research projects already completed or currently in progress in the Upper Tanana region have occasionally compiled/sought information similar to that collected for this study. In order to avoid unnecessary replication and not contribute to the "we're being studied to death" syndrome, I exchanged information with other agencies whenever possible. I have undoubtedly received more assistance than I have offered in return, but hope that this report partially offsets the imbalance.

(4) Some key informants residing outside the Upper Tanana region provided information via telephone conversations or through correspondence, although I arranged personal interviews whenever possible.

(5) I initially planned to administer interview schedules to samples of adult Athapaskans in two Upper Tanana villages. The scope of these interviews was to resemble that of questionnaires utilized in a mail survey of Tok area residents (see #6 below). However, the characteristic reserved nature of many Athapaskans and the numerous surveys to which they have been subjected in

recent months prompted me to modify this method. In order to ensure cooperation from village leaders and residents, and to minimize my impact in the native communities, I elected to conduct less formal, unstructured interviews with opportunistic samples of adult villagers. Most interviews occurred in two villages and complemented information provided by other persons and agencies engaged in health-related research. My interactions with villagers on other occasions allowed me to obtain additional and equally valuable information. No attempt is made to quantify these data in this report.

To some extent, one can describe the health resources, problems and concerns in one village and generalize to others in the region. I exercise caution in doing this, however, since the villages do differ in numerous respects (e.g., population size, proximity to the Alcan Highway, reliance on subsistence activites, andaccessibility to medical facilities). Generally speaking, the villages share many concerns regarding their health problems and the potential disruptive impacts of future growth and development.

(6) Finally, I conducted a mail survey in the Tok community. Although I originally intended to conduct personal interviews with the predominantly Euroamerican population, time limitations prompted this alternative strategy. While the anonymity provided in a mail survey may encourage some respondents to reveal opinions and ideas which might go unstated in personal interviews, this is balanced by the potential for respondents to misinterpret questions or to simply skip those they find confusing or otherwise prefer not to answer. A brief pretest of the survey questionnaire in personal interviews disclosed several weaknesses in its design, but did not identify other questions that were interpreted in various ways by respondents. This, fortunately, was not a major problem with the questionnaire.

Questionnaires, a cover letter explaining the purpose of the project, and a self-addressed, stamped envelope were mailed to a random sample of post office boxes in Tok. This was the most efficient way of compiling a list of all or most adult residents in Tok from which a random sample could be derived. I initially compiled a list of all post office boxes currently in use and deleted those which I knew to be business addresses (the Postmistress was not permitted to divulge this information). Each remaining box number and five General Delivery addresses were assigned a number from 1 to 305. A total of 226 different numbers between 1 and 305 were recorded from a random number table (totalling 75% of all the post office boxes). Questionnaires were then addressed to "Boxholder, P.O. Box ____, Tok, AK 99780" and mailed to the 75% sample.

Because of the method employed for selecting the random sample, I cannot be certain that a cross-section of Tok residents is represented in the survey. Inherent in mail surveys is the opportunity for recipients to discard them for a variety of reasons, such as a dislike of surveys or disinterest in the present study. In at least one instance the unopened questionnaire was discarded as junk mail (perhaps attributable to the "Boxholder" designation in the address); another man said he did not complete the questionnaire because "it didn't give me a chance to say what I wanted to say" (in fact, ample space was provided and respondents were encouraged to enter their comments). Other questionnaires were inadvertantly mailed to business addresses and some discarded by persons who found the objectives of the study unclear. Finally, I suspect that some questionnaires reached persons who knew me from my previous

two summers' residence in the Upper Tanana region. They may have preferred not to divulge information to someone who could potentially identify them by the demographic data requested. A recent article identifies a range of factors which affect response rates to mailed questionnaires and suggests that some of the points mentioned above may have entered into my survey (see Heberlein and Baumgartner 1978).

For these reasons, those who responded to the mail survey may not be representative to the overall Tok population. However, the 22% who did return questionnaires varied considerably in their attitudes toward pipeline construction, medical service needs and the manner in which these needs should be met.

V

HEALTH SERVICES IN THE UPPER TANANA REGION

This chapter identifies and describes the health services currently available in the Upper Tanana region. I speak of "health services" in the broadest sense of the term, since programs are included which focus on planning and on services other than those provided by health care professionals. I have also included State and federal agencies which include the Upper Tanana region within their service areas, even though they are headquartered outside the region. The services described include those utilized by both natives and non-natives, although some are intended solely for native use or for specific subgroups within each population.

North Alaska Health Resources Association (NAHRA) /1/

For health planning purposes, the Upper Tanana region lies within the larger Northern Region of Alaska. NAHRA is the largest of three Health Systems Agencies (HSAs) in Alaska and covers more than one-half the State (320,996 square miles) from the Alaska Mountain Range north to the Arctic Ocean, and from the Canadian Border west to the Bering Sea. As mandated in the National Health Planning and Resources Development Act of 1974 (Public Law 93-641), NAHRA is assigned, by the State and the U.S. Department of Health, Education and Welfare, the tasks of (1) determining the major health problems in its catchment area; (2) inventorying existing resources for dealing with these problems; and (3) designing a plan for coordinating or developing services to meet future needs as efficiently as possible.

The Health Systems Plan developed by NAHRA is a statement of goals and actions agreed upon by the Board of Directors for achieving these goals during the next five years (1978-1982). In order of priority, the first six of eighteen health status goals stated in this plan are as follows:

A. A 10% reduction in the incidence of alcohol abuse and attendant health problems as measured by alcohol-related accidents, arrests, and social service contacts;

B. A reduction in the prevalence of alcoholism as measured by deaths due to alcoholism and cirrhosis of the liver, per capita consumption and alcohol related social service contacts;

C. A reduction in death and disabilities due to accidents over the next five years;

D. A reduction to zero by 1982 in the incidence of communicable diseases for which immunization capabilities are available, most notably diptheria, pertussis, rubella and rubeola. In addition,

no new cases of diseases should occur which are vaccine preventable-poliomyelitis, tetanus and typhoid fever;

E. A reduction by 10% in the incidence of new cases of chronic otitis media and its complications; and

F. A decrease in the number of all types of accidents.

In addition, the 10th and 11th goals respectively call for reductions in the prevalence of dysfunctional mental illness and dental disease. With the possible exception of goal D, the aforementioned health problems are significant concerns in the Upper Tanana region.

NAHRA is compiling a wide range of information regarding the health status of and health resources in its service area; patterns of utilization; and environmental and occupational exposure factors affecting immediate and long-term health conditions. One NAHRA staff member assumes responsibility for data acquisition and management as mandated in Public Law 93-641. All records and data on file, with few exceptions, are available to the public for inspection and for copying. As this data system is further developed, the Data Manager should be advised of health information compiled in the Upper Tanana region, so that it can be placed in NAHRA files for future reference. Similarly, Upper Tanana health planners should determine what information in NAHRA files can contribute to their planning activities.

Alaska Area Native Health Service (AANHS) /2/

AANHS is the central health care delivery system for Alaskan Natives and is reponsible for providing (either directly or indirectly) comprehensive health services to the 70,000 natives throughout the State. These services include prevention, treatment, rehabilitation and referral for specialized health care and dental services. AANHS consists of seven Service Units encompassing the entire State, with its major hospital, the Alaska Native Medical Center and headquarters being located in Anchorage. The medical center is a multipurpose facility serving as a referral hospital for natives residing anywhere in the State.

All Upper Tanana villages lie within the boundaries of the Anchorage Service Unit (ASU), excepting Eagle Village and Healy Lake, which are part of the Interior Alaska Service Unit (IASU, formerly Tanana Service Unit). Although natives are encouraged to utilize AANHS services within their Service Unit, they are eligible for care in any of the seven and actual utilization patterns are not always consistent with Service Unit boundaries. In response to my request for clarification of these patterns, one source indicated that "there really is no procedure for native health care. AANHS in Anchorage and Fairbanks haven't gotten together on a procedure." Thus, Upper Tanana natives seek direct AANHS care in either Fairbanks or Anchorage, their choice being dependent on a number of reasons. This practice creates some problems in record-keeping and potentially in service delivery, since patients' medical records are on file in their Service Unit facilities.

AANHS itinerant health care professionals make periodic visits to the Upper Tanana villages and provide a variety of routine and speciality services. The Tanana Valley Medical-Surgical Group has an Indian Health Service contract

with AANHS to serve natives and attend to their basic medical needs within the Tok Subregion (see below).

Tanana Chiefs Health Authority (TCHA) /3/

TCHA administers community health services to the Upper Tanana villages via contracts with AANHS. This authorization provides for Community Health Aides, emergency patient care, mental health, accident and injury control, dental care and outreach programs. These activities are monitored by the TCHA Health Board, comprised of representatives from each village. Although this Board is technically an advisory body, it carries a great deal of influence with regard to the planning and implementation of health programs in the area.

TCHA employs a Subregional Director in Tok whose primary duties are to administer TCHA activities and coordinate Tanana Chiefs Conference business in Upper Tanana villages. The Director periodically visits each village to monitor the activities of Community Health Aides, to identify problems which warrant the attention of TCHA and other service agencies, and to act as a patient advocate/intermediary in patient services. She informs villagers of scheduled visits by AANHS itinerant health care professionals and frequently accompanies them to the villages. The Subregional Director has been instrumental in compiling information to be incorporated into the TCHA Tribal Specific Health Plan (as mandated by the Indian Health Care Improvement Act, Public Law 94-437). Her attendance at State, regional and local health board meetings and workshops ensures that local concerns are not overlooked. Finally, she serves as an important information and referral resource on a wide range of concerns for village residents.

A Community Outreach Worker was employed in the Tok office in 1978. Her primary duty was to assist village residents with their day-to-day needs for medical and social assistance.

TCHA recently hired a Coordinator/Supervisor for Community Health Aides in the Tok Subregion. This position is designed for a licensed Registered Nurse having experience in emergency care in rural Alaska and who wishes to teach paraprofessionals. She will supervise and provide instruction to the Community Health Aides and travel regularly to the villages, under supervision of the Subregional Director and TCHA Village Health Services in Fairbanks. In addition, she will coordinate the dental program, provide some consumer education and serve as a liaison between village health services and other medical service providers.

Tok Community Clinic /4/

The Tok Community Clinic began in 1963 as a community project initiated by the Tok Lions Club and was housed in a State-owned building. Physicians and nurses from Central Alaskan Missions in Glennallen provided services in this clinic two days each month, until a physician moved his practice to Tok in 1967. Later that same year a Clinic Board was formed and began a fund raising campaign for a new clinic. Volunteers constructed the 30' x 40' building on land leased from the State (for 55 years, from 1969 to 2024), and it opened in August, 1970.

The aforementioned physician practiced in Tok until 1974, providing services to non-native and native patients (under AANHS contract); he then moved to Anchorage. Since that time medical services have been provided by a Physician Assistant (PA) through an arrangement with the Tanana Valley Medical-Surgical Group (TVMSG) in Fairbanks. The current PA began work in Tok in 1977 /5/ and is ably assisted by a Licensed Practical Nurse with emergency medical service training, who also takes charge of administrative and janitorial duties in the clinic. The PA is monitored by a physician preceptor from TVMSG who visits the clinic approximately every six weeks.

The clinic currently consists of a waiting room, office/examination room, examination/treatment room, x-ray room and a small pharmacy. The PA provides routine medical services, takes x-rays, and dispenses some prescription drugs. Laboratory specimens can be taken in the clinic but must be sent to Fairbanks for analysis. Cases requiring care from a physician or specialist are referred to TVMSG or AANHS for disposition. Speciality clinics are offered periodically in the linic or elsewhere in Tok. Emergency cases that are not evacuated directly to Fairbanks, Anchorage or Glennallen are treated in the clinic.

Relatively rapid population growth in the Tok area since 1970 has placed added strains on an already undersized clinic and limited equipment. In view of projected population growth in the future, the Tok Clinic Board applied for and received a direct Legislative appropriation from the State in 1978 for clinic expansion and for the purchase of new equipment. Tentative plans call for a 30' x 40' addition to house an emergency/x-ray room with ambulance entrance, a treatment/examination room, laboratory, a patient holding room and a "speciality services" office for use by visiting health care professionals. Purchase of an x-ray developer is also anticipated. This expansion will greatly enhance the clinic's medical capabilities, especially if additional personnel are hired to assist those already there.

Emergency Medical Services /6/

The Tok Ambulance Service (TAS) and the newly-formed Emergency Medical Services Council (EMSC) assume responsibility for providing emergency medical services in the Upper Tanana region. Until recently, the burden fell on two trained Emergency Medical Technicians (EMTs) and voluntary ambulance drivers, who responded to all reported fires, highway accidents and other calls for emergency assistance. However, more than a dozen Tok residents completed EMT training in 1978 and, following a probationary period of six months, will be authorized to respond to emergency calls.

The intent of the EMSC is threefold: (1) to provide ongoing training to EMTs, since there are relatively few emergency calls in the Upper Tanana region; (2) to remain abreast of the latest developments and techniques in emergency medical care; and (3) to develop schedules so that EMTs will be on call at all times. The Tok Ambulance Coordinator would also like the EMSC to develop a plan of action for multiple-person accidents and disasters, since such a strategy is not currently available.

Availability of adequate emergency medical services in Tok will be essential during pipeline construction and as highway use in the region increases. Population growth and energy development increase the probability of numerous and frequent automobile and industrial accidents, and alcohol-

or violence-related injuries. Neither the TAS nor the EMSC is presently prepared to meet this increase, but both are actively attempting to upgrade their service capabilities.

Several problems can be identified. First, TAS has only one ambulance for responding to calls in an extremely widespread geographic region. An emergency call to one end of the region leaves the remainder of the area unequipped for emergency ambulance evacuation. The ambulance responds to the emergency scene and transports the victim(s) to the Tok Community Clinic for preliminary workup, but leaves evacuation to facilities in Fairbanks to the local air charter service (at $240, the cost of a round trip air charter to Fairbanks from Tanacross/Tok is almost half the $450 ambulance charge for the same trip and much faster). TAS hopes to obtain a second ambulance, station one vehicle in an outlying community, and thereby improve its capabilities of responding to emergencies.

The EMSC is also attempting to secure funding for a radio communications system (transmitter and paging devices), so that the EMTs can more promptly be advised of emergency situations. Funds for such equipment is reportedly available through the State. Once this system is operable, the EMSC would like to have one ambulance driver and two EMTs on call at all times.

Emergency service capabilities are bolstered by the availability of extrication equipment, used for freeing accident victims trapped in vehicles. Whether this equipment is sufficient for use on large trucks or when flammable materials have been spilled at the accident scene--probable occurrences during pipeline construction--will have to be ascertained and deficiencies eliminated, hopefully with assistance from Northwest Alaskan Pipeline Company.

The relatively infrequent occurrence of medical emergencies in the Upper Tanana region poses some problems for the EMTs, since their skills can become "rusty" through disuse. EMSC training activities will hopefully enable the EMTs to remain effective in responding to emergency situations, which will undoubtedly increase in number during pipeline construction.

State of Alaska, Itinerant Public Health Nurse (PHN) /7/

An Itinerant PHN employed by the State Department of Health and Social Services is stationed in Tok and provides services to native and non-native residents of the Upper Tanana region. Her primary responsibilities focus on the provision of preventive services, including immunizations, school screenings and physical examinations. The PHN also conducts well-child, family planning and maternal health clinics, both in her office and in the five villages in the region (where she is assisted by Community Health Aides). Her actual involvement in health-related activities is far more extensive, as she serves on local health boards and on the seven-member Manpower and Training Committee of the State Emergency Medical Service Advisory Council. Because of her long-term residence in Tok and her strong commitment to her work, the PHN is well respected for her contributions to health care in the Upper Tanana region.

State of Alaska, Division of Social Services /8/

A Social Worker was recently hired to fill the vacant Social Services position in the Tok District, largely in view of pending pipeline impact and a marked increase in child protection cases throughout the region. The Social Worker is legally empowered to intervene in child neglect/abuse cases among both the native and non-native population. If the caseload increase continues during pipeline construction, the Social Worker hopes that Tok area needs are made known to the State Legislature and appropriate measures taken to remedy the situation.

A present emphasis of the Social Services program is on locating foster homes in which to place children from broken families. In response to the demand for native families willing to adopt children, the Division of Social Services is attempting to increase the number of Tok area native families eligible for the adoption program. Finally, the Social Worker is strongly committed to identifying ways for community agencies to more closely coordinate their activities which impinge upon the health and social well-being of Upper Tanana residents.

In the past, the Social Worker also administered the State of Alaska Public Assistance Program in the Tok region (i.e., food stamps, Aid for Dependent Children, and Medicaid). These services are currently provided by fee agents in Tok and neighboring villages. The fee agent in Tok is also a part-time employee in the Upper Tanana Development Corporation office. This permits that office to schedule appointments for the fee agent in her absence.

Community Health Aides (CHAs) /9/

Five of the six villages in the Upper Tanana region employ CHAs, who serve as the first contact point for entry into the native health care system. The sixth village has an alternate CHA, who works on an "emergency only" basis because of the small population residing in that village. The CHA program is an outgrowth of a U.S. Public Health Service program initiated in 1955 to provide home treatment to tuberculosis patients, rather than isolate them in hospitals far from their homes for extended periods. Persons trained to care for these patients and to administer their medications became the first health aides. In 1968, Public Health Service developed the CHA program to train health aides and established them in salaried position in the villages. Villages with 25 or more residents are eligible to have one CHA and those with 200 or more persons can have either two CHAs or additional clinic facilities.

TCHA administers the CHA program in the Upper Tanana region. Each Village Council is empowered to hire and fire CHAs and provides day-to-day supervision. A Village Council member signs the CHA's timesheets before they are sent to TCHA and salaries disbursed. A CHA should be 19 years of age or older, have the ability to read and write, plan to remain in the village, and be in good health. She should have a good relationship with most village residents and be conscientious about dealing with personal and confidential information.

