SOCIOECONOMIC IMPACT STUDY OF RESOURCE DEVELOPMENT IN THE TYONEK/BELUGA COAL AREA

ARLIS
Alaska Resources Library & Information Services
Anchorage, Alaska

DARBYSHIRE & ASSOCIATES
1981
SOCIOECONOMIC IMPACT STUDY
OF
RESOURCE DEVELOPMENT
IN THE
TYONEK/BELUGA COAL AREA

DECEMBER 1981

"This project was supported, in part, by funds from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, administered by the Division of Community Planning, Alaska Department of Community and Regional Affairs."

(Cover photo courtesy of Arctic Environmental Information and Data Center.)
December 28, 1981

Mr. Don Standifer  
President  
Tyonek Village Council  
Tyonek, Alaska 99682

Dear Mr. Standifer:

We are pleased to submit our final report, "Socioeconomic Impact Study of Resource Development in the Tyonek/Beluga Coal Area." This document and the accompanying Resource Development Proposals Map (in the pocket page at the rear of this report) provide an overview of the impending resource development in the vicinity of the community of Tyonek, its potential impacts, residents' attitudes toward resource development and, finally, strategies that the village may wish to follow in the coming development years.

We have also submitted final copies of the Tyonek Community Profile in concert with this report. This profile provides baseline information about the village of Tyonek as it is today. It should prove a valuable planning tool in dealing with the new developments that will be facing the village in the very near future.

It has been a pleasure to work with the Village Council on this project. We would like to express our appreciation especially to you, Don, for all of the time that you have contributed to this project.

Tyonek faces many challenges and opportunities as the focus turns to resource development in the Beluga area. It is our sincere hope that this body of work will assist the village in achieving its goals with respect to that development and the community's cultural, environmental and economic future.

Sincerely,

Ralph R. Darbyshire  
President
PREFACE

The Native village of Tyonek has expressed concern that a variety of resource development proposals in the Tyonek/Beluga area may wield some adverse impacts on village lifestyle and the traditional uses of the land.

The recent acceleration in the demand for fossil fuels other than petroleum has focused a lot of attention on the abundant natural resource deposits in the Tyonek/Beluga area. For the past decade at least, a variety of coal, natural gas (and oil) companies have been conducting extensive research into the nature and extent of the Beluga field deposits. Interest by the developing corporations has intensified in the past year as a result of the Pacific Rim Market's increased interest in purchasing Alaskan coal.

It is this increased interest and an accompanying increase in exploratory and planning activity by potential developers that provided the impetus for the initiation of this study. Reports published by some of the potential developers indicate that certain companies have fairly extensive plans. According to the proposed development scenarios, it is conceivable that large numbers of people could move to Tyonek/Beluga region within the next 5 to 10 years.

Obviously, if this level of development were to occur, it would impose many changes on the village of Tyonek (current population: 250).

In an effort to become more familiar with the plans of the potential developers in the area, the IRA council of the village of Tyonek asked the State of Alaska's Department of Community and Regional Affairs to assist the village in doing an impact analysis of the proposed development.

The Tyoneks wanted the following topics to be covered in the proposed study:

- a baseline overview of the Tyonek area;
- prospects for development in the area;
- a community survey of residents' attitudes;
- an analysis of community infrastructure capacity; and
- a community needs assessment.

First, the Department of Community and Regional Affairs (DCRA) received a grant to develop and administer a "Socioeconomic Impact Study of Resource Development in the Tyonek/Beluga Coal Area." Next it was decided that the village should retain consulting assistance in developing the impact study. A variety of local consulting firms responded to DCRA's request for proposals. Darbyshire & Associates was selected by the village council to conduct the study, and this project was initiated.
CHAPTER 1
PROSPECTS FOR DEVELOPMENT IMPACTS

Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>1</td>
</tr>
<tr>
<td>POTENTIAL SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF COAL DEVELOPMENT</td>
<td>11</td>
</tr>
<tr>
<td>POTENTIAL SOCIAL AND ECONOMIC IMPACTS FROM LARGE-SCALE COAL, OIL AND GAS DEVELOPMENT</td>
<td>12</td>
</tr>
<tr>
<td>POTENTIAL ENVIRONMENTAL IMPACTS FROM COAL DEVELOPMENT</td>
<td>13</td>
</tr>
<tr>
<td>OIL AND GAS EXPLORATION AND DEVELOPMENT</td>
<td>14</td>
</tr>
<tr>
<td>Introduction</td>
<td>14</td>
</tr>
<tr>
<td>POTENTIAL SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS FROM OIL AND GAS DEVELOPMENT</td>
<td>21</td>
</tr>
<tr>
<td>FISHERIES DEVELOPMENT</td>
<td>23</td>
</tr>
<tr>
<td>POTENTIAL HYDROPOWER PROJECT DEVELOPMENT</td>
<td>24</td>
</tr>
<tr>
<td>STATE LAND DISPOSALS IN THE TYONEK AREA</td>
<td>26</td>
</tr>
<tr>
<td>TIMBER DEVELOPMENT</td>
<td>27</td>
</tr>
</tbody>
</table>

CHAPTER 2
TYONEK SURVEY OF COMMUNITY ATTITUDES

INTRODUCTION

SUMMARY OF FINDINGS

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of Residency</td>
<td>2</td>
</tr>
<tr>
<td>Attitudes towards Village Life</td>
<td>4</td>
</tr>
<tr>
<td>Attitudes towards Representative Organizations</td>
<td>4</td>
</tr>
<tr>
<td>Attitudes towards Coal Development</td>
<td>5</td>
</tr>
<tr>
<td>Miscellaneous Findings</td>
<td>5</td>
</tr>
</tbody>
</table>
PROJECT DESCRIPTION

Questionnaire 8
Field Work 8
Coding and Computer Processing 9
Survey Sample 9

READING THE PRINTOUT 10

INTERPRETATION OF INDIVIDUAL SURVEY QUESTIONS 13

CHAPTER 3
COMMUNITY INFRASTRUCTURE REPORT

TYONEK CLINIC 1
FIRE STATION/HEAVY EQUIPMENT SHOP 2
POLICE PROTECTION 3
UNITED STATES POST OFFICE 3
CHIEF CHICKALUSION COMMUNITY CENTER 4
TYONEK GUEST HOUSE/DAY CARE CENTER 5
AIR TRANSPORTATION FACILITIES 6
LOCAL ROADS 7
SANITARY LANDFILL/SOLID WASTE DISPOSAL SITE 8
SEWAGE DISPOSAL 9
COMMUNITY WATER SYSTEM 10
ELECTRIC PUBLIC UTILITY 10
E.L. "BOB" BARTLETT ELEMENTARY AND HIGH SCHOOL 11
RECREATION SITES 12
COMMUNITY INFRASTRUCTURE IMPROVEMENT PRIORITIES 14

CHAPTER 4
TYONEK COMMUNITY NEEDS ASSESSMENT

INTRODUCTION 1
CHAPTER 1

PROSPECTS FOR DEVELOPMENT IMPACTS

INTRODUCTION

In this chapter the development plans of all major leaseholders in the Tyonek/Beluga area will be outlined. Knowledge of the development scenarios envisioned by oil, gas, and coal companies in the area will allow Tyonek residents to analyze the respective impacts and to develop a planning program which will (1) minimize the projected adverse impacts and (2) make the most of any potential economic benefits to the village and its residents.

For each potential development, the following information has been outlined:

- project name;
- sponsors;
- aerial extent and location;
- interest in land;
- development scenario;
- project schedule/status;
- employment levels; and
- contacts.

Following these data is a summary of the potential social, economic and environmental impacts to be expected according to reports that have been published on potential oil, gas, and coal development in Upper Cook Inlet.

METHODOLOGY

In researching the possibilities of developmental impact, the following methods were used:

- a literature search/review of appropriate federal, state, borough, and municipal libraries;
- interviews of appropriate private and governmental organizations, including but not limited to:
  - Tyonek village IRA Council;
  - Tyonek Native Corporation;
  - Cook Inlet Region, Inc.;
  - Kenai Peninsula Borough;
  - Alaska Department of Natural Resources;
  - Alaska Power Authority;
- Diamond-Chuitna;
- Placer Amex Inc.;
- AMAX, Inc.;
- Mobil Oil, Inc.;
- Chevron USA;
- Kodiak Lumber Mills, Inc.;
- Simasko (SIMKO) Production Co.;
- Marathon Production Co.; etc.