The CHA Supervisor monitors the activities of 29 CHAs throughout the TCHA region. She is required to visit each village at least once a year and to evaluate the functioning of each village clinic. The Supervisor also main-

tains records on the training of each health aide, examines their patient logs, and listens to radio communications between the CHAs and AANHS hospitals. She also teaches and assists the CHAs during her village visits and at regional and subregional workshops.

CHAs from the Upper Tanana region undergo training at the Alaska Native Medical Center in Anchorage and are encouraged to attend at least three training sessions (totaling ten weeks) during their first year. A well-trained CHA can perform the following health services:

1) Episodic care, including evaluation and treatment of minor illnesses and injuries, and assisting physicians, dentists and the PHN on their field trips to the village;

2) Health surveillance, including monitoring patients on medications; taking temperatures, blood pressures, urinalyses, and making hemoglobin checks;

3) Preventive health care, including prenatal and well-child evaluations, examinations and immunizations for school children, fluoride treatments, and coordination of community health education;

4) Maintenance of a community clinic, community health records, and medicines and supplies; and

5) Technical and administrative assistance designed to ensure that adequate health services are available.

According to TCHA's Health Aide Supervisor, a State Public Health Nurse (PHN) supervises the CHA during her on-the-job training period. /10/ TCHA also arranges special workshops designed to teach CHAs to deal with special medical problems. In 1976, for example, workshops focused on chest conditions and medical emergencies.

In their work, CHAs refer to a manual entitled Guidelines for Primary Health Care in Rural Alaska, prepared by AANHS. The CHA is usually the first person to see a patient in the village, whether for a routine illness, accident, injury, or emergency. She makes arrangements for evacuation of patients to local or regional facilities in emergency cases and when she is unable to provide the necessary treatment. The CHA has medications for minor illnesses, infections, and other routine problems which could become serious if left untreated. The CHAs in the Upper Tanana region were scheduled to have their clinics open six hours per day for 261 days during the 1977-78 fiscal year.

Most villages also have an alternate CHA, who works when the regular CHA is attending training sessions or is on annual/sick leave. Alternate CHAs may not have as extensive training as their counterparts, but they are encouraged to attend homemaker and other sub-regional training programs, and to work with visiting health providers when they travel to the villages. All health aides are encouraged to attent at least one training session a year.

The above description of the CHA program excludes discussion of several problems associated with the functioning of CHAs in the villages. In view of my incomplete understanding of the political process involved in the hiring and firing of CHAs, and of the CHAs' actual strengths and weaknesses as health care providers, I must limit further discussion to brief mention of this situation in Chapter 6. However, if pipeline construction and associated activities increase the CHAs' caseloads and present them with new and more complex problems, certain modifications in the current village health programs may be in order.

Upper Tanana Development Corporation (UTDC) /11/

UTDC was formed in 1975 as one of twelve non-profit regional development corporations comprising Rural Alaska Community Action Programs (Rural CAP). UTDC's primary purpose is to promote the overall economic, social and educational development of people in the Upper Tanana region. The primary target groups are the low-income, elderly (over 60) and native peoples. Current programs are aimed primarily at the elderly and include a hot lunch program and transportation, homemaker, and information and referral services. These programs are funded through the State Office on Aging under Titles III and VII of the Older Americans Act.

Since October 1977, UTDC has assumed an advocacy role with regard to the gas pipeline project. The agency has emphasized "awareness development" through (1) sponsorship of meetings with pipeline officials, (2) the April 1978 Forum on Gas Pipeline Impact, and (3) on August 1978 hearing in Tok on proposed terms and conditions to be included in the right-of-way agreement between the State of Alaska and the project developers. This has become a formalized program, since pipeline impact carries important implications for UTDC's target groups and for the regions population at large.

Just as the hot lunch program promotes the health and well-being of senior citizens, pipeline advocacy can serve a similar role for others in this region. By creating an awareness of the social impacts of pipeline-related activities and actively promoting advance planning, UTDC will contribute to more desirable community development--which implies a reduction in impacts not conducive to optimal physical and mental health.

Upper Tanana Regional Council on Alcoholism (UTRCA) /12/

Established in Tok in 1973, UTRCA has as its primary objective the reduction of alcohol and other drug abuse problems in the Upper Tanana region. The agency pursues this goal through preventive measures (outreach counseling, recreation and school programs), diversion of substance abusers from the criminal justice system, and referral and coordination. UTRCA strives to constantly upgrade its services in order to comply with State and federal regulations.

The Director of UTRCA monitors the activities of five outreach counselors (one in Tok and four in outlying villages), a court liaison, and programs at the community recreation center. Native counselors, whose educational requirements have been lifted under a "grandfather clause" of alcohol program regulations, are normally long-time residents of the villages in which they serve. This is believed to enhance their sensitivity to the dynamics of alcohol/drug

misuse in the rapidly changing village settings. Experience such as this is complemented by periodic training sessions and workshops. The Tok counselor assumes the added responsibility for conducting monthly educational courses in local schools.

The Tok Recreation Center, a UTRCA project, opened in 1977 and has become an alternative source of social and recreational activities for teenagers and others who might otherwise "buy a bottle" or entertain themselves in local taverns. Activities at the Center include movies, pool, pinball machines, and occasional social activities. Community meetings and other functions are also held intermittently in the Center.

The Criminal Justice Diversion Project began in 1977, with the hiring of a court liaison, who established and maintained contact with village counselors, clients, the court system and other regional agencies. The court liaison serves as an information resource for individuals and families who are involved in court cases, generally for alcohol-related reasons. A key concern is for having problem drinkers seek sociomedical treatment for their problem, whether on a voluntary or mandatory basis, in lieu of imprisonment.

In accordance with funding source regulations, UTRCA has assigned data coordination duties to one staff member. This entails the maintenance of non-substantive records of services rendered per client on standardized Native American Alcoholism Program forms. UTRCA hopes to assign this responsibility to a new staff member, if and when funding can be procured.

One assessment of UTRCA is that additional funding would enhance its potentially vital role in mitigating alcohol/drug problems in the Upper Tanana region. However, some individuals maintain that the agency is ineffective and contributes little to the resolution of alcohol and other drug misuse. If that is the case, a major revamping of UTRCA and its services is in order prior to the approaching economic boom, at which time the demand for alcohol counseling services will undoubtedly increase.

United Crow Band (UCB)

UCB is a social service agency operating under contract with the Bureau of Indian Affairs. More specifically, UCB subcontracts from Tanana Chiefs Conference, which contracts for the entire region served by TCHA. Village Council leaders from local villages serve on an Executive Board and monitor the activities of UCB and its Director--which focus on social services, employment counseling, activities at the Tok Recreation Center, and information and referral. The Director supervises a staff consisting primarily of CETA employees.

The fact that the current Director is a native should enhance her role in UCB activities, but she is severely limited on two counts. First, she is not legally empowered to intervene in domestic cases; and second, the Executive Board must approve all the Director's travel--even to local villages. These restrictions significantly reduce the potential effectiveness of this agency, although UCB is defining new activities for which it can take charge. Nonetheless, village residents must normally come to UCB to utilize its services. With more latitude, UCB could assume a key role in preparing native people for pipeline impact in the Upper Tanana region.

Conclusion

Some Upper Tanana residents content that, with few exceptions, future health service needs can be met by building on existing programs, instead of introducing new services and contributing to the already minimal interchange between service agencies. To some extent, each local agency appears to be staking claim to particular segments of the population and exhibiting more concern for validating its programs than for dealing with health issues. While some agencies are seriously understaffed, others may be doing far less with their manpower than is possible. Agency personnel would be well advised to learn more about their counterparts' activities, avoid service duplication when possible and improve their system of referral within the local community.

At one level, the Upper Tanana region is fortunate to have its current range of medical and social services, despite the various problems in and limitations of these services. Unless they promptly assess their strengths, weaknesses, needs and deficiencies, however, existing services may find themselves hopelessly entangled in the confusion accompanying gas pipeline construction--a situation the community can ill-afford. To this end, I strongly encourage local agencies/services to develop open lines of communication with the State Pipeline Coordinator's Office and Northwest Alaskan Pipeline Company. The initial step in this process is for heads of community agencies/services to reestablish their monthly meetings and develop a strong foundation for dealing with pipeline and other pressing issues.

VI

ATHAPASKAN HEALTH AND MEDICAL CARE: PAST AND PRESENT

Historical Perspective

Athapaskan Indians traversed the Eastern Interior region of Alaska for many years before the arrival of European explorers. The ancestors of these Northern subarctic Indians are believed to have crossed over the Bering Strait from Siberia around 10,000 B.C., with some groups continuing their trek into what are now the Northwestern and Southwestern regions of the continental United States. By 8,000 to 6,000 B.C., those remaining in Alaska had adapted to a subarctic forest environment in the interior not unlike the one in which they currently reside (VanStone 1974:5). Athapaskan groups referred to as the Tanana, Upper Tanana, Han, Kutchin and Ahtna have most recently resided in the Upper Tanana region and its periphery.

The ancestors of these contemporary Athapaskans were a semi-nomadic hunting and gathering people, and based their subsistence on a variety of plant, animal and marine resources. As is normally the case in hunting and gathering cultures, the Athapaskans established an intimate relationship with all aspects of their environment, a coexistence reflected in all aspects of culture and most notably in their religious system. Traditional religious practitioners, or shamans, had among their numerous duties the treatment and prevention of disease, which was thought to be caused by the intrusion of an invisible spirit or tangible object into the body of an often unsuspecting victim. By drawing upon his or her special powers, or "medicine" derived from animal spirits, the shaman attempted to frighten away the malevolent spirits through conversations with the spirit world (preventive medicine) or to extract the intrusive object from the patient's body (curative medicine). The treatment process was normally administered in ritualistic fashion with members of the patient's family in attendance (Haynes 1977:61; VanStone 1974: 67-69).

Not all diseases and medical conditions, however, were attributable to evil spirits, nor were they always treated within the realm of shamanism. Instead, the Athapaskans also employed their detailed knowledge of plants and herbs for treating specific maladies. For example, an Upper Tanana women from the Healy Lake region recalled the use of melted spruce pitch for treating boils or cuts received while cleaning fish (Anderson 1956:20). A physician stationed at a military base near Eagle Village in 1906-1908 recorded these treatments in the village for a disease that "comes of itself":

> .... If they have a cough they chew grass roots or spruce bark to stop the illness, and sometimes the old women boil bark, roots, and brush to make tea, which is drunk for all forms of illness....(Schmitter 1910:19).

The anthropologist Robert McKennan conducted field research in the Upper Tanana region in 1929-1930, before the Athapaskans there had been in constant contact with Europeans. He recorded several traditional practices in addition to shamanism which remained in use at that time. Among these were bloodletting, for relieving aches and pains; herbal remedies, ingested for colds, internal ailments and toothaches; and liniments derived from the internal organs of small animals, applied to the body for rheumatism (McKennan 1959:108-109).

Despite their possession of a relatively sophisticated medical kit for dealing with many traditional maladies, the Athapaskans were utterly defenseless against the epidemic diseases introduced by European explorers and entrepeneurs. Generally speaking, Athapaskans in Eastern Alaska and Western Canada believed that they suffered very little sickness before European contact (McClellan 1975:223; McKennan 1959:107; Schmitter 1910:6). This is undoubtedly an overstatement in one sense, but quite accurate if traditional illnesses are compared to the ravaging diseases introduced by Europeans--to which all lacked natural immunity and countless numbers fell victim.

The Interior Athapaskans may have suffered from European - introduced diseases before they had actually been in contact with traders and explorers. Guedon (1974:10) refers to a scarlet fever epidemic occurring around 1863 in Interior Alaska, which probably arrived there from the Upper Yukon River in Canada, where an outbreak occurred in 1851 (McKennan 1959:19). This appears to be the first recorded outbreak of infectious disease in Eastern Interior Alaska (Haynes 1978:6). By 1885, one observer had noted signs of tuberculosis among many Athapaskans camped near the present-day village of Tanacross, while a second onlooker in a camp at Last Tetlin in 1890 learned of an unspecified epidemic a few years earlier which had claimed many lives (cited in Guedon 1974:10). Schmitter (1910:6) found widespread evidence of tuberculosis in Eagle Village during his visits there, and McKennan (1959:107) found similar circumstances in Upper Tanana villages in 1929-1930. I could cite additional examples but these sufficiently illustrate the devastating effects of European-introduced diseases on the Upper Tanana Athapaskans--a distressing scene repeated all too often elsewhere in Alaska and throughout North America.

The Contemporary Scene

Although they remain far from optimal, health conditions have vastly improved in the Upper Tanana villages in the past two decades. A massive campaign by Indian Health Service has brought tuberculosis under control, although many teenage and adult natives in the region have it in an inactive stage; a sudden change in their personal environment or general health (e.g., pneumonia or poor diet) could pose a threat to their well-being. Otitis media ("draining ear") and impetigo occur with such regularity among native children that one health care professional indicated that "the parents accept them as facts of life" (Haynes 1978:10).

By far the most serious health problems today are those which can be referred to as "diseases of transition" (Fortuine 1975:3-7). These can be traced to culture changes resulting from European contact and include alcoholism, dental decay, nutritional deficiencies and psychosocial problems. A final category and perhaps the most serious problem throughout Alaska embraces accidents, which include alcohol-related vehicle mishaps and violence-related injuries; the remainder relate directly to the rigors of life

and hazards of employment in rural Alaska.

Village Health Concerns

In order to assess the medical service needs and to identify the concerns of village residents in the Upper Tanana region, I have drawn upon information collected from two primary sources: (1) informal interviews with village adults; and (2) information supplied by health professionals, and by officials at Tanana Chiefs Health Authority (TCHA) and North Alaska Health Resources Association (NAHRA) in Fairbanks. To a lesser extent I have relied on personal observations, on casual conversations with community residents, and on my previous academic and field research experiences involving Native American health issues.

I have elected to identify by name neither the villages in which my visits were most extensive nor the individuals who participated in this study. I gained the confidence of most informants by preserving their anonymity, and in some cases by not even asking for their names. This discussion will exclude from consideration the village of Mentasta, since it lies outside the TCHA catchment area. Although natives from Mentasta often utilize medical services in Tok, their overall health resource utilization patterns differ to some extent from those of natives in Healy Lake, Dot Lake, Tanacross, Northway, Tetlin and Eagle. It is probable, however, that similar problems exist in all seven villages. Finally, since health problems and concerns in the six TCHS villages exhibit striking similarities, I will distinguish between Highway Villages (Dot Lake, Tanacross and Northway) and Remote Villages (Healy Lake, Tetlin and Eagle) only when such differentiation is meaningful to the discussion.

Tables 2 and 3 identify the ten leading causes for inpatient and outpatient visits by Upper Tanana natives to Alaska Area Native Health Service (AANHS) or to contract care facilities during fiscal years 1974-75, 1975-76 and 1976-77. While considerable underreporting and utilization of services outside AANHS limit the reliability of these figures, they do illustrate general categories of health problems in the region. Most significant in both Tables are the high incidence of mental disorders, respiratory illnesses and accidents/poisoning/violence cases. These reflect the problems resulting from European contact which have intensified in the course of rapid culture change in recent years. These problems are, of course, not restricted to the native population and are common throughout Alaska--in part because of the variety of health hazards associated with life in the North.

At the village level, local residents indicated that the most common health problems included colds, influenza, accidents and routine aches and pains. Dental problems and alcohol abuse formed a prominent category for which informants expressed most concern--because they are being poorly treated, if at all, at the village level. One man cited broken glass, stray dogs and "people always rushin' around" as key health problems in his village; another expressed extreme concern about the health hazard created by a faulty sewer system in his community.

I observed many cases of reported "sinus problems" among native females during the course of village visits, but was not in a position to determine either the exact symptomatology or severity of these problems. It is possible

TABLE 2. Ten leading causes of inpatient visits to AANHS and contract care facilities by natives from Tok Subregion, during fiscal years 1974-75, 1975-76, and 1976-77.*

Diagnosis	Total	Direct care at AANHS facility	Contract
Pregnancy, Childbirth and Puerperium	42	26	16
Accidents, Poisoning and Voilence	22	9	13
Mental Disorders	18	4	14
Diseases of Respiratory System	15	7	8
Diseases of Blood and Blood-forming Tissue	14	2	12
Diseases of Circulatory System	10	3	7
Diseases of Female Genitalia and Breasts	6	3	3
Diseases of the Ear	5	4	1
Diseases of Digestive System	5	3	2
Ill-defined Symptoms**	15	6	9
Supplemental Activities**	34	31	3

*Figures provided by Tanana Chiefs Health Authority and are derived from Indian Health Service Inpatient/Outpatient Reporting System, APC Report 2C.

**Not included in ranking and not identified in more specific terms.

TABLE 3. Ten leading causes of outpatient visits to AANHS and contract care facilities by natives from Tok Subregion, during fiscal years 1974-75, 1975-76, and 1976-77*.

Diagnosis	Total	Direct care at AANHS facility	Contract
Diseases of Respiratory System	403	311	92
Accidents, Poisoning and Violence	272	204	68
Diseases of Skin and Subcutaneous Tissue	230	205	25
Mental Disorders	196	171	25
Diseases of Musculoskeletal System and Connective Tissue	168	142	26
Diseases of Circulatory System	167	155	22
Pregnancy, Childbith and Puerperium	157	146	9
Diseases of Female Genitalia and Breasts	151	137	14
Diseases of the Ear	150	135	15
Diseases of the Eye	145	131	14
Ill-defined Symptoms**	265	233	22
Supplemental Activities**	756	727	29

*Figures provided by Tanana Chiefs Health Authority and are derived from Indian Health Service Inpatient/Outpatient Reporting System, APC Report 2C.

**Not included in ranking and not identified in more specific terms.

that the unusually cold and wet summer contributed to increased incidence of such illnesses; one might also hypothesize that the "sinus problems" are stress-induced and thus related to a variety of factors. For example, high unemployment levels plagued the Upper Tanana region this summer, owing to the completion of the Alyeska Oil Pipeline, minimal construction activity in the area, and an unusually low occurrence of forest fires throughout the State (many village residents normally derive a substantial portion of their cash income through employment as firefighters with the Bureau of Land Management). Furthermore, many residents are expressing concern about the impacts that gas pipeline construction will have on their subsistence resources, and the uncertainties are a cause of anxiety. Finally, accidents in the region claimed the lives of several local residents during the spring and summer months; such tragic deaths often become personal losses for many residents of small communities, whether or not they were related to the victims. One can easily see the implications of any one or a combination of these factors for the mental well-being of village residents, although I am hesitant to draw conclusions based on speculation.

It is somewhat of a paradox that many village residents look forward to the gas pipeline, because of the employment opportunities which will be available to them--but they look with dismay at the attendant problems of such development. No one can say with certainty what the implications of pipeline construction will be with respect to native resources and subsistence activities, but villagers' experiences with the Alyeska project demonstrated that the sudden affluence created by pipeline wages can create many problems. Foremost among these is increased alcohol consumption, already a serious phenomenon throughout the Upper Tanana region. Alcohol misuse correlates closely to family disruption, violence, auto accidents, nutritional problems, and is a contributing factor to respiratory illnesses. In the view of one informant, "when the people have money, it is no good." Perhaps with adequate planning, the severity of such problems can be reduced.

Village health services are limited to those provided by Community Health Aides (CHAs), monthly visits by the Public Health Nurse (PHN)/stationed in Tok, and by intermittent visits from AANHS health care professionals. Informants expressed satisfaction in having these services available, but pointed out their limitations: CHAs can deal only with minor problems; the PHN, who is admired throughout the villages, is rarely able to treat all the patients seeking assistance; and the itinerant visits by AANHS personnel are far too infrequent. Informants residing in Remote Villages voiced more concern about the inadequacy of these services than did their counterparts in Highway Villages. The latter enjoy easier access to services in Tok and elsewhere, while the former incur heavy expenses in both time and money if they desire treatment outside the village. One result of this disparity is for residents of Remote Villages to either postpone health-seeking behavior until a severe problem develops or to "hope" that the illness passes.

Even within the native villages, some persons appear to have easier access than others to the CHAs. Since CHAs are selected by Village Councils, the opportunity exists for political influence to enter into this process. For this and other reasons, some individuals and/or family groups may be at odds with the CHA and/or her family group. Consequently, some informants accused the village CHA of "being unfriendly" or "not being available when you need her." Speaking in her own defense, one CHA pointed out,

We do the best we can but they (village residents) just complain, complain. They always come around after clinic hours. They come around at 9:00 or 10:00 at night for aspirin. I don't think that's right. I have my own work to do, too, you know.

This type of problem persists in other Native American communities as well, and perhaps cross-culturally. Indian Health Service physicians on one Plains Indian reservation complained to me that people frequently came into the hospital after regular hours with "routine problems" (in their point of view). For the patient, however, the problem warranted immediate attention, even though the symptoms may have persisted for several days. The conflict here, and perhaps in the Upper Tanana villages, is between perceptions of what comprises "routine" and "emergency" problems. In the Plains Indian reservation hospital case cited above, the patients defined their problems as requiring immediate attention, and since the hospital and physician were there, they fully intended to make use of those resources (Haynes 1974).

Most informants agreed that elderly village residents have benefited from the nutritional and transportation services provided by Upper Tanana Development Corporation (UTDC), yet minor and often subtle conflicts have occasionally arisen between some village residents and program personnel. As a result, not all senior citizens participate in these programs. At another level, UTDC village homemaker services have been well-received, since the homemaker's role is to assist needy seniors with their household chores. Common complaints include charges that the homemaker "doesn't spend enough time helping me," "she doesn't help anybody very much," or "she never comes around when you need her." Once again, the potential exists for individual or family conflicts to enter into the picture, although the complaints noted are sometimes valid. Since the goal has been to prevent premature institutionalization (i.e., taking the seniors far from their homes, families and friends), the homemaker program was designed to assist seniors with those chores they were unable to do themselves. Monitoring the program to keep it operating efficiently and productively, however, is not an easy matter.

Village residents have occasionally been hired to supply firewood and water for those seniors unable to attend to these daily needs during the winter months. While acknowledging the positive contributions of this service and the homemaker services, I believe they may be contributory factors to the declining traditional kinship practices. As an illustration, one man said that he did not mind cutting wood and carrying water for his in-laws during the winter months, but he became very upset when another village resident was hired to do the same tasks. At the same time a service is beneficial, by providing wage employment for a village resident, it also creates a dependency relationship between villagers and outside agencies. Although such services are designed as aids to those persons who have no alternative forms of assistance, other village residents may view this as an opportunity to have someone else do their work for them. Agencies must continually remain cognizant of the fact that their well-intended programs may foster dependency relationships, and interfere with traditional kinship and social responsibilities.

Some seniors have encountered problems when they traveled to Anchorage or Fairbanks for AANHS medical services. One woman related her experience upon arriving in the Anchorage airport for the first time in her life. No one had remembered to tell her how to get from the airport to AANHS--or if

they had, it was done ineffectively. Since seniors are the least acculturated of the Upper Tanana native peoples, TCHS and other local agencies should make special efforts to provide the appropriate logistical planning for them. Younger family members, too, must share in this responsibility.

A primary concern, especially in the Remote Villages, is the perceived inadequacy of emergency medical services. Most residents can recall at least one instance in which, in their view, a villager died because of reported delays in evacuating the victim to appropriate medical facilities. Whether any of the persons in specific cases mentioned to me could have survived if more immediate evacuation procedures had been implemented is open to speculation, but the possibility does exist, despite the remoteness of most Upper Tanana communities from full-service medical facilities.

Emergency medical evacuation from the villages to outside medical institutions requires several procedures. First, the CHA must contact either AANHS or the Physician Assistant in Tok, describe the patient's condition and request authorization for air evacuation. If the situation warrants emergency evacuation, then one of three air charter services is immediately notified (in Tanacross, Eagle or Northway), and evacuation procedures implemented. At issue here is whether the CHA should be authorized to directly request air evacuation and save what might be precious minutes. The screening procedure apparently resulted from the misuse of services by persons not having an "emergency" problem and because of the CHAs' "inability" to correctly distinguish "emergency" from "non-emergency" cases (due to inadequate training). I asked one TCHA official about cases that were unmistakably life-or-death situations.

> When it has been a life-and-death situation, the procedure has been modified. The Health Aides have been instructed to go through channels. We have told them to use their own judgment (and directly request air evacuation) but they are sometimes reluctant to do it.

One EMT indicated that, in his experience, ANHS has given authorization retroactively in "true" emergencies. In such cases, someone has requested authorization after the patient and attendant(s) have departed.

The Remote Villages, in particular, could benefit by having trained Emergency Medical Technicians (EMTs) in residence. Emergency cases could then be responded to promptly while awaiting air evacuation--this is assuming, of course, that prevailing weather conditions permit the aircraft to travel. Could EMT training be provided to village residents? A TCHA employee remarked:

> That's being kicked around now as part of the Tribal Health Plan... We're looking at ways of having EMT, CPR and Red Cross training in the villages. EMT training has been offered in the villages and it always gets down to the availability of money. Our idea was to encourage the Health Aides to take the training or encourage others to do it. They could lend support to the Health Aides in times of emergency. You have to remember, though, that there must be interest and motivation by the people in getting the training.

Informants feared that pipeline construction might compound existing problems in obtaining both routine and emergency medical services. Most would like to see a doctor, dentist and hospital in Tok, and believe that current and future population growth warrants the development of such services. One man called for an arrangement "like they've got in Glennallen" (see p. 65). The region could possibly support a physican and dentist, since they could realize a significant portion of their incomes from AANHS contract services, but the costs of constructing and operating even a small hospital are far beyond the capabilities of the Upper Tanana population. Whether a "field hospital" designed specifically for short-term and emergency use would be acceptable is unclear. It is a possible alternative during the pipeline construction period. A more reasonable request might be for the Tok Community Clinic to have a staff member at the clinic at all times, especially during the pipeline construction period. If so, this responsibility should be shared by at least two qualified health care professionals.

Village residents would also like to see a detoxification center and improved alcoholic treatment services in Tok. No one suggested how such a facility should be designed and operated, but villagers expressed dissatisfaction with the current alcoholism program and with lay counselors having limited formal training who work in the villages. At one time, Tok had a detoxification center, at which people could "sleep it off" after a night of drinking. Abuses of this service possibly led to its closing, as indicated by persons who found the center a "convenient" place to stay.

Although Upper Tanana natives are not charged for medical and dental services provided by AANHS or contract care facilities, they usually pay for the return transportation costs from these facilities to their homes (except for authorized emergency travel). All the Upper Tanana villages lie within the Anchorage Service Unit boundaries except Eagle Village and Healy Lake which are part of the Interior Alaska Service Unit. Thus the villagers are encouraged to seek AANHS services in Anchorage, rather than in Fairbanks. Since Anchorage is farther away, this adds to the expense of traveling there. This is partially offset by the availability of free lodging and meals to patients having made advance arrangements; comparable arrangements are not available in Fairbanks.

Persons desiring medical care at either AANHS facilities in Anchorage or Fairbanks are encouraged to make advance appointments or stand the change of a long waiting period in the clinic. Unfortunately, communication problems and unclear procedures in Tok often hamper this process. I learned, for example, that the Tok Community Clinic has scheduled appointments for patients and then neglected to make corresponding housing and transportation arrangements. At this time no single person or agency in Tok assumes responsibility for scheduling appointments and making other patient arrangements. The confusion surrounding this process does little to encourage patients to seek medical assistance outside the Upper Tanana region, and more than one villager has become entangled in this combersome and confusing process. TCHA hopes to establish a position in its Tok Subregional Office in attempt to alleviate existing problems.

The extent to which traditional medical practices remain functional among Upper Tanana villagers was not ascertained during this abbreviated study. Most younger informants said they know little about the "old ways" and believed that they had generally fallen into disuse. Some middle-aged and elderly natives continue to employ certain traditional remedies but probably in conjunction with contemporary Western treatment modalities. Many village residents regularly take steam baths in small structures designed solely for that purpose. This practice has both hygienic and therapeutic effects, and is a common practice among many North American Indian groups (cf. McKennan 1959:76; Vogel 1970: 253-256, passim).

I believe that traditional medical practices are more prevalent than meets the eye, but since they occur "behind the scene," so to speak, and possibly outside a ritualistic context, the casual observer may not easily gain exposure to them. A careful assessment of the role and importance of traditional practices would require both extended residence in Upper Tanana villages and the confidence of village residents who practice or know about them.

Many of the complaints registered by my informants represent isolated instances rather than persistent problems. Most expressed satisfaction with village health services, but desired more comprehensive services in Tok, closer to home. Meanwhile, thousands of dollars are being expended for long-range health planning activities, while existing deficiencies in services and programs in the Upper Tanana region increase in their severity. I am not "putting down" health planning, for it is an important predecessor to the establishment of appropriate services in the years ahead. Instead, I am critical of the apparent disregard of current needs during the course of future planning. Immediate attention must also be given to short-term planning for the Upper Tanana villages, if the People are to be adequately prepared to deal with the impacts of gas pipline construction.

The "developmental approach" to health planning espoused by Henrik Blum is a strategy which merits attention by planners in the Upper Tanana region. This process focuses simultaneously on planning for problem solving (short-term amelioration of problems) and planning for attainment of long-range goals (Blum 1974:9). Equally important is Blum's emphasis on a comprehensive view of health planning:

> Health is seen as inevitably affected by four major influences: genetics, environment, personal habits, and health services. I am not at all sure that the last is the most important of the four in determining the health or well-being level of our society. I would repeat, therefore, that health planning cannot be described as comprehensive if it is directed solely to health care services (Blum 1974:125).
>
> If planning for health is to be comprehensive, all aspects of health problems, all health-related aspects of social problems, and all services directed toward the prevention or amelioration of problems or consequences are the beginning of what must be taken into account... (Blum 1974:114).

Summary

Based on my discussions with village residents, I conclude that a comprehensive community health education program should be given high priority in the Upper Tanana region. This is an important initial step in developing among the people a stronger orientation toward accident and illness prevention, and in preparing them for the impacts of future growth and development. Too much emphasis is currently focused on curing problems rather than on preventing them, thus creating yet another dependency relationship between the natives and the federal government. I am not saying that certain of these services are unneeded but that they seem to be the emphasis, as is long-range health planning. In view of the escalating costs of health care delivery in rural Alaska, appropriations for community health education should not be unduly delayed. Not unexpectedly, I learned that current plans for this area are in a state of confusion. According to one official,

> There is no health educator who comes to this area because the health education program is funded by the Interior Alaska Service Unit. We are now in the Anchorage Service Unit. In reality, Tanana Chiefs Health Authority is responsible for providing health education for this area but (they) haven't had funding, so they say the Anchorage Service Unit is (responsible). Anchorage Service Unit says "we don't have the money, so write us a proposal."

Hopefully, this and other problems will be resolved in the months ahead. All agencies involved in the provision of health and health-related services to the Upper Tanana villages are strongly committed to resolving existing problems. The primary deterrent appears to be the fact that government paperwork and red tape are designed to decelerate this process. Service agencies have no alternative but to contend with such factors and proceed at a snail's pace.

VII

TOK COMMUNITY MEDICAL SERVICES SURVEY

This chapter presents selected data derived from mail questionnaires sent to a random sample of Tok area residents. At this writing, the data are being prepared for computer analysis (SPSS programs), a strategy which will identify relationships between demographic characteristics of the sample population and responses to the various categories of inquiries. This presentation, then, is more descriptive in nature and is designed as an introduction to the issues of general public concern in Tok, with regard to health care services and gas pipeline impact.

Fifty of the 230 questionnaires distributed to a random sample of post office boxes in Tok were returned, with 47 of these being analyzed in this presentation. Two questionnaires were returned only with comments reflecting the recipients' attitudes toward this survey (and perhaps surveys in general), and one completed questionnaire arrived too late for inclusion in this preliminary presentation. Since comparative demographic data are not available for the Tok population, I cannot state with certainty that the sample is an accurate reflection of that population. In fact, the sample probably represents those community residents who, for whatever reason, are most concerned with the range of issues associated with energy development and population growth in the Upper Tanana region. Consequently, caution must be exercised in generalizing these survey results to the community at large.

Table 4 presents demographic information for the sample population. Most respondents (72%) were between 21 and 40 years of age, and females responded more frequently than did males (58% and 40% respectively). Not unexpectedly, the sample consists primarily of Euroamericans (89%), who were married (72%), and who reported a 1977 household income of $20,000 or above (64%). Respondents exhibit more diversity in their lengths of residence in Alaska generally and in the Tok area specifically. This divergence is especially important for ensuring that a range of experiences (e.g., with the health care system) is represented in the survey. Six respondents (13%) have resided in Alaska since birth, while newcomers most frequently identified the Western and Northwestern States as their place of residence before moving to Alaska (36%).

As shown in Table 5, respondents indicated a high utilization rate of community medical services, most notably the Tok Community Clinic and the Public Health Nurse. Fewer took advantage of the services provided by visiting health care professionals, although a common complaint voiced by respondents was the need for more visits by itinerant personnel, because of the high costs incurred in obtaining medical services in Anchorage or Fairbanks.

TABLE 4. Demographic characteristics of sample population participating in the Tok Community Medical Services Survey, 47 households.

	N	%
A. DATE OF BIRTH:		
1957-1948 (age 21-30)	(12)	25%
1947-1938 (age 31-40)	(22)	47%
1937-1928 (age 41-50)	(6)	13%
1927-1918 (age 51-60)	(2)	4%
1917-1908 (age 61-70)	(2)	4%
No Response	(3)	6%
B. SEX:		
Male	(19)	40%
Female	(27)	58%
No Response	(1)	2%
C. ETHNIC AFFILIATION:		
Euroamerican	(42)	89%
Athapaskan	(3)	6%
No Response	(2)	4%
D. MARITAL STATUS:		
Single	(8)	17%
Married	(34)	72%
Divorced/Separated	(3)	6%
No Response	(2)	4%
E. LENGTH OF RESIDENCE IN ALASKA:		
1- 5 Years	(9)	19%
6-10 Years	(10)	21%
11-20 Years	(16)	34%
21-30 Years	(7)	15%
31-40 Years	(4)	8%
41-50 Years	(1)	2%
F. LENGTH OF TOK RESIDENCE:		
Less Than 1 Year	(2)	4%
1- 5 Years	(17)	36%
6-10 Years	(13)	28%
11-20 Years	(8)	17%
21-30 Years	(5)	11%
31-40 Years	(1)	2%
G. RESIDENCE BEFORE COMING TO ALASKA:		
West/Northwest	(17)	36%
Midwest	(8)	17%
Southwest/Plains	(6)	13%
Northeast	(5)	11%
Not Applicable	(6)	13%
No Response	(5)	11%

	N	%
H. YEARS OF EDUCATION:		
1-11 Years	(3)	6%
High School	(27)	58%
Some College	(4)	9%
College (BA/BS)	(8)	17%
Graduate Training	(4)	9%
No Response	(1)	2%
I. VOCATIONAL OR OTHER SPECIAL TRAINING:	(18)	38%
J. NUMBER IN HOUSEHOLD:		
One	(5)	11%
Two	(8)	17%
Three	(6)	13%
Four	(12)	25%
Five	(6)	13%
Six	(7)	15%
Seven	(1)	2%
No Response	(2)	4%
K. OCCUPATION:		
State/Federal/ Military	(8)	17%
Secretarial/Clerical/ Custodial	(7)	15%
Trade	(5)	11%
Labor	(5)	11%
Housewife/Homemaker	(5)	11%
Health/Medical	(4)	8%
Legal/Law Enforcement	(3)	6%
Education	(2)	4%
Business/Self-Employed	(2)	4%
Unemployed/Retired	(1)	2%
No Response	(5)	11%
L. APPROXIMATE HOUSEHOLD INCOME IN 1977:		
$ 2,000- 4,999	(2)	4%
5,000- 7,499	(4)	9%
7,500- 9,999	(2)	4%
10,000-14,999	(2)	4%
15,000-19,999	(5)	11%
20,000-Above	(30)	64%
No Response	(2)	4%

Although the costs of the services alone may be less than those in Tok, the expenses entailed in travel, lodging, meals, and in being absent from work add significantly to the financial burden. I cannot account for the low utilization rate of visiting health care professionals, unless persons either could not obtain appointments or did not need a specific service at the time it was offered.