The summary of the development scenarios proposed by the prospective developers is a project of original research. It is important to understand that preliminary plans for resource development tend to change often and quickly as new baseline data are produced. Reports published as recently as April 1980 are out of date today. Project plans were changed several times, even in the course of this research. Therefore, it was important to interview each developer in person (or by telephone) to secure knowledge of his most recent plans. As of this date, the information presented in this report is current. However, due to the fluid nature of this subject matter, the reader should be advised that an update by the indicated "contact" may be in order as early as a month or two after publication.

Unfortunately, the scope of this project does not allow for original research on the potential social, economic, and environmental impacts imposed by resource development. Rather, the contract mandates that the consultant compile only data available in existing studies; therefore, impact information presented in this report was previously published. Sources are noted in the report bibliography.

In examining any potential resource development, it is important to note the critical role of the world market demand for that resource. For instance, while preliminary exploration in the Beluga area may reveal that substantial resource deposits do, in fact, occur there, no development of these resources will take place unless there are strong indications that a demand for the product exists.

At present, market conditions for coal production in the Beluga area appear favorable. Development of this local resource may, therefore, occur in the near future. A recent report prepared for the Division of Policy Development and Planning (DPDP), Office of the Governor, entitled "Final Report: Beluga Coal Market Study," reached several conclusions. These conclusions were based upon analyses of (1) the Pacific Rim (domestic and foreign) market outlook; (2) sources of competition for that market; (3) the relative competitive strengths of Beluga coal as compared to other sources; and (4) certain non-market factors. The report concluded that development of the Beluga coal fields for direct out-of-state shipment to both foreign and, later,
domestic markets is highly probable between 1980-1985. Support for these conclusions is provided by the following facts:

- As a result of the oil price increases of the mid-to-late '70s, major decisions were made by government and industry to shift emphasis from oil to coal fuels. This set the stage for the steam coal trade in the Pacific Rim region. By 1990, the East Asian steam coal market is expected to have grown at a rate in excess of 20% per year.

- This explosive demand for coal is the single most important factor affecting Beluga development. Because the field does not have the benefit of existing infrastructure, the area needs a rapidly growing and concentrated market to warrant development.

- Analyses developed in the DPDP study showed that most Beluga area coals should be competitive with Australia, the nearest competitor, at present estimated costs on a delivered basis to Japan and Korea.

- Quantities of at least 750 million tons of coal have been identified as economically extractable for initial field development. Located near tidewater, Beluga coals are not plagued by uncertain overland transportation costs, a major uncertainty affecting almost all other sources of supply. This quite stable and predictable supply and cost structure is a very favorable element.

- Competitive sources from the Lower 48 such as Wyoming or Utah are at a severe disadvantage compared to Beluga due to either high mining costs, high rail freight rates over long distances, or navigational restrictions on smaller ships for the ocean freight leg. As a consequence, these coals are not expected to compete on a large tonnage basis in the Pacific Rim markets.

All of these factors combine to make the current outlook for development of the Beluga coal fields appear favorable at present.

There are three major lease areas in the vicinity of the village of Tyonek: the Capps lease area, the Chuitna lease area and the Threemile lease area. Two principal leaseholders dominate these areas: Placer Amex Inc. and Diamond Shamrock-Chuitna Coal Joint Venture (hereafter referred to as "Diamond-Chuitna" or "D-C"). These areas are plotted on the accompanying resource development scenario map. In addition, Mobil Oil Corporation holds 23,080 acres in coal leases some 55 miles northwest of Tyonek. Major leaseholders and acreages held in lease are listed below:
In the course of this study, each of the major leaseholders was interviewed at length subsequent to a review of the reports/plans/maps that had been produced by the developers documenting their planning progress to date.

A review of potential development scenarios is outlined on the following pages.
NAME: PLACER AMEX INC.

Sponsorship: Beluga Coal Company, a wholly owned subsidiary of Placer Amex Inc. (P.A.), in joint venture with Cook Inlet Region, Inc.

Location: 25,926 acres in the Capps lease area, Chuitna lease area and Threemile lease areas; these areas are located 25, 15 and 8 miles, respectively, from the village of Tyonek.