TABLE 5. Sources of health care in the past 12 months, local and out-of-town services, 46 households reporting.

Source of health care	N	% of households
Local Services:		
Tok Community Clinic	(39)	85%
Public Health Nurse	(37)	80%
Visiting Dentist	(14)	30%
Emergency Medical Services	(6)	13%
Visiting Eye Specialist	(6)	13%
Visiting Physician	(5)	11%
Out-of-Town Services		
Fairbanks	(26)	56%
Anchorage	(13)	28%
Lower 48 States	(9)	20%
Glennallen	(8)	17%
Delta Junction	(5)	11%

Only one person reported receiving assistance from the Upper Tanana Regional Council on Alcoholism and one from Tanana Chiefs Health Authority in the past twelve months. This can be attributed, in part, to the anticipated low response rate from native peoples, who are the primary recipients of these services, but who were not the focus of the mail survey. Other respondents, however, may have received alcoholism counseling but preferred not to divulge that information.

Two persons reported receiving medical care in Alaskan communities other than those listed in Table 5, while one respondent sought dental treatment in Canada's Yukon Territory. I also learned that some local residents have acquired medical assistance for chronic illnesses in Mexico and in the Philippine Islands. No respondents to this survey indicated their use of alternative treatment modalities, perhaps because the controversy surrounding the efficacy of "faith healers" and "miracle drugs" leads people to avoid publicizing their visits. Let it suffice to note that Tok area residents do seek and have sought assistance for their medical needs from a wide range of resources in a variety of locations. One man, for example, grew increasingly annoyed during the summer of 1978 at the problems he encountered at a clinic in Fairbanks, and remarked that "it would be a lot cheaper and faster to fly to Seattle to get this (problem) taken care of."

Generally speaking, most respondents considered both themselves and other household members to be in "good" to "excellent" health, as illustrated in Table 6. A problem in interpreting self-assessments of health status in this study is the absence of standard definitions for "excellent," "good," and "fair" health. Furthermore, persons having special health conditions (e.g., diabetes, asthma, cataracts, ear problems) were nonetheless reported to be in "good" to "excellent" health. However, of the 44 households who responded to the question, 34% reported having one or more members with a special health condition of unspecified severity. Members of two households had physical disabilities, but these were not described.

TABLE 6. Respondents' assessment of own health status and that of other household members.*

Individual	Health Status									
	Excellent		Good		Fair		Poor		Row Totals	
	N	%	N	%	N	%	N	%	N	%
Respondent	(27)	59%	(16)	35%	(3)	6%	--	--	(46)	100%
Others	(67)	57%	(45)	38%	(5)	5%	--	--	(117)	100%
Column Totals	(94)	58%	(61)	37%	(8)	5%	--	--	(163)	100%

*One respondent did not respond to this line of inquiry, and three did not provide information for other household members.

Of the eight persons reported to be in "fair" health, one attributed this assessment to an arthritic condition, another to dental problems, and a third to dental and skin conditions. Five respondents offered no explanation.

More accurate appraisals of health status would have required a more extensive questionnaire, personal interviews and assistance from a health care professional--all beyond the scope of the present study. The importance of perceived health status, however, should not be underestimated. Kelman (1976: 437-438), for example, believes that population-based studies of consumer views, perceptions, preferences and desires, with respect to health care, may more accurately reflect personal and community needs than those postulated by health care professionals. To be sure, consumer perceptions of health care are to some extent shaped by perceptions of health status.

Tables 7, 8, and 9 offer further insights into the health behaviors and practices of the sample population. Only 27% reported having a family physician, which is not unusual in a community lacking a resident doctor. Interestingly, however, three respondents considered the Physician Assistant in Tok to be their "family physician." The majority of households (80%) possess some type of health insurance (including Medicare), frequently coverage provided through their place of employment. The extent of these coverages were not specified but probably include at least protection against major medical liabilities. Only 58% of the respondents indicated that they have regular checkups, while 67% of those with families reported that other household members do so. Females and children of both sexes obtain checkups more often

than do adult males, in part because both can receive such examinations in Tok. Those who do not have regular checkups cited as the major deterrents the costs entailed and distance to Fairbanks.

TABLE 7. Selected health behaviors of the sample population

Health Behavior	Yes	No	Row Totals
Respondent has family physician*:	(12) 27%	(32) 73%	(44) 100%
Respondent has health insurance:	(36) 80%	(9) 20%	(45) 100%
Respondent has regular checkups:	(26) 58%	(19) 42%	(45) 100%
Other household members have regular checkups:	(27) 67%	(13) 33%	(40) 100%

*Locations of family physicians are as follows: Fairbanks (5); Tok (3); Glennallen (2); Outside Alaska (1); and unspecified (1).

Table 8 reveals the length of time since the respondent last visited a physician or other caretaker, where assistance was received, and the reason for the visit. A majority (81%) had sought assistance in the past twelve months for a variety of reasons. Female (e.g., gynecological) examinations and treatment for injuries or emergency problems occurred most frequently in Tok, while laboratory tests, specialty services, and dental/visual care were normally obtained in Fairbanks. I asked respondents to specify the total number of visits that they and/or other household members had made during the past year; these figures are not presented here, in view of the analysis required to give them meaning. In general terms, relatively high utilization rates of the Tok Community Clinic and Public Health Nurse were observed, as indicated earlier in this chapter.

An important consideration in assessing health behavior, especially in rural areas lacking comprehensive medical services, is that of preventive practices. I asked respondents to list the measures they employ to remain "healthy" and if more than one was mentioned, to indicate the most important. These responses, presented in Table 9, resemble those one would find in other communities. An interesting observation is the emphasis placed on "proper diet." This may be attributable to the predominance of families with school-age children represented in the sample, with respondents placing emphasis on their children's diets in addition to or instead of their own. The exact meaning of "proper diet" is unclear, since a common complaint among Tok area residents focuses on the high cost of groceries and the sporadic availability of fresh foods throughout much of the year.

Respondents were asked to rate a list of medical and health-related services currently available in Tok. I attribute the relatively low response rate to this section of the questionnaire (see Table 10) to one or more of three factors: (1) eight respondents (17%) neglected this section in its entirety, perhaps because of inexperience with the services; (2) several

TABLE 8. Time of last visit to a physician or other caretaker, where assistance was received, and reason for last visit.

	N	%
Length of time since last visit to physician or other caretaker (43 households):		
Less than one month	(14)	32%
1- 6 months	(15)	35%
7-12 months	(6)	14%
13-24 months	(5)	12%
25 months or more	(3)	7%
Community in which assistance was received at time of last visit (43 households):		
Tok	(17)	39%
Fairbanks	(9)	21%
Alaska, other	(4)	9%
Glennallen	(2)	5%
Outside Alaska	(3)	7%
Unspecified	(8)	19%
Reason for last visit (43 households):		
Routine medical (colds, infections)	(11)	25%
Gynecological or other female exam	(9)	21%
Emergency/injury treatment	(7)	16%
Specialist treatment/tests	(5)	12%
Dental/visual care	(4)	9%
Regular checkup	(3)	7%
Unspecified	(4)	9%

respondents indicated their inability to rate services which, in their view, are nonexistent in Tok; and (3) others seemed puzzled by the inclusion of senior citizen, sanitation, and nutritional services under the heading of medical or health-related services. The latter two factors reflect a weakness in questionnaire design which might have been averted by administration of a more extensive pretest. Nevertheless, I have presented these ratings because they do reveal the perceived strengths and weaknesses in local services, at least from the point of view of some community residents.

Respondents expressed relative satisfaction with the child health and maternal health services in Tok, primarily those provided by the Public Health Nurse (some were uncertain what was meant by the term "maternal health", however). General medical care ranked somewhat lower, in part because of the limited capabilities of the Tok Community Clinic or because of personal dissatisfaction with Clinic services; on the other hand, credit was given to the Clinic for providing services basic to community needs. Those familiar with UTDC's senior citizens' program lauded the efforts of that agency. Emergency medical services received a commendable rating, although respondents desired further improvements before the onset of gas pipeline construction.

TABLE 9. Measures taken by respondent to remain healthy, and the most important of those measures mentioned.

	N	% of respondents
Measures taken by respondent to remain healthy (N=38, some multiple responses):		
Proper diet	(28)	74%
Exercise	(24)	63%
Checkups/other preventive strategies	(12)	31%
Adequate rest	(10)	26%
Maintaining good mental attitude	(5)	13%
Take vitamins	(4)	10%
Moderation in habits	(3)	8%
Proper hygiene	(2)	5%
Others	(11)	29%
Most important measure taken by respondent to remain healthy (N=38):		
Proper diet	(13)	34%
Exercise/recreation	(8)	21%
Regular checkups	(4)	10%
Active life/work	(3)	8%
Diet and exercise	(3)	8%
Good mental attitude	(2)	5%
Adequate rest	(1)	3%
Avoidance of physicians	(1)	3%
Others	(3)	8%

Primary areas of concern and lowest ratings focused on health education, prescription drugs, nutritional services, mental health/counseling, and on dental and visual services. With the exception of prescription drugs, which are available in limited supply at the Tok Community Clinic, these services were frequently termed by respondents to be "nonexistent" in Tok. As will be seen later in this chapter, these services are among the ones about which the sample population expressed the most concern, in terms of existing problems and service needs. Further data analysis will reveal patterns in these ratings vis-a-vis other data in the questionnaire. I will limit further discussion of Table 10 to presentation of selected comments made by respondents on the survey questionnaires:

Maternal health: "The present and long-time Public Health Nurse is doing one beautiful job."

General medical: "Need a doctor. It really irks me to have to pay $25-27 for an office call to see a PA. I'm glad we have one but I pay less to see a doctor anywhere else."

"A full-time doctor could do no more with existing facilities--I think the PA and PHN do well."

"Public Health Service is excellent."

TABLE 10. Respondent ratings of medical and health-related services currently available in Tok, ranked according to total percentages in "Excellent" and "Good" categories.

Service Type	Total N	Service Rating							
		Excellent		Good		Fair		Poor	
Child Health	(37)	(8)	22%	(21)	57%	(7)	19%	(1)	3%
Maternal Health	(34)	(5)	15%	(16)	47%	(12)	35%	(1)	3%
General Medical	(38)	(3)	8%	(19)	50%	(11)	29%	(5)	13%
Senior Citizen	(25)	(4)	16%	(10)	40%	(10)	40%	(1)	4%
Emergency Medical	(36)	(5)	14%	(14)	39%	(15)	42%	(2)	6%
Sanitation	(29)	(2)	7%	(12)	41%	(10)	34%	(5)	17%
Health Education	(28)	(2)	7%	(8)	29%	(12)	43%	(6)	21%
Prescription Drugs	(36)	--	--	(12)	33%	(10)	28%	(14)	39%
Nutritional	(26)	(1)	4%	(6)	23%	(15)	58%	(4)	16%
Mental Health/Counseling	(32)	(1)	3%	(1)	3%	(5)	16%	(25)	78%
Visual	(36)	--	--	(2)	6%	(12)	33%	(22)	61%
Dental	(36)	--	--	--	--	(6)	17%	(30)	83%

	"Medex does what he is capable of. I feel our PHN is doing an outstanding job, and also our Medex, of one does not expect him to be a specialist in all fields."
	"Office call prices for medic are far too high for his level of training."
	"Clinic is usually able to help problem or send you where help is available."
Senior Citizen:	"UTDC has a good program."
	"Don't know; maybe UTDC does it."
	"The PA is not particularly sensitive to the problems of seniors."
Emergency Care:	"They could be faster."
	"We have some very qualified EMTs but equipment and clinic need updating."
	"Strictly volunteer."
	"Need better clinic facility."
Sanitation:	"Don't know what the sanitarian does."
Health Education:	"Nonexistent."
	"The people are not educated on TB or any social type disease."
	"Never heard of it around here."
	"Not sure we have any here except what the PHN does."
Prescription Drugs:	"Would be nice to have a drugstore."
	"Can only be received through the clinic and sometimes they're out."
	"Have to pay for an office visit to get them."
Nutritional:	"Not sure we have any unless PHN does it."
Mental Health/ Counseling:	"Who do you go to for counseling?"
	"Don't have none that I know of."
	"Available only through PHN."
	"UTRCA does not exactly have a working rapport with clients."
	"Not available."
	"We need a mental health specialist."

Visual: "Visits are not made often enough."

"Doesn't exist."

"He visits but is always filled up."

"The itinerant services need better publicity."

Dental: "Visiting dentists and eye doctors are booked too full to get in to see."

"Visiting dentists don't come often enough."

"Doesn't exist."

"When a dentist comes through, he isn't well-equipped."

General Comments: "I am sure that if additional services of any type are required during pipeline construction, they can be provided by private industry and not by the use of my tax dollar. I'm fed up with working and paying."

"Our local clinic needs expanding regardless of whether the pipeline comes or not. There are so many areas in the nation where I feel our tax dollars are being grossly misspent, but I feel that our clinic and the public health program are worthwhile services and a deserving area for our money to go.... There are a few places I would like my hard earned tax money to go. I don't begrudge paying my dues for something like the upgrading of our local clinic."

The major health problems in Tok, as perceived by the sample population, appear in Table 11. Only 32 of the 47 respondents commented on this question, but they identified three primary problem areas: alcoholism and drug abuse; mental health and counseling deficiencies; and inadequate services in general. Thirty-one respondents also identified the most serious of those problems they listed: alcoholism/drug abuse (58%); mental health and counseling inadequacies (10%); absence of a physician (10%); inadequate facilities and personnel (6%); inadequate emergency services (6%); and chronic illness, sanitation, and people in poor physical condition (3% each).

Pipeline-related health problems of concern to Tok area residents closely resemble those which generally accompany energy development and other instances of rapid socioeconomic change (refer to Chapter 2). The 36 respondents who commented on this question (refer to Table 12) identified a range of problems which relate either directly or indirectly to personal and community health. Increases in alcohol consumption, family disruption, accidents, injuries and communicable diseases can all be expected to accompany development activities in the region and affect many Upper Tanana residents. While many of the problems identified in Table 12 and those seemingly synonymous with development may be unavoidable, careful planning can minimize their disruptive effects.

To this end, respondents offered numerous suggestions for dealing with pipeline-related health problems--most of which entail appropriate planning.

TABLE 11. Major health problems in the Tok region, as perceived by respondents, with some multiple responses (N=32).

Major Health Problems	N	% of Respondents
Alcoholism/Drug Abuse	(18)	56%
Inadequate Services*	(17)	53%
Mental Health/Counseling Inadequacies	(8)	25%
Dental Health	(3)	9%
Communicable Diseases	(3)	9%
Chronic Illness	(2)	6%
Sanitation	(1)	3%
People in Poor Physical Condition	(1)	3%

*Service inadequacies cited include those in facilities and personnel in general; absence of a physician; nutritional and dietary counseling; health education; maternity services; emergency services; and visual services.

TABLE 12. Health problems perceived by respondents to be related to gas pipeline construction in the Upper Tanana region (N=36, some multiple responses).

Pipeline-Related Health Problems	N	% of Respondents
Increased use of alcohol/drugs	(11)	30%
Inadequate facilities and/or personnel to meet increased service demands	(11)	30%
Accidents and/or injuries requiring hospitalization	(8)	22%
Communicable diseases (colds, influenza, venereal disease)	(8)	22%
Public health/sanitation/pollution	(4)	11%
Mental health	(4)	11%
Increased traffic	(1)	3%
Violence-related injuries	(1)	3%
Undecided	(3)	8%

The recommendations made by the 29 respondents commenting on this question are as follows: expanded local services/personnel (55%); careful planning (14%); education (14%); isolation of pipeline work camps and workers (14%); mental health program (10%); law enforcement and safety programs (7%). As indicated in these suggestions, Tok area residents are concerned not only with the availability of adequate treatment facilities, but also with the dissemination of information as "preventive" mechanisms for educating the community. This suggests that community residents wish to participate in pipeline impact planning, rather than stand idle during this process.

Similarly, respondents were asked to indicate the kinds of medical and health-related services they desired for their community. As shown in Table 13, the desired services closely resemble those receiving the lowest ratings in

Table 10. Interestingly, three respondents suggested that "better coordination of existing programs" is an important method by which local services can be improved. Although not a widespread belief, some residents do believe that the community health picture could be vastly improved by streamlining existing services, eliminating overlaps in service delivery, and reducing the amount of red tape involved.

TABLE 13. Medical and health-related services respondents would like to see in Tok (N=37, some multiple responses).

Services Desired	N	% of Respondents
Dental	(15)	40%
Physician	(14)	38%
Visual	(8)	22%
Mental health/counseling	(6)	16%
Expanded services in general	(5)	13%
Health education	(4)	11%
Improved emergency services	(3)	8%
Better coordination of existing programs	(3)	8%

Finally, respondents were asked to read a series of eleven statements which address pipeline impact and medical service needs, and to indicate the extent of their agreement or disagreement with each statement. These responses are presented in Table 14. My discussion of these data will focus on the overall responses themselves; as further analysis proceeds, the responses in Table 14 will be correlated with demographic and other indices to identify specific attributes of, for example, respondents who are pro-development and anti-development advocates. I refer the reader to the sample demographic characteristics in Table 4 in order to place the response in Table 14 in better perspective.

The majority of respondents (84%) agreed that Tok needs a physician in residence, while 52% believed that the community needs a hospital. The chances of Tok attracting a physician are far superior to those of securing support and funding for a community hospital. A member of the Tok Community Clinic Board indicated that several physicians have inquired about the possibilities of establishing a practice in Tok, but that nothing has thus far extended beyond the exploratory stage. As community growth continues, some type of inpatient facility may become economically feasible. Increased utilization of community services during gas pipeline construction might require a health care professional to be on duty around the clock at the Tok Community Clinic; perhaps basic inpatient services could then be provided as well.

More than half the respondents (58%) thought that Northwest Alaskan Pipeline Company should use medical services in Tok during the construction period. More significantly, 82% believed that Northwest should assist in the provision of any additional services that might be needed at that time--64% were strongly in favor of this proposal. There is less consensus regarding the extent to which Northwest has an obligation to assist local communities. However, even if the Company elects not to use community medical services, the pipeline project will

TABLE 14. Respondents' extent of agreement/disagreement with statements regarding medical service needs and pipeline-related impacts on the Tok community.

Statement	N	Agree Strongly		Agree Somewhat		Neither Agree nor Disagree		Disagree Somewhat		Disagree Strongly	
A. Tok needs a full-time doctor.	(44)	(27)	61%	(10)	23%	(2)	4%	(4)	9%	(1)	2%
B. Tok needs a hospital	(44)	(12)	27%	(11)	25%	(4)	9%	(9)	20%	(8)	18%
C. The pipeline company should use medical services in Tok during gas pipeline construction.	(42)	(12)	29%	(12)	29%	(7)	17%	(7)	17%	(4)	9%
D. The pipeline company should help to provide additional medical services that might be needed in Tok during gas pipeline construction.	(44)	(28)	64%	(8)	18%	(3)	7%	(3)	7%	(2)	4%
E. The pipeline company should take care of its own medical services and not use those in Tok at all.	(40)	(6)	15%	(8)	20%	(6)	15%	(7)	17%	(13)	32%
F. The State should help to provide any medical services that will be needed in Tok in the years ahead.	(42)	(16)	38%	(11)	26%	(4)	9%	(6)	14%	(4)	9%
G. With all the new people moving here because of the pipeline, Tok will have a lot of medical problems.	(44)	(13)	29%	(13)	29%	(10)	23%	(5)	11%	(3)	7%
H. Tok will not be a good place to raise a family with all the pipeline activity.	(42)	(6)	14%	(11)	26%	(8)	19%	(8)	19%	(9)	21%
I. The pipeline will bring respectable people to Tok and that will be good for the community.	(41)	(2)	5%	(11)	27%	(10)	24%	(9)	22%	(9)	22%
J. The pipeline will be good for the community because it will provide employment for local residents.	(42)	(13)	31%	(17)	40%	(3)	7%	(4)	9%	(5)	12%
K. Weighing the good and the bad, Tok would be better off without the pipeline in the long run.	(43)	(14)	33%	(4)	9%	(12)	28%	(4)	9%	(9)	21%

attract new people not associated with the pipeline project, but who will nonetheless place additional pressure on the limited services now available. That the pipeline will indirectly impact community services is a major concern of many Upper Tanana residents.

Respondents indicated less consensus to the statement, "The pipeline company should take care of its own medical services and not use those in Tok at all," with 35% in agreement and 49% in disagreement. Some of those in agreement prefer that pipeline personnel not come to Tok for any reason and that construction camps be totally self-sufficient. Others prefer that Northwest take advantage of community services and assist in efforts to upgrade them, when and where needed. Cooperation between Northwest and Tok appears to be a critical issue insofar as utilization of medical services is involved. As indicated earlier in this report, Alyeska took advantage of services which complemented their own medical programs in communities along the oil pipeline corridor, thereby reducing expenditures and avoiding unnecessary duplication of services. An economically sound proposition is for Northwest to assess the capabilities of medical services in Tok to meet their projected needs, and to plan their programs with the assistance of community service providers (or at least after consulting with key health officials and clinic board members).

Sixty-four percent of the respondents believed that Tok should look to the State for their future medical service needs. Many of those favoring assistance from Northwest opposed further State involvement, which may indicate one of two sentiments: (1) that Northwest should take responsibility for assisting in service provision necessitated by their activities (or, in the extreme, that the Company should be exploited for every cent the community can obtain!); or (2) that local residents oppose efforts to see their tax dollars utilized for specific kinds of community services. Indeed, some Tok residents are becoming increasingly embittered with the continual influx of "government" into their community. They equate the acquisition of State or federal dollars with the arrival of another government official or program to manage those funds. Similarly, some residents believe that so-called "give-away programs" supported by tax dollars are ineffective, poorly administered, and do little more than promote increased reliance on government.

The population influx accompanying pipeline construction will increase the incidence of medical problems in the community, in the opinion of 58% of the respondents. Many Tok area residents either worked on the Alyeska Oil Pipeline project or had occasion to witness the impacts of that project on other communities. They learned that pipeline construction attracts particular types of people, many of whom they view as "undesirables." Their fears of increases in alcohol consumption, accidents, and communicable diseases are substantiated by the experiences of other communities in the region (e.g., Delta Junction and Glennallen) impacted by the oil pipeline. The predominance of families in the sample population, and the probable concern being expressed by parents for the welfare of their children, undoubtedly account for the recognition of population-related health problems which may accompany pipeline construction.

On the other hand, only 40% agreed that Tok would not be a good place to raise a family during the construction period. At first glance, one might

expect a more consistent response between this and the preceding statement. Perhaps local residents view pipeline-related health problems and the overall quality of life in Tok as separate issues. Only one-third of the respondents (32%) believed that the pipeline would attract respectable people to Tok who would be assets to the community, while 44% disagreed and 24% expressed no opinion. These responses reflect the diversity of views within the community, especially among the "growth" and "no-growth" proponents. The former welcome new people who will contribute to the local economy, both as consumers and providers of goods and services; the latter wish to discourage activity which promotes further disruptive community growth, contributes to the loss of autonomy, and detracts from their definition of the quality of life currently available.

The majority of respondents (71%) favor the gas pipeline project, if for no other reason, because of the employment opportunities provided for local residents. Yet 42% believed that, in the long run and after weighing the good against the bad, Tok would be better off without the pipeline. These responses suggest that local residents recognize the economic windfall implicit in the pipeline project, but also view this as having only short-term benefits. What happens following pipeline construction? Will the region suffer an economic depression? The many uncertainties about the long-term implications of the project prevent resolution of these important questions at this time, although a "bust" will inevitably follow the "boom."

The many "unknowns" which accompany the approaching "boom-bust" cycle serve as anxiety-raising stimulants among Upper Tanana residents, and these in turn indirectly affect their health status and well-being. The boom period generates a temporarily healthy economy, albeit one in which family disruption, increased alcohol consumption, crime, accidents, and related phenomena more than offset economic gains. The bust period forces communities to shift gears and seek methods for dealing with economic depression and its attendant conditions. The trade-offs are complex and responses to statements G. thru K. in Table 14 indicate a high degree of uncertainty among respondents in this regard.

Efforts to minimize the negative and maximize the positive impacts of gas pipeline construction require as one objective, conscientious health planning for Upper Tanana communities. Services must be developed with a"boom-bust" situation in mind. To this end, Northwest Alaskan Pipeline Company must coordinate its on-site and off-site planning with similar efforts in local communities. Sufficient time remains for such planning before the onset of pipeline construction, and for the consideration of alternative strategies for all parties involved.

VIII

PIPELINE IMPACT AND MEDICAL SERVICES: THE ALYESKA EXPERIENCE

An obvious first step in health planning for the Upper Tanana region is an examination of the experiences of other rural Alaskan communities with the Alyeska Pipeline project, and especially assessments of their medical services and those provided by Alyeska itself. The adage "experience is the best teacher" seems appropriate in this context, since the gas pipeline project has much in common with its predecessor. This chapter summarizes information I obtained from Alyeska Pipeline Company and from two communities situated along the oil pipeline corridor, with regard to medical services, health problems, and other pertinent issues.

Alyeska Medical Services /1/

Beginning in April 1974, the pipeline medical program provided pre-employment physical examinations and medical services to employees of Alyeska Pipeline Service Company, Bechtel, Fluor and their subcontractors. Three physicians supervised this program and monitored the work of 70 field medical technicians (FMTs) assigned to dispensaries in 31 construction camps and pump stations. Workers requiring more extensive care were evacuated to hospitals in Fairbanks, Glennallen, Anchorage or Valdez, depending on where they were when the illness or injury occurred.

During the first year of pipeline construction, Bechtel operated the medical program and Alyeska provided limited administrative supervision. Then, following a reduction in Bechtel's role, Alyeska assumed control of the entire program. One of the company's first actions involved the standardization of physical examination procedures and the reduction of costs by conducting physicals in a central location. By the end of 1977, 90,000 pre-employment physicals had been given, primarily at clinics in Alaska (this figure includes an unspecified number of exams given to workers who were rehired after terminating for various reasons).

I obtained little information regarding the planning of pipeline medical services during the course of this study. Alyeska's Medical Director informed me that the company has declared its medical records to be proprietary information, thereby rendering them inaccessible for public examination. This and other information is apparently available to companies that wish to purchase it. Consequently, I can present only a general picture of Alyeska's medical services.

At least one physician participated in the planning of camp dispensaries and service procedures, but not to the extent that upon reflection is thought to have been desirable. Alyeska's Medical Director strongly advised Northwest Alaskan Pipeline Company to coordinate its medical and engineering planning, since this apparently surfaced as a problem in the Alyeska project. Camp

facilities were designed according to the projected population of each construction camp, but the fluidity of the actual number of workers assigned to each facility required a high degree of flexibility.

Alyeska's medical evacuation plan emerged as the best developed feature of the company's medical program. This can be largely attributed to the fact that camp infirmaries were not equipped to deal with emergency cases, nor was such a plan economically feasible. Instead, the company instituted a policy for evacuating emergency cases to the nearest "appropriate" medical facility. Aircraft transported the most severe cases to the nearest or most appropriate hospital; less severe cases received medical attention in nearby community facilities. Medical evacuations were arranged in three categories or classes: Class I, which required immediate attention outside the camp; Class II, which initially received attention from an FMT, who recommended that the patient be placed under a physician's care; and Class III, consisting of medical evacuations made at the patient's own request when s/he wanted to see a physician. To ensure that employees did not abuse Class III privileges and in order to verify their visits, they were required to turn in a medical release form completed by an attending physician.

Alyeska's Medical Director stated that the company recorded an estimated 300,000 patient visits during the four-year period between 1974 and 1977. Most visits were for "the same kinds of problems you would see in a small town," including upper respiratory infections (the most common cases), cuts, bruises, backaches and communicable diseases. Frostbite and depression occurred far less frequently than the company had originally anticipated, since a reduced work force consisting predominantly of Alaskans well-acquainted with cold and darkness worked indoors during the winter months. Alcohol problems and venereal disease were termed significant "social problems" but clearly have medical implications as well.

All dispensaries were equipped with telephones and complete radio systems which provided the sophisticated communications network so vital to the medical program. FMTs could contact emergency equipment or physicians when needed without delay. Anyone familiar with logistics in the North can appreciate the importance of effective communications.

One FMT in a camp north of the Yukon River estimated that he attended to as many as 150 patients during a seven-day period at the height of the summer construction period, and as few as one every other day during the winter months. He stated that he visited about 25% of the camp employees as patients on a regular basis and rarely, if ever, encountered the remaining 75%.

Perhaps Alyeska's primary contribution to non-pipeline medical assistance came in the form of emergency medical services in corridor communities. The Medical Director estimated that in 1976 alone, Alyeska spent $400,000 on emergency evacuations and medical care for persons who either resided near pipeline camps or who were passing through the area. Since most camps were situated in remote locations, no alternative medical services were locally available. I suspect that many accidents involving non-pipeline employees were nonetheless pipeline-related, although I have no figures to substantiate this claim. If this is the case, Alyeska was appropriately taking responsibility for the disposition of accident victims, rather than providing a gratis service.

All FMTs participated in a company orientation program before being assigned to camp infirmaries. A physican assistant who formerly practiced in Tok played a key role in this program. I obtained no information during this study regarding the recruitment of FMTs, their training, turnover, and related phenomena. This is undoubtedly included in the proprietary information in company files. All I learned about the company's medical policies (excepting its emergency procedures) was that no referrals were made to medical facilities operated by health care professionals having training equal to that of the FMTs. The Medical Director explained that referrals were always "up the ladder" (vertical) and not, in my words, "across the table," (horizontal).

Glennallen /2/

Medical services in Glennallen are centered at Faith Hospital, a full-service facility operated by Central Alaskan Missions, Inc. Dr. James S. Pinneo founded the hospital in 1954, after completing medical residency training in Philadelphia, and continues to head the medical staff (although he had taken a six-month leave of absence during the time of this study). Inpatient facilities at the hospital include five adult beds, two pediatric beds, nursery, operating/delivery room, patient lounge and kitchen, The outpatient wing consists of two offices, two examination rooms, x-ray room, emergency room, pharmacy/laboratory, central supply quarters and waiting room. The medical staff is comprised of full-time missionaries, including one physician, seven full-time and three part-time nurses (including a Certified Nurse Anesthetist), one pharmacist and one laboratory technologist. Additional services outside the hospital include a Public Health Nurse and an ambulance service staffed with twenty Emergency Medical Technicians (including three ETM-II).

The geographic region served by Faith Hospital lies within a hundred-mile radius of Glennallen. The permanent population of 3,000 swells to approximately 5,000 during the summer months, while an estimated 80,000 tourists pass through the Copper River Valley each year. About 30% of the service population are Alaska natives who reside in small scattered villages in the area. Patients come from as far as Valdez and Eagle for medical care, with some relying on bush planes for transportation to and from the hospital. For comparative purposes, Faith Hospital serves a geographic area approximately the size of the State of Ohio.

The hospital felt the impact of Alyeska Pipeline construction from 1974 through 1977, with 1975-76 emerging as the peak years. During this time, four pipeline camps in the Copper River area relied on Faith Hospital for certain of their medical needs. This influx of an estimated 3,000 men, some with families, placed extreme pressure on the hospital staff and facilities, despite expansion of the nursing staff and temporary service by visiting physicians. The increased number of outpatient visits prompted the hospital to expand its waiting room and to set aside specific block of time for Alyeska personnel (primarily to give physical examinations). The following figures reflect the increases in inpatient and outpatient visits attributable to pipeline impact:

Year	Inpatient Visits	Outpatient Visits
1973	273	7,359
1974	291	6,566
1975	366	8,495
1976	330	11,013
1977	266	10,520

Source: Faith Hospital 1978.

Alyeska arranged for Faith Hospital to conduct comprehensive physical examinations for Company employees and provided an Audiometer for use in these exams. A hospital representative believed the increase in overall patient load to be almost entirely attributable to pipeline employees and their families.

The major health problems treated at the hospital during the construction period included emergencies, communicable diseases, and accidents and injuries resulting from alcohol-related fights. Gonorrhea cases also increased significantly. For treating back injuries and sprains the hospital purchased an Orthion multitherapy unit which simultaneously provides heat, vibration, traction and massage. Use of this device contributed to a reduction in the number of cases requiring referral to Anchorage for physiotherapy.

The Alyeska FTMs assisted the hospital staff in emergency situations. By carefully screening patients in camp dispensaries, FMTs reduced the number of referrals to Faith Hospital which did not require a physician's attention. Alyeska frequently evacuated highway accident victims to the hospital via helicopter, which, in some instances, reduced travel time as much as two hours. Similarly, Alyeska made their helicopter available for evacuating both pipeline and non-pipeline emergency cases to Anchorage. With the closing of pipeline camps and dispensaries, the company donated medical supplies, a cardiac care pack and an ambulance to the hospital.

Two significant problems accompanied the provision of medical services to pipeline personnel and their families: They demanded instant service and, in some cases, were reluctant to pay their bills. This hospital has approximately $40,000 in outstanding pipeline-related debts, which is a large sum to a small rural hospital. Dr. Pinneo made these comments in a magazine article:

> There are a lot of wonderful people working on the pipeline.... But the lust for money has got a stranglehold on many of them. If they have to wait five minutes to see me, they have waited too long. When it comes time to pay their bill, many of them refuse. They often just say, "send it to the union," and walk out the door. Even if they have a wad of $100 bills in their pocket, they're still apt to say they can't afford it (Zoller 1976).

A brief pipeline report written recently may sum up the attitudes of the hospital staff regarding the impact of the Alyeska Pipeline.

> Because of the pipeline impact, our medical capabilities were expanded. The "pipeline days" proved to be a challenge to Faith Hospital, a challenge that we believe was met (Faith Hospital 1978).

Although the impact of pipeline construction on Glennallen and Faith Hospital differs significantly from that which can be anticipated in Tok (in terms of numbers of pipeline workers and medical facilities), I asked the Director of Nursing at Faith Hospital what advice she would offer to assist Tok as the community prepares for the gas pipeline project:

> It would seem that Tok would need at least one doctor and probably two, to keep up with the emergencies plus other health-related problems. You would probably not need an inpatient facilities, as patients would be air evacuated to Fairbanks, but you would need an outpatient facility which had x-ray and laboratory capabilities (Ressler 1978).

Delta Junction /3/

When a new physician assistant (PA) and his wife (a Registered Nurse) arrived in Delta Junction in January, 1973, medical services in that community were, in the PA's words "essentially zero." The nearby military base, Fort Greely, offered services to its personnel but did not provide regular routine services to civilians--although the base did assist with emergency medical evacuations. In a ten-year period between 1962 and 1972, three older physicians had practiced in Delta for varying lengths of time, but at the time the PA arrived, local residents attended to their medical needs 100 miles away in Fairbanks.