Interest Held in Land: Indefinite term leases of 25,926 acres of subsurface estate, plus 300′-wide rights-of-way from lease areas to proposed port from Cook Inlet Region, Inc. and the State of Alaska for an indefinite period of time.

Development Scenarios: Two separate plans for development:

I. Coal-to-Methanol Plant

- coal transported via rail or conveyor belt from Capps mine area and Center Ridge mine area (in Chuitna lease area) to methanol plant at Granite Point on east end of Trading Bay;

- methanol would be transported to market via the existing Drift River oil pipeline (agreement with owners of pipeline would allow PA to rent line for several days/week for methanol transport);

- self-sufficient townsite would be constructed to house workers approximately 1/4 of the way between port site and Capps mine area.

Employment: 1,500 workers plus their families and support personnel. Jobs would include:

- laborers
  - helpers
  - truck drivers
  - conveyor operators
  - plant operators
  - port operators
  - equipment operators
  - mechanics
  - dragline operators
  - engineers
  - office personnel
  - electricians
  - rail operators
Schedule/Status: Exploration since 1968; earliest possible startup of methanol plant would be 1990 - more likely later.

II. Direct Coal Export

SCENARIO:-

- Coal transported from Lone Ridge mine area via conveyor belt to D-C crusher area, then south via rail or conveyor to the proposed stockpile area and finally to the port (see map) or from Chuitna Center Ridge line area and/or Capps mine area by railroad to same port site.

- Employment: Approximately 500 people employed for a minimum of 30 years.

- Schedule/Status: Could be in operation as early as 1987, if market commitments were made and all other conditions were easily met.

Contact: Cole E. McFarland or Benno J. G. Patsch
Beluga Coal Company
1 California Bldg.
San Francisco, California 94111
Phone: (415) 986-0740
NAME: DIAMOND SHAMROCK-CHUITNA COAL JOINT VENTURE

Sponsors: Joint venture between:

(1) Diamond Shamrock Corporation, doing business as Diamond Alaska Coal Company, operating partner; and

(2) Chuitna Coal Company, as stated.

Location: 20,571 acres in the Chuitna lease area some 10 miles from the village of Tyonek.

Interest Held in Land: Lease of 20,571 acres of subsurface estate from the State of Alaska for an indefinite period of time.

Development Scenario: Direct coal export

- comparatively high quality coal for region, may not be necessary to process before export;

- recoverable reserves exceed 350 million short tons of coal;

- either an industrial enclave such as at Prudhoe Bay will be erected just south of the D-C crusher area within the Chuitna lease area, or D-C may joint venture with Placer Amex on the construction of a permanent townsite;

- according to present plans, coal will be transported south from the D-C crusher area (see map) via rail or conveyor belt on a transportation corridor adjacent and parallel to the western border of TNC lands, ending at the proposed stockpile area and port site; or

- a transportation corridor is contemplated across TNC lands to a possible deepwater port near an existing barge landing near the mouth of the Chuitna River; or

- coal may be transported by rail by way of Placer Amex's operations in the Chuitna lease area;

- according to the D-C proposal, mining facilities in their Chuitna Field would cover approximately 120 acres.
Employment: 2,000 people employed during construction of the D-C operation; approximately 800 people during day-to-day operation, as follows:

- mining facilities: 500 employees
- port facility: 70 employees
- maintenance of transportation equipment and corridor: 25 employees
- camp maintenance and operations: 35 employees

Status/Schedule: Exploration in the area since 1968; export operation could be underway as early as 1987. (Proposed schedule on following page.) Bechtel Corporation of San Francisco has been designated prime contractor for the exploration and development phase engineering studies. Project manager: George Cirolini

Contact: Dr. Robert Sanders
Diamond Shamrock Corp.
430 West Tudor Road
Anchorage, Alaska  99502
Phone: 277-3583
NAME: MOBIL OIL LEASES

Sponsor: Mobil Oil Corporation

Location: Approximately 23,080 acres (in 2 blocks) north of Beluga Lake some 55 miles northwest of the village of Tyonek.

Interest Held in Land: Lease of 23,080 acres of subsurface estate from the State of Alaska for an indefinite period of time.

Development Scenario: Limited small-scale exploration only at present:

- 30- to 35-foot exploratory holes to be drilled in next 3 years;
- activity centered at 3 sites with 3 separate drilling rigs;
- housing at existing lodges;
- transportation