The new PA, working under the auspices of the Fairbanks Medical and Surgical Clinic, quickly altered this state of affairs; with the able assistance of his wife, they established the Delta Medical and Surgical Clinic. Shortly thereafter, the PA, a State Trooper and two volunteer firemen who had recently completed EMT training, formed an Emergency Medical Services Council (EMSC). By application for funds provided through the Federal Highways Act, the EMSC obtained an ambulance, basic emergency rescue gear and radio equipment.

From this rather austere inception, the Delta Junction EMSC has developed into a highly sophisticated organization. The community now boasts around 26 active EMTs and a well-equipped EMS squad, trained for both mountain rescue and vehicle extrication emergencies. Three volunteer EMTs are on call for a 24-hour period beginning at 6:00 p.m. each day, and are contacted by a "tone-down" radio dispatch system which distinguishes calls for EMTs from those directed to the fire department. For cases requiring both EMTs and fire equipment, the teams employ a mini-pumper/fast attack fire truck, which carries their major vehicle extrication equipment and emergency gear. This vehicle is capable of pumping both water and foam, thus is designed for gas and oil spills, as well as fires. A fireman and an EMT accompany this vehicle to the emergency scene, while other EMTs and an ambulance follow close behind.

Whether the establishment of both the Delta Medical and Surgical Clinic and the EMSC occurred with pipeline construction in mind is unclear, but both services proved to be assets to the community during the construction period. Alyeska provided a dispensary at its camp near Delta Junction, but pipeline activities had been underway for more than a year before the dispensary was self-sufficient. Until the camp's own limited equipment was installed, the Delta Clinic provided x-rays for pipeline personnel; since Alyeska's x-ray

units could take only extremity films (i.e., excluding chest, spinal and femur pictures), the Clinic continued to provide some x-ray services. The families of pipeline personnel, who were ineligible for Alyeska services in camp dispensaries, created the most impact on the Delta Clinic and attended to most of their medical needs there.

Alyeska and Delta Junction joined forces in a mutual aid pact for the provision of fire and emergency medical services in the greater Delta Junction region. Community fire personnel responded to fires on Alyeska property if called, and Alyeska fire equipment did likewise away from the camps. Community emergency personnel automatically responded to vehicle accidents outside the camps, but rarely assisted in medical evacuations on Alyeska property. Alyeska made their helicopter available for emergency evacuations from Delta, as they did in Glennallen, whether or not it was a pipeline employee that required treatment.

The Delta PA identified several medical problems which increased in occurrence during pipeline construction, although none assumed significant proportions. He noted a marked increase in highway accidents, particularly single-vehicle accidents and those involving Alyeska trucks and smaller vehicles. The "typical" communicable diseases, including strep throat, scabies, and venereal disease also increased in incidence. Finally, fight-related injuries occurred much more frequently. At the height of pipeline construction, the PA estimates that his patient load averaged 22-25 persons per day (excluding after hours calls, which consumed much of his free time). The PA also believed that 70% of his increased caseload was pipeline-related, with the remainder resulting from other new persons moving into the community, many of whom were probably attracted there by the pipeline.

Unlike Faith Hospital in Glennallen, the Delta Clinic encountered few problems in collecting for services rendered to Alyeska patients and their families. The Fairbanks Medical and Surgical Clinic handled all billings, unless patients elected to pay in cash, by check, or to submit a claim directly to their insurance company. The PA calculated the accounts receivable for his clinic to be less than 3%, a remarkably low figure for any medical clinic or hospital.

Delta Junction now offers a wide range of services to its consumer population, which is probably substantially below the 3,000 medical charts now on file (some of these are undoubtedly pipeline-related charts and no longer active). The clinic resembles a family practice in many respects and about half the cases seen are pediatric-related. Additional services provided include family planning, obstetrics/gynecology, minor surgery, counseling and limited orthopedic care. In the absence of a pharmacy in Delta Junction, the clinic stocks about 150 routinely-used drugs. Laboratory facilities have been recently upgraded to permit basic chemistries (cultures, blood counts and urine specimens) to be completed in the clinic, thus reducing time and potentially cost to the patient. Tentative plans call for construction of a new clinic in 1979.

A dentist from Fort Greely has established a practice in Delta Junction, after completing his military tour of duty. He began providing services on a part-time basis in 1977. An optometrist holds a clinic once a week and is giving consideration to a full-time practice in Delta. A veterinarian prac-

ticed in the community and at Fort Greely until recently, but has since returned to school. A part-time Public Health Nurse conducts well-child and maternal health clinics, and provides important follow-up services in conjunction with the PA's caseload.

The PA provided some counseling services during pipeline construction but more frequently called upon laypersons in the community to assist in crisis intervention. He also encouraged persons having drinking problems to seek guidance from the local Alcoholics Anonymous chapter. A newly-established community mental health organization in Fairbanks includes Delta Junction in its catchment area and will initially provide services there one day a week. Although pipeline construction has ended, mental health problems continue--primarily domestic and alcohol-related cases. The PA believes attention should be directed to these persons who either fail to seek assistance or who postpone this procedure until a crisis has already occurred.

The Delta Clinic expanded its medical staff only minimally during pipeline construction, with a half-time receptionist then working on a full-time basis and a relief nurse (a Registered Nurse) being called upon when needed. The PA said he should have requested additional assistance during the peak construction period and would do so "if I had it to do over again."

Alyeska's contributions to Delta medical services included the assistance of FMTs when needed. Following completion of the pipeline, the company donated medical supplies (cold packs, bandages, alcohol swabs, syringes, etc.) to the clinic, most of which were passed on to the EMTs to augment their inventories. More recently, Alyeska funded Delta's grant request for a CPR training film, so their involvement in community affairs continues to some extent.

The PA offered sound advice to Tok based on his experiences with the Alyeska project. The similarities between the two communities suggest that Delta Junction's experiences with Alyeska might resemble those that Tok will have with Northwest. The PA's advice focuses on emergency medical services, although he addresses other concerns as well:

> Emergency medical services are crucial. Extrication and rescue gear are essential, since highway accidents will inevitably increase. Tok needs to develop a strong EMS Council and prepare a grant application requesting funds for "jaws of life" equipment, or at least standard extrication gear. Northwest is not likely to have such equipment.
>
> Medical evacuation services must be in good shape. Qualified people must be available to respond to emergencies. The clinic staff must be adequate to meet increased utilization created by population growth, and the clinic itself much be expanded and better equipped.
>
> Juvenile and family problems will increase, and Tok will need someone to intervene in crisis situations.

IX

RECOMMENDATIONS

On the basis of data collected for and presented in this report, I offer a series of recommendations for use as guides in future health planning activities in the Upper Tanana region. Few of the recommendations will come as surprises to those already engaged in either planning or service delivery, and I reiterate them only to emphasize on their importance. The suggestions include both pipeline-related and long-term considerations; certain of my recommendations are subject to revision when Northwest Alaskan Pipeline Company announces its medical services plan and when community activities currently underway reach completion. However, I hope this document is given consideration in these processes.

Tok Clinic

1) The Tok Clinic has received an $85,000 State legislative appropriation for construction of and to equip an addition to the existing facility. At this writing, tentative plans call for a 20' x 30' addition, to house an emergency room, x-ray machine and developer, a speciality services office, 1-2 small examination rooms and either a laboratory or pharmacy. This addition will meet the community's most pressing facility needs and will better prepare the Upper Tanana region to meet the health needs of a growing population. It is imperative that construction of this addition not be unduly delayed, in view of the approaching pipeline impact period.

2) Continued growth in the region will require addition of one or two staff members in the clinic, if it is to operate efficiently and effectively. Someone to attend to the non-medical administrative details should be given high priority. Tanana Valley Medical-Surgical Group (TVMSG) must look beyond the immediate financial cost-effectiveness of this recommendation and think in terms of the quality of services provided and patient satisfaction. The failure of TVMSG to expand its staff may increase turnover of key people by overloading them, and leave the community poorly staffed to deal with basic medical needs. Northwest Alaskan Pipeline Company might arrange to assist temporarily with staffing considerations, especially if it intends to utilize the clinic in conjunction with on-site dispensaries.

3) Although the community demand for and interest in a physician is great, several factors may prevent this desire from becoming a reality in the near future. A nationwide trend reveals that physicians are becoming increasingly attracted to urban centers

and their periphery--not to more remote communities like Tok. The Upper Tanana region has a large enough population to support a physician, preferably one trained in family and community medicine.

If local residents sincerely want a physician, they must launch a strong community effort and put forth a convincing sales pitch which details the advantages of practicing in this region. Two potential resources are the WAMI Program (at the University of Washington and the University of Alaska, Fairbanks) and the National Health Service Corps, both of which are primarily involved in the provision of rural medical services.

4) If consumer demands for a full-time physician seem unrealistic, the Tok Community Clinic should arrange for more regular visits by specialists from Fairbanks. This will not only provide the clinic staff with more opportunities to observe and assist physicians with non-routine cases, but will improve accessibility of important services to Upper Tanana residents.

Public Health Nurse (PHN)

1) The PHN stationed in Tok cannot absorb further increases in her patient load and continue to provide high quality services. There appears to be strong support for a proposal to develop a second PHN position in Tok next year. One PHN would serve primarily in the Public Health Clinic and the other would concentrate her efforts in the outlying villages. The current PHN is well-liked and is very enthusiastic about her work; her effectiveness is limited only by the large catchment area she serves.

2) The PHN has expressed a desire to provide more health education services, on both formal and informal levels(e.g., classes and "rap sessions"). A second PHN in Tok would allow her to pursue this important and much-needed service. The value of having local health care professionals take charge of health education programs cannot be overemphasized and should not be overlooked.

3) Another advantage of stationing a second PHN in Tok relates to village medical services. The PHN currently has few opportunities to attend to the needs of men who seek her care during village visits. If the men find a large group of women and children in attendance, they usually leave, knowing that they would be seen last, if at all. If one PHN could extend the length of her village visits, she could render assistance to more persons, thereby making effective services locally available on a more regular basis.

Emergency Medical Services (EMS)

1) The newly-formed EMS Council in Tok must continue its organizational efforts and prepare to meet the service needs created by continued and, at least temporary rapid growth in the Upper Tanana region. The recent addition of twelve trained EMTs to the community is an important first step toward providing round-the-clock coverage for medical emergencies. Now the EMTs must plan schedules so that the responsibility for emergency medical care can be more evenly distrib-

uted among the ranks.

2) EMTs should become more actively involved in the Tok Ambulance Service and serve as drivers if regular drivers are not available. Those EMTs on call could assume responsibility for ambulance and equipment maintenance.

3) The Tok EMS Council might wish to arrange a meeting with members of the Delta Junction EMS Council in the near future. Since the latter has functioned during a pipeline impact period, its members can appropriately advise the Tok group on planning for gas pipeline impact and in generally becoming an effective community organization.

4) The EMS Council should maintain close contact with Northwest Alaskan Pipeline Company planners and be advised of any medical service plans which affect either the EMS providers or community medical services in general. Northwest is encouraged to assist in the provision of equipment and supplies to the EMS Council and Tok Ambulance Service.

   Northwest's utilization of local EMS resources might be more cost-effective than the introduction of services which duplicate those already available. This would also reflect Northwest's concern for the impact it will have on local communities and its interest in developing a close working relationship with Upper Tanana residents in the years ahead.

   The most urgent supply and equipment needs of the EMS Council at this writing include an ambulance, radio communications equipment and perhaps special vehicle extrication gear.

5) The EMS Council and Northwest should join forces in the development of a cooperative medical emergency evacuation plan. Northwest may be better prepared than Tok to evacuate emergency cases via aircraft; conversely, Tok may be better prepared to respond to less critical emergencies in a more cost-effective fashion. Both parties should also consult local air charter services and the Bureau of Land Management (which utilizes small aircraft and helicopters during the summer months) in the development of any emergency plan.

6) Evacuations of emergency cases from some Upper Tanana villages have been unduly delayed on occasion, in the opinion of some villagers. Although little can be done to facilitate more immediate response to village emergencies (becuase of variable weather conditions and AANHS regulations), steps can be taken to improve the current situation.

   First, permanent village residents can be encouraged to complete training in advanced First Aid, CPR, and/or EMT, when such training is available. The presence of trained personnel in the villages can reduce the time necessary to respond to emergencies and increase the potential for saving lives that might otherwise be lost.

Second, Community Health Aides should be authorized to request medical evacuation via aircraft in the case of obvious life-and-death situations. The time invested in phone calls to Tok or AANHS might be better spent in attending to the patient and in immediately requesting an airplane.

7) The EMS Council should sponsor and encourage community participation in educational training programs in Upper Tanana communities. These programs should be designed to create more awareness of emergency problems and appropriate responses to them, in the absence of fully-trained personnel. This program would also assist the EMTs in maintaining the upgrading their own skills. Northwest is encouraged to contribute to any such programs, in the form of educational materials or grants to be used for their procurement.

Upper Tanana Regional Council on Alcoholism (UTRCA)

1) UTRCA should carefully assess both its current strengths and weaknesses, and concentrate on improving those areas where deficiencies are most significant. An outside and impartial program evaluator having sensitivity to the delivery of services in rural Alaska might be more appropriate than a current staff member. Whatever strategy is deemed most appropriate, action should not be unduly delayed, if the program intends to function effectively during the gas pipeline impact period.

2) Continued growth in the region will undoubtedly contribute to increases in UTRCA's clientele. At some point an inpatient/detoxification center may be called for, especially if mental health counseling services are established. Such a center will not resolve alcohol/drug abuse problems but will enhance efforts currently exerted by counselors to assist those attempting to "dry out" or "get straight." Such a center may encounter community resistance but remains a viable feature of treatment programs. Concerned citizens may consider development of an Alcoholics Anonymous chapter as well.

3) As assessment of the effectiveness of village counseling services could identify the primary needs in this category of UTRCA services. Counselors currently employ a variety of strategies designed to keep their clients on the wagon, including the espousement of Christian teachings and extolling the virtues of being a sober and dilligent worker. Counselors in each village should prepare a list of their clients and divide it in two categories: those with whom they have realized some success and those who have not responded to their efforts.

Careful examination of this list might reveal patterns which account for the counselors' successess/failures. For example, kinship patterns might limit or enhance the effectiveness of a counselor with particular clients. Some clients are less responsive to a male than female counselor, and some counselors may not be well-respected by other village residents. Whatever the case, either new counselors or new counseling strategies may be called for in some instances.

This is not intended to underestimate the value of native counselors. As Segal (1973:53) has observed in rural mental health centers, indigenous non-professionals have time and again proved their ability to deal with specific functions formerly restricted to persons with formal professional training. On the Northern Cheyenne Indian Reservation in Montana, for example, Northern Cheyenne mental health workers participated in a program which trained them to serve as intermediaries between outside professionals and the reservation population (which has experienced very high rates of alcoholism and suicide). Trainees alternated their time between academic training at the state university and work on the reservation under the supervision of mental health personnel. The Northern Cheyenne Tribe operates and evaluates this program, which is designed to meet their specific needs and those of other Plains Indian reservations (Segal 1973:151). Perhaps a similar arrangement could be coordinated between UTRCA, TCHA and an academic training program. UTRCA might also wish to affiliate with a regional center through which specific kinds of mental health professionals could be called upon to intervene in particularly troublesome cases.

4) UTRCA should continue its school education programs and encourage other agencies to participate in these health education endeavors. Since alcohol and other drug abuse problems will increase during the impact period, Northwest may wish to contribute to and participate in these programs as well.

5) Caution must be exercised in introducing new or expanded programs which cannot be continued after the pipeline impact period. Short-range programs can only be effective if they are not suddenly defunded and leave the community without services on which it invested both time and energy, and with which it found measures for reducing alcohol-and other drug-related problems.

6) The nature of Alaska native alcohol problems and the difficulties encountered in dealing with them are clearly stated by Molinari (1976:4):

"Efforts to assist Native communities in bush areas must address not only the immediate alcohol problem, but also root factors in the milieu in which that problem is found: remoteness, severe climate variations, language differences, and a distinct Native lifestyle and experience. Alaska Native alcoholism and alcohol abuse are a very distinct and complex problem because the effects of alcohol misuse compound, and in turn are compounded by, the rapid disruptive sociological changes being forced upon the Native as the white man's civilization spreads its influence even into the Alaskan wilderness."

Mental Health

1) I remain puzzled by the State's continued denial of funds to the Tok region for a mental health program. The single statistic of four suicides in the area in approximately one year should in itself be sufficient grounds to indicate a serious need for counseling services. The State did approve the grant application submitted in 1978 but

gave it low priority for funding and then apologized when the monies ran out. Despite the fact that "emergency funds" were discovered to fund some programs in a similar "approved but not funded in the first go-around" status, and some political trade-offs permitted some additional projects to become operational, the Mental Health grant from the Tok region apparently lacked the political backing or necessary sponsorship. This is particularly unfortunate situation for a region already experiencing serious mental health problems and attempting to plan for a major development project.

A trained counselor capable of attending to the needs of both rural native and non-native clients who exhibit a wide range of mental health problems is sorely needed. This person could form a critical link between the community and medical and social service providers. Any mental health program that is developed must build on existing program strengths in the Upper Tanana region and concentrate on filling current gaps in service delivery.

2) Tanana Chiefs Health Authority (TCHA) must also give higher priority to the Upper Tanana region in its disbursement of funds for mental health program. Gas pipeline construction will be especially disruptive in native villages, since they stand to lose the most and gain the least overall. TCHA must not delay the introduction of mental health services any longer than is absolutely necessary.

3) Gas pipeline construction will increase the need for mental health counseling for both community residents and pipeline employees. For a mental health program to be effective, it must be implemented far enough in advance of pipeline construction to allow it sufficient time to develop to its full potential.

Dental and Visual Services

1) A community group, such as the Tok Clinic Board, should actively solicit more regular visits by dentists and optometrists/opthalmologists. The infrequent visits by these professionals are doing little more than meeting critical needs. Few Upper Tanana residents can afford either the time or money to travel to Fairbanks or Anchorage to attend to all their dental and visual needs. One obvious strategy is to encourage the dentist in Delta Junction to schedule regular visits to Tok upon completion of the clinic addition. Perhaps a similar arrangement could be made with a visual specialist from Fairbanks.

Upper Tanana Development Corporation (UTDC)

1) UTDC should continue both its senior citizen programs and those intended for the low-income and native peoples in the region. The hot lunch program and transportation services are especially valuable endeavors, and unmatched in other rural areas of the State. These serve to improve the "quality of life" for those who are participants; not only do the lunches assure seniors of at least one nutritionally-balanced meal per day, but the camaraderie provided by bus rides and sharing meals with peers surely enhances the

seniors' mental health. The role of the bus driver and aides as information and referral resources also assists seniors in resolving a range of problems. In a sense, then UTDC is actively contributing to both the mental and physical well-being of senior citizens. One potential disadvantage of this program, especially among the native participants, is the increasing dependence created on federal programs, coupled with decreasing kin responsibility for their elders. However, in view of the rapidly-changing Athapaskan culture, one cannot easily draw the line between what are kin and federal responsibilities.

2) UTDC should attempt to expand its services to include (a) as yet unserved or underserved regions within its catchment area; and (b) innovative social and recreational programs which bring together seniors from throughout the region. For example. seniors might be interested in organizing a "crafts fair," in which they demonstrate their skills in making crafts and sell the finished products to tourists.

3) UTDC's continued involvement in pipeline impact advocacy is essential for the Upper Tanana region. Careful monitoring of socioeconomic affairs, including health and social services, is a critical function which is best administered through a community-oriented agency. Although some individuals take issue with UTDC's advocacy role and the stands its Director has taken on certain pipeline issues, such a perspective is necessary for balancing the views of the pro-development advocates, who may not always carefully assess the long-term or sociocultural implications of their position. Poorly planned development and its concomitants can seriously disrupt the mental and physical health of community residents.

Health Education

1) Health education programs in all Upper Tanana communities warrant top priority in the immediate future. Since many of the current and projected health problems are those which can be avoided or minimized through preventive programs, the value of health education should not be underestimated. Several programs come to mind: occupational safety; highway safety; sanitation and solid waste disposal; water contamination; and communicable disease.

2) Health education programs and materials utilized in local schools should be updated and revised, so as to make them current and more effective. Important topical areas in addition to those already mentioned above include family planning, venereal disease, drug and alcohol abuse, bicycle and automobile safety, hypothermia, and public health. I am not implying that current programs are inadequate, for I have not had the opportunity to examine them in detail; instead, I am suggesting that current efforts be continued and expanded wherever possible.

Sanitation

1) Continued growth in the Upper Tanana region will make more difficult the State Sanitarian's responsiblity of effectively monitoring those services under his jurisdiction. Placement of a second Sanitarian

in Delta Junction and realignment of service areas would be a positive step forward in this regard.

2) Both the State and Northwest Alaskan Pipeline Company should work together in the planning and construction of pipeline camp facilities in the region. This will help to ensure that high public health standards are maintained, that State laws are followed, and that the two parties develop a cooperative working relationship during pipeline construction.

3) In the course of continued population growth in the Upper Tanana region, a careful assessment of sewage and solid waste facilities must be completed. At least one village experienced problems with its sewer system which significantly increased the potential for the transmission of infectious diseases. In Tok and other communities, periodic water quality tests should be made to ensure that seepage from privies and septic tanks is not entering domestic water supplies.

Northwest Alaskan Pipeline Company

1) One intent of this report is to provide Northwest with general information about Upper Tanana communities which can assist the Company in developing its medical services program. The previous recommendations in this chapter identify potential roles for Northwest in entering into cooperative planning with these communities.

2) Appendix I is a copy of written testimony I submitted to the State Pipeline Coordinator Office at a public hearing held in Tok in August 1978. These comments are directed to the "Health and Social Services and Facilities" section of the Proposed Alaska Natural Gas Transportation Systems Stipulations for Alaska, and accompanied my oral testimony at that hearing. In the course of developing its medical services program, I encourage Northwest to review these comments, which raise numerous questions about the draft stipulations.

X

SUMMARY

The September 1978 issue of Alaska Industry magazine featured an article entitled "Another Pipeline in the Offing--and Tok's Not Sure It's Ready" (McKinney 1978). One could reasonably ask whether any community is every "ready" for rapid socioeconomic change and boom/bust development! In terms of medical services alone, however, Tok and the surrounding region are especially ill-prepared to deal with a substantial population increase created by pipeline activities. Yet the Upper Tanana communities have two distinct advantages over their counterparts impacted by the Alyeska Oil Pipeline: sufficient time to plan for the projected and unanticipated impacts, and some protection under stipulations directing Northwest Alaskan Pipeline Company to address environmental, technical and socioeconomic issues in its planning and construction of the pipeline. Neither factor is automatically advantageous, for procrastination will quickly consume the time now available for planning, and the stipulations (in draft form at this writing) are worded so vaguely as to render them subject to a range of interpretations. Further evidence suggests that Northwest may be more interested in negotiating with the State Pipeline Coordinator's office to narrow the scope of stipulations - rather than identifying measures with which pipeline impacts can be addressed.

A review of this report may reveal omissions which are necessary components of any appropriate health planning endeavor. For example, I intended to present mortality, morbidity and disability indicators--all basic to health status assessment--but these are not readily available for the Upper Tanana region; in combination with similar statistics for NAHRA's catchment area, such figures could be misleading. Furthermore, the lack of consistency among health care providers in reporting disease occurrence, and many instances which are not reported at all, would lessen the quality and value of such data (cf. NAHRA 1978b:20).

An even more basic problem is the absence of current demographic statistics for the Tok population for use in preparing a population profile. The population has more than doubled since the 1970 census and its character has probably changed as well. Time constraints did not permit me to undertake at least a superficial census count.

The Upper Tanana region should proceed with its current health service plans and not sit idle while waiting for Northwest to announce its medical services program. Such important activities as the clinic expansion, community health education and emergency medical service training should not be postponed. I would encourage Upper Tanana medical and social program personnel to maintain open lines of communication with Northwest's socioeconomic advisor (or other persons involved in medical planning) and keep the company informed of their activities. Similarly, Northwest, must develop a medical

program at the earliest possible date and announce its plans to Upper Tanana communities. Such plans will hopefully not be finalized without prior consultation with community service providers. This coordination is fundamental to the establishment of a beneficial working relationship between the two parties.

I generally favor specific aspects of a "comprehensive community approach" to health planning for the Upper Tanana region. While this strategy is intended for application in developing countries, rural communities in Eastern Interior Alaska do not differ markedly on some counts with those outside North America. Feuerstein (1976:41) defines the "comprehensive community approach" in these terms:

> This approach is one by which individuals and communities are helped to perceive, within the context of the national health plans, (that is the need to change belief and/or behaviour in order to increase the incidence of good health) and aided to remedy them by the utilization of internal and external resources. The long term aim is improved rural health conditions and services, the responsibility for whose organization and maintenance rests largely with rural communities themselves.

Feuerstein discusses eleven characteristics of this approach, several of which have applicability to health planning in the Upper Tanana region. As a way of summarizing this report and offering recommendations for future health planning research, I discuss several of these characteristics.

1) Health activities occur within the context of planned national development. The most appropriate rural health programs in Eastern Interior Alaska must take into account the development activities in the region. The key question is "What kinds of health needs will be created or intensified by energy development and its concomitants?"

   This report has addressed this question and has hopefully offered some guidance for health planners. Additional research focusing on the logistics of health service delivery can identify methods by which the various agencies involved in health care can work in cooperation.

2) An appreciation of the socio-cultural context in which health activities occur is considered essential. Two very distinct cultures reside in Eastern Interior Alaska, and each possesses distinct health beliefs and practices. Appropriate health planning must not view health care in a vacuum; instead, an understanding of Euro-american and Athapaskan cultural practices which impinge upon health-seeking behavior is essential. In general terms, health beliefs and practices must be examined in the total cultural context, if programs are to have meaning and gain general acceptance.

3) There is an appreciation of the fact that communities have distinct, valued and time-tested beliefs and practices related to health and disease. This is essentially an extension of the preceding characteristic and calls for cultural sensitivity on the part of health planners.

Many people will not simply discard traditional practices in favor of new and locally-untested methods that are purported to be effective. The mere fact that a particular program has gained success in urban or other rural communities does not imply that it will be equally effective and well-received in the Upper Tanana region.

4) The simultaneous involvement of all or many sections of the community at each phase of the approach is seen as contributing to its long term effectiveness and minimizing the disruptive effects of change. In short, community involvement in health planning is likely to enhance the acceptability of new health programs. An obvious step is a consumer survey encompassing a wise range of inquiries which address health practices, beliefs, and desires. A second step is to involve local residents in the implementation of those programs which they helped to design.

5) Research and evaluation are considered an integral part of the approach. The importance of education is emphasized, and changes in attitude are considered as of similar and on occasion of greater significance than material change. Research and evaluation will increase the likelihood that programs are effective and implemented at the lowest possible cost. The value of this ongoing process cannot be overemphasized, especially in rural communities whose health problems are most susceptible to change in the course of socioeconomic change.

NOTES

Chapter 1

/1/ Portions of this chapter are derived from Alcan Pipeline Company 1976; Fairbanks Town and Village Association for Development, Inc. 1978; and Olson, Owen and Associates 1978.

/2/ A second Euroamerican community, Delta Junction, also lies along the proposed gas pipeline corridor, but is not considered an Upper Tanana community for purposes of this presentation. Time limitations also did not permit fieldwork to be conducted in that community.

/3/ The Alcan report was written when Alcan Pipeline Company was competing for the gas pipeline construction contract. Northwest has conducted very few of the studies listed as "essential" to minimizing adverse construction impacts.

/4/ Clinic expansion is scheduled for the summer of 1979, which emphasizes the importance of the timing of this decision to Tok and outlying communities in the Upper Tanana region.

Chapter 2

/1/ Patch and McMorrow (1977) and Wallman (1977) elaborate on the problems involved in defining development, and present a range of criteria which can serve as bases for the establishment of working definitions.

/2/ Lotz (1977) and Ritchie (1978) are among the numerous vocal critics of Berger's Mackenzie Valley Pipeline Inquiry. They question on several counts the accuracy of Berger's portrayal of the negative implications of energy development and pipeline construction in the Canadian North. Whether or not one concurs with the Berger Inquiry, the reports did present issues which had previously attracted little attention beyond the local level. Such a perspective is crucial in providing a more balanced view of the potential impacts of development.

Chapter 4

/1/ The community profiles in this chapter incorporate the author's findings with selected information from other sources.

/2/ Naylor, Gooding and Scott 1976.

/3/ Haynes 1977; Fairbanks Town and Village Association for Development, Inc. 1977.

/4/ Cook and McKennan 1970a and 1970b; Haynes 1977.

/5/ Woodman 1978; Fairbanks Town and Village Association for Development, Inc. 1977.

/6/ Graves 1913; Tatum 1913; Haynes 1977; Fairbanks Town and Village Association for Development, Inc. 1977.

/7/ McKennan 1959.

/8/ Haynes 1977.

Chapter 5

/1/ North Alaska Health Resources Association 1977, 1978a and 1978b.

/2/ Haynes 1978; Alaska Area Native Health Service 1978.

/3/ Tanana Chiefs Health Authority 1977a and 1977b.

/4/ Tanana Chiefs Health Authority 1978.

/5/ During the interim period after the physician left in 1975 and before the first PA arrived in 1975, the Itinerant Public Health Nurse responded to most calls for emergency medical assistance. At least two physicians also explored the possibilities of setting up practices in Tok during this same general time period.

/6/ Short 1978; Taylor 1978.

/7/ Wihlborg 1978; Haynes 1978.

/8/ Eshbaugh 1978b.

/9/ Tanana Chiefs Health Authority 1978a and 1978b; Westwick 1976.

/10/ See Westwick 1976. There is some question as to the actual extent of a State PHN's involvement in this supervisory capacity.

/11/ Olson, Owen and Associates 1978.

/12/ Eshbaugh 1978a.

Chapter 8

/1/ Hardie 1978; Zoller 1976; Fison and Quisenberry 1977; Fairbanks North Star Borough 1976.

/2/ Ressler 1978; Faith Hospital 1978; Jones 1976; Zoller 1976.

/3/ Ryther 1978.

APPENDIX I

(1) Portions of the socioeconomic stipulations prepared by the Alaska Executive Coordination Committee for public comment.

(2) The author's written comments on selected stipulations addressing health and medical services, submitted at August 1978 Public Hearing in Tok.

JUNE 30, 1978

PROPOSED

ALASKA NATURAL GAS TRANSPORTATION SYSTEM STIPULATION FOR ALASKA

PREPARED BY THE

ALASKA EXECUTIVE COORDINATION COMMITTEE

DRAFT

NOTE TO REVIEWERS:

THE UNDERLINING REFLECTS THE FOLLOWING:

TRANS-ALASKA PIPELINE STIPULATION COLUMN	ALASKA INTERAGENCY DRAFT ALASKA NATURAL GAS TRANSPORTATION SYSTEM STIPULATION COLUMN	ALASKAN EXECUTIVE COORDINATING COMMITTEE
1. DELETIONS	1. PHRASES ADDED	STATE DIRECTOR, BUREAU OF LAND MANAGEMENT, CHAIRMAN
2. STIPULATION MOVED TO ANOTHER LOCATION	2. PHRASES CHANGED	DISTRICT ENGINEER, CORPS OF ENGINEERS
3. PHRASES CHANGED	3. NEW STIPULATION	DISTRICT CHIEF, UNITED STATES GEOLOGICAL SURVEY
		AUTHORIZED OFFICER, ALASKA PIPELINE OFFICE
		STATE PIPELINE COORDINATOR, STATE OF ALASKA
		ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY
		REGIONAL DIRECTOR, FISH AND WILDLIFE SERVICE

4. SOCIOECONOMIC

4.1. Lessee shall prepare and submit to the Pipeline Coordinator for approval within six months from the date of execution of this agreement a plan to avoid or minimize adverse and maximize positive local and regional social impacts which can reasonably be expected to be caused by the construction, operation/maintenance, and termination of the pipeline. The Lessee is encouraged to consult with appropriate State agencies in developing the plan. A statement outlining the costs the Lessee expects to incur in implementing these plans shall be included. The plan shall address, but shall not be limited to, the following:

4.1.1. Transportation (air, highway, road, water, and rail) including a description of the quality and capacity of existing local and State transportation infrastructure and the existing commercial carriers, the expected normal non-pipeline related growth traffic, as well as estimates of anticipated increases in capacity of the local and State infrastructure and carriers due to pipeline activity for the period between the issue of the lease and termination of construction.

4.1.2. Public Safety and Law Enforcement including:

4.1.2.1. A proposal to inform all employees of applicable criminal law and the jurisdiction of the Alaska State Troopers with regard to pipeline construction activities;

4.1.2.2. A plan to ensure timely compliance and cooperation in reporting criminal violations;

4.1.2.3. A proposal outlining the safety and security measures the Lessee will utilize.

* 4.1.3. Health and Social Services and Facilities including plans to:

* 4.1.3.1. Ensure the availability of adequate employee health care at each work site;

* 4.1.3.2. Provide for appropriate evacuation from work sites of employees in serious need of medical and/or psychological services;

* 4.1.3.3. Provide both medical and psychological screening of individuals prior to employment and/or assignment at an Alaskan worksite;

4.1.3.4. Provide an adequate troubled employees program which seeks to prevent or, where appropriate, to assist employees to manage problems pertaining to alcohol abuse, drug abuse or poor mental and physical health;

4.1.3.5. Minimize family and household disruption which is likely to occur as a consequence of pipeline employment conditions;

4.1.3.6. Cooperate with public and private health and social service agencies and providers to assure the effective delivery of services as well as the successful and coordinated execution of strategies for preventing increases in human service problems; and

4.1.3.7. Participate in monitoring health and social service impacts and in evaluating the effectiveness of the steps taken to manage those impacts;

4.1.3.8. Provide monthly progress reports on the plans developed in conjunction with section 4.1.3. of these stipulations to a citizen advisory panel established by the Governor (through the Pipeline Coordinator) for the purpose of advising him on the most appropriate courses of action.

4.1.4. Population including:

4.1.4.1. A detailed analysis of the projected pipeline work force with specificity as to the numbers, locations of employment, occupational categories, wage scales and expected duration of employment;

4.1.4.2. A detailed analysis of the associated primary and secondary population increase, both worker and dependent and its effect on housing, local schools, and community services, including, but not limited to, utilities and State park facilities by locality along the pipeline corridor.

4.1.5. Labor including:

4.1.5.1. Measures to ensure that qualified Alaska residents are hired and retained on a priority basis on the construction and operation/maintenance phases of the project;

purposes of inspecting the place of employment, conditions, structures, machines, devices and other matters to ensure compliance with occupational safety and health statutes, standards and regulations. Lessee hereby specifically consents to these inspections without prior notice.

4.2.3.3. At least once during each 12 month period, the Lessee shall ensure that it and all of its subcontractors request the Alaska Department of Labor, through the Pipeline Coordinator, to perform a voluntary occupational safety and health inspection of each place of employment, conditions, structures, machines, and operations.

4.2.3.4. Lessee shall ensure that qualified Alaskan residents are hired and retained on a priority basis for the pre-construction, construction, and operation/maintenance phases of the project.

4.2.3.5. Lessee shall establish a manpower delivery system which will coordinate statewide training, recruitment, and referral services for the pre-construction, construction and operation/maintenance phases of the project.

4.2.3.6. The Lessee will develop an information system, or provide funding to the Alaska Department of Labor to do so, to help ensure that qualified residents are hired and retained during the pre-construction, construction, and operation/maintenance phases of the project on a priority basis. Development of the information system will also include a survey of villages in Alaska to determine those individual workers available for hire on the project. Sufficient information will be collected to provide a preliminary screening for hire and a statistical picture of number, location, and occupation of the unemployed and how their numbers might be decreased by the project. The expected project impact on local hire will be defined and measured prior to go-ahead, and monitored, measured, and reported throughout the life of the project.

4.2.3.7. The Lessee will assure that its contractors register with the Employment Security Division of the Alaska Department of Labor for Unemployment Insurance Contributions and with the Department's Research and Analysis Section for participation in the Bureau of Labor Statistics' labor force estimating and occupational employment statistics programs.

COMMENTS ON THE

"PROPOSED
ALASKA NATURAL GAS TRANSPORTATION SYSTEM STIPULATION FOR ALASKA
PREPARED BY THE
ALASKA EXECUTIVE COORDINATION COMMITTEE"

FOR PRESENTATION AT:

PUBLIC HEARING
TOK, ALASKA
10 AUGUST 1978

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My name is Terry L. Haynes. I am a Ph.D. candidate in the Medical Anthropology Program at the University of California Medical Center in San Francisco. This summer I am conducting a health services study in the Upper Tanana region in Eastern Interior Alaska. This study is designed in part to assess the impacts that gas pipeline construction will have on medical services in this region. Specific inquiries are being made into residents' concerns in this regard, and the adult population is being encouraged to identify service strengths and weaknesses, so that appropriate planning activities can begin.

On the basis of this information and that derived from a review of the literature which addresses the social and health implications of large-scale, "boom" development, I intend to propose a series of recommendations to serve as guides to future health planning efforts in the Upper Tanana region. This report will be completed in the fall of 1978 and should offer some guidance to both the State Pipeline Coordinator's Office and Northwest Alaskan Pipeline Company. I request that this report be examined before the final socioeconomic stipulations and site specific terms and conditions are prepared.

I am pleased to see a section addressing socioeconomic issues in the Proposed Alaska Natural Gas Transportation System Stipulations for Alaska. This will ensure that the lessee take a more active role in minimizing the negative, and maximizing the positive social impacts of gas pipeline construction and related activities. My comments are directed to Section 4.1.3. (Health and Social Services and Facilities) and to one provision in Section 4.2.3. (Labor); they essentially request clarification of these stipulations. In order for meaningful site specific terms and conditions to be developed, the general stipulations should be broad in scope, yet specific enough to offer sufficient direction to the lessee. Furthermore, the site specific terms and conditions must be issued far enough in advance of construction activities to permit local services to adequately prepare for their role in service provision.

Comments on Stipulations:

4.1.3. HEALTH AND SOCIAL SERVICES AND FACILITIES

4.1.3.1. Lessee should identify more specifically the manner in which "the availability of adequate employee health care at each work site" will be accomplished. What services will and will not be provided for at each work site? To what extent will local communities be involved in the provision of medical services?

Will employees' medical expenses be covered when they are off the work site? Assurances must be made to local communities that the lessee will assume financial responsibility for any medical or social services rendered to gas pipeline employees who require medical treatment or other assistance for illnesses, accidents, injuries, etc., which occur off the work site.

4.1.3.2. Once again, will local services and personnel be involved, and to what extent? Will provisions be made requiring the lessee to work in conjunction with local emergency medical personnel in developing a "disaster" plan, in the event of multiple-injury accidents?

4.1.3.3. Criteria utilized in screening potential employees should be established and specified as soon as possible. Will the screening process differ for local and non-resident applicants? Will medical and psychological screening be required of all prospective employees? Where will the screenings be conducted? Will local residents be required to travel at their own expense for these screenings? On what basis will applicants be refused employment and will grievance procedures be developed?

4.1.3.4. This provision has merit but is worded in such vague terms that its actual meaning is unclear. What is an "adequate" troubled employees program? To what extent will the lessee be required to "prevent" or "assist" in the management of alcohol and drug abuse, and poor mental and physical health problems?

4.1.3.5. Can the conditions of pipeline employment be so designed as to minimize the potential for family and household disruption in advance? A preventive strategy is far superior to efforts to resolve such problems, although both preventive and corrective measures must be planned.

4.1.3.6. How does the lessee intend, or to what extent will the lessee be required to "cooperate with public and private health and social service agencies and providers" in assuring effective service delivery? Who will be responsible for monitoring these activities and enforcing the established terms and conditions?

4.1.3.7. For the lessee to "participate in monitoring health and social service impacts and in evaluating the effectiveness of the steps taken to manage those impacts" leaves numerous questions unanswered. Who will administer the monitoring and evaluation measures? What attempts will be made to correct deficiencies and/or to introduce new mitigation measures? How will the lessee participate in this process? Will the lessee be required to enact measures to mitigate impacts?

4.1.3.8. Who will comprise the "citizen advisory panel" and will local representation be guaranteed? What assurances do local residents have that "the most appropriate courses of action" recommended to the Governor will be acted upon? Can measures be taken to facilitate immediate action recommended by the citizen advisory panel? If not, such a panel would appear to have little more than token value.

4.2.3. LABOR

4.2.3.3. Is one voluntary occupational safety and health inspection during "each 12 month period" often enough to ensure employee safety? Does the "request...to perform...inspection" guarantee that one will actually be performed and deficiencies corrected?"

Additional Comments:

(1) Whether or not the lessee utilizes local health and social services, it will indirectly create increased demands for these services. This in turn will affect the quality of services rendered. Efforts must be made to ensure that local residents do not suffer a decline in service quality because of the increased population in the region.

(2) The lessee is advised to coordinate its health and social service planning activities with those currently underway or proposed in Upper Tanana communities. This will require the lessee to promptly determine to what extent it intends to utilize local services; this, in turn, will ensure that both the lessee and local communities have adequate time to plan for these services.

(3) There is no specific provision in the proposed stipulations for ensuring that sanitation will be carefully monitored and high standards maintained. Public health dangers to pipeline personnel and local residents are threatened by improper waste and sewage disposal, water treatment, and food preservation and preparation practices.

(4) Inadequate mental health services are currently an area of concern to Upper Tanana residents and are a primary unmet need in the region. The added stresses which accompany large-scale Northern development will compound existing problems in the region and introduce others: alcohol-related injuries, injuries due to violence, crowded and inadequate housing, high cost of living, isolation, cold and dark winters, separation from family and friends, transiency, etc. While the State and local communities must bear some responsibility for providing mental health services, the lessee must also participate in this crucial endeavor.

(5) Establishment of a Crisis Intervention Center in the region for at least the duration of pipeline construction is recommended as one step in mental health service provision. The lessee will perform an invaluable service to its own employees, prospective employees and local residents by taking steps to ensure that such a facility is established; the Center should be established far enough in advance of construction activities to allow residents and various State agencies to be advised of its programs and objectives. The Center could offer assistance to those in need of information and services; the extent of the Center's involvement in service provision would necessarily depend on the availability of services administered and carried out through other programs.

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ADDENDUM

Several important events took place during the first half of 1979 which relate directly to the content of this report. This addendum is designed to summarize these recent occurrences and to enhance the utility of this report as a planning guide and information resource. When applicable, the page number(s) corresponding to sections of the main text which pertain to the information below, are added for the reader's convenience.

(1) An information packet prepared by Northwest Alaskan Pipeline Company and dated 15 May 1979 contains several fact sheets with information pertinent to this report.

(a) A revised timetable for completion of the Alaska Natural Gas Transportation System (which remains tentative and subject to further alterations) is as follows:

Design and Planning----------1979-82
Camp Preparation----------1981-82
Civil Construction---------- 1982
Pipeline and Compression Station Construction-----1982-84
Project Completion----------Late 1984

The Company adds, however, that "Success in meeting this timely schedule is dependent upon Federal and State of Alaska decisions necessary to permit financing to be obtained and construction to commence."

(b) Northwest is considering utilization of the former Alyeska temporary construction camps and expects to establish three new temporary camps between Delta Junction and the Canadian border. The tentative sites are located northwest of Dot Lake; north of Tok; and south of Northway Junction. All three sites are near existing native villages.

(c) With regard to socioeconomic stipulations, Northwest commented that, "as agent and operator for the companies sponsoring construction of the pipeline in Alaska, (Northwest) believes that comprehensive socioeconomic planning is an important element of project planning. In October 1978, Northwest established its Department of Socioeconomic Affairs to coordinate company efforts on socioeconomic matters and on March 30, 1979, Northwest submitted its recommendations for socioeconomic stipulations to the State Pipeline Coordinator's Office. We are hopeful that this planning--coupled with experience gained during the oil pipeline project--will better enable us to work with the State and communities to minimize adverse and maximize positive socioeconomic impacts of this project."

The State of Alaska published a draft set of socioeconomic stipulations in June 1978, held statewide hearings for the purpose of soliciting public input on these stipulations in August 1978, and received written testimony until 25 August 1978. Revised stipulations were scheduled to be released shortly thereafter, but the State Pipeline Coordinator's Office determined that additional public input was needed. Now, nearly one year later (30 June 1979) the revised stipulations have finally been released. I have not yet examined the revised stipulations, but learned from a reliable source that they are little improved from their original form.

Such a lengthy delay in releasing the stipulations is not in the best interests of either Northwest, the State of Alaska, or pipeline corridor communities. Further public hearings are slated for the fall of 1979, which may delay even longer the release of final socioeconomic stipulations and severely limit socioeconomic planning in 1979. Bureaucratic machinery is once again blocking important preparatory work as the initial stages of the pipeline construction project approach. (See Appendix I)

(2) The U.S. Department of the Interior released its Stipulations for the Alaska Natural Gas Transportation System on 7 May 1979. These stipulations address the general environmental and technical requirements which the Department deems necessary "in the right-of-way grants in order to protect the environment, public health, safety, and the integrity of the pipeline." Almost no attention is directed to health and safety, presumably because these are addressed in the State socioeconomic stipulations. The actual relationship between State and federal stipulations is not clearly stated (e.g., which takes precedence?).

(3) Two recently-published reports addressing the socioeconomic impacts of pipeconstruction will serve as useful resources during planning of the Alaska Natural Gas Transportation System.

(a) Holly Reckord, A Case Study of Copper Center, Alaska. Alaska OCS Socioeconomic Studies Program, Technical Report Number 7 (February 1979). This report is an excellent assessment of the social, cultural, and economic changes occurring between 1974 and 1978 in Copper Center as a consequence of Alyeska Oil Pipeline construction in the region. Reckord, an anthropologist by training, resided in Copper Center, an Ahtna Indian village in the Copper River Valley, for several months or longer each year between 1973 and 1978 (following a year of continuous residence in 1972-73), thereby gaining firsthand insights of the culture and changes occurring there. She is to be commended for having conducted a thorough and systematic study which contributes significantly to the scant literature addressing pipeline impact in rural Northern communities. Reckord's in-depth study can serve as a model for the examination of changes to be witnessed in the Upper Tanana region during the 1980's. She will hopefully continue her work in the Copper Center region and add to our understanding of the longer-term impacts which accompany major energy development projects in rural areas.

(b) Carol Buge', Preliminary Views: Preparing to Meet the Impact of a Gas Pipeline in the Upper Tanana Area of Alaska. Western Interstate Commission for Higher Education, Boulder, Colorado (1979). Buge's twelve-week internship during the summer of 1978 with the Upper Tanana Development Corporation focused on a preliminary analysis of the Athapaskan village of Tetlin. In Part I she describes the region and summarizes historical developments which have impacted the Upper Tanana region. Part II presents a community profile of Tetlin and records the results of a land use survey, illustrating the vital link between environment and culture. Finally, Buge' reviews the socioeconomic stipulations prepared by the State of Alaska in 1978 and offers suggestions for their improvement.

(4) Susan Fison, Director of Socioeconomic Affairs for Northwest Alaskan Pipeline Company, informed me that this report would serve as a useful resource for health and social service planning during the pipeline impact period. Planning cannot begin, however, until the State's socioeconomic stipulations have been approved. Ms. Fison provided me with population statistics for the Upper Tanana region which complement those presented on p.18 of this report:

COMMUNITY	APRIL 1960[a]	APRIL 1970[b]	DECEMBER 1978[c]
Dot Lake	56	42	82
Healy Lake	NA	NA	10
Living Word Commune	--	--	185
Northway	196	230	336
Tanacross	102	84	111
Tetlin	122	114	115
Tok	129	214	802
Nabesna	41	4	0
Unspecified Places[d]	186	363	0
Tok Area Subtotal	832	1051	1641
Chicken	28	32	37
Eagle City	92	36	60
Eagle Village		67	66
Taylor Hwy Subtotal	120	135	163
Mentasta Area Subtotal	40	68	133
TOTAL	992	1254	1937

[a] 1960 Census Data Worksheet Summaries, supplied by Dr. George W. Rogers, Institute of Social and Economic Research
[b] 1970 Census Atlas, "Population by Enumeration District," State of Alaska, Department of Labor
[c] 1978, U.S. Public Health Service figures
[d] Individuals counted in "Unspecified Places" are thought to reside in the area surrounding Tok

(5) Turning now to medical services in the Upper Tanana region, several noteworthy events have occurred thus far in 1979:

(a) As noted in this report, the Delta Dental Clinic in Delta Junction opened late in 1978 and is now serving Alaskan Natives eligible for services via contractual arrangements with the Alaska Area Native Health Service. This is particularly significant in light of the entire Northern region of Alaska's recent designation as a dental manpower shortage area (see the 1979 Health Systems Plan for Northern Alaska, prepared by the Northern Alaska Health Resources Assocation, Inc., Fairbanks). The Plan also indicates that the backlog of native dental patients is an especially critical problem. The actual impact that the Delta Dental Clinic will have on dental health in the Upper Tanana region cannot yet be measured, although services might now be more accessible to area residents. (see p.75)

(b) The Mukluk News (Tok, Alaska, 7 June 1979) reported that the State Legislature finally approved a $57,000 mental health services grant request for the Tok region. This grant will be used to recruit a clinical psychologist for an eight-month startup program, scheduled to begin in November 1979. According to the Tok Area Interim Mental Health Board, the psycholgist will work with individuals referred through social service agencies, schools, and the court system. The Board ultimately hopes to provide individual services and to supplement State funds with Medicaid and other third-party payments.

Development of this mental health program could not come at a more opportune time. A psychologist having experience in rural Alaska or who is sensitive to the pattern of life in bush communities can hopefully be recruited for this position. (see pp.74-5)

(c) The physician assistant (PA) working in Tok at the time this report was written has since resigned. His replacement began work in April 1979, and continues to work under the auspices of the Tanana Valley Medical-Surgical Group in Fairbanks.

(d) Construction began in May 1979 on a 24' x 36' addition to the Tok Community Clinic. The addition will house a new x-ray machine purchased from the Seward Hospital, with remaining space to serve as an expanded emergency room. The former x-ray room is to be used by visiting specialists or, if needed, as an additional patient examination room. Completion of this much-needed addition is scheduled for the summer of 1979. (see pp.29-30, 70)

(e) The Health Aide Supervisor hired by Tanana Chiefs Health Authority for the Tok Subregion last autumn has resigned. I am not aware of the circumstances surrounding her resignation, nor of the potential implications on the activities of Village Health Aides. We can hope that a replacement will be found or that another mechanism is developed for providing ongoing supervison and training for the Health Aides. (see pp.29, 32-34)

(f) The registered nurse employed at the Tok Community Clinic since 1975 has been selected as one of 20 students for the Fall 1979 MEDEX Program at the University of Washington in Seattle. Following six months of classroom instruction, she will spend an equal period working under the supervision of a physician preceptor in Fairbanks. She eventually plans to return to Tok to serve as a relief PA.

(g) In July 1978, the Itinerant Public Health Nurse (IPHN) stationed in Tok learned that she could no longer conduct comprehensive gynecological examinations until completing additional training. For six months she sought temporary exemption from this ruling until the required training could be obtained in a certified program, but recently dropped this important service. However, many of her clients wrote letters of support to the State, which prompted the State to assist the IPHN in her quest for further training. She plans, later in 1979, to enter a Nurse Practitioner Program in Los Angeles oriented to women's health care. Following four months of didactic training, she will serve an eight-month preceptorship in an urban Alaskan community. (see pp.31, 71)

This the Upper Tanana Region will lose, at least temporarily, the services of two skilled health professionals. Equally well-trained personnel will presumably serve in their absence, but whether they will be able to

offer the same degree of personalized care is open to speculation. Both practitioners will hopefully return to Tok with their added skills and enhance the availability of quality medical services in the Upper Tanana region prior to the onset of pipeline construction.

(h) Fourteen Tok area residents enrolled in Emergency Medical Services training in May 1979, with seven persons completing EMT-II requirements and thus becoming eligible to administer injections to critically injured patients during ambulance and medevac runs. Numerous other residents have EMT-I status, thereby providing the Tok region with a capable staff of EMTs. Their presence may be quite important during the pipeline impact period and in the course of continued growth and development in the Upper Tanana region. (see pp.30-1, 71-3)

This intern report was read and accepted by a staff member at:

Agency: Upper Tanana Development Corporation

Address: P.O. Box 459
Tok, Alaska 99780

This report was completed by a WICHE intern. This intern's project was part of the Resources Development Internship Program administered by the Western Interstate Commission for Higher Education (WICHE).

The purpose of the internship program is to bring organizations involved in community and economic development, environmental problems and their students in the West for the benefit of all.

For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

WICHE is an organization in the West uniquely suited for sponsoring such a program. It is an interstate agency formed by the thirteen western states for the specific purpose of relating the resources of higher education to the needs of western citizens. WICHE has been concerned with a broad range of community needs in the West for some time, insofar as they bear directly on the well-being of western peoples and the future of higher education in the West. WICHE feels that the internship program is one method for meeting its obligations within the thirteen western states. In its efforts to achieve these objectives, WICHE appreciates having received the generous support and assistance of the National Endowment for the Humanities, the Economic Development Administration and by more than one hundred and fifty community agencies throughout the West.

For further information, write Resources Development Internship Program, WICHE, P. O. Drawer 'P', Boulder, Colorado 80302 or call (303) 443-6144.

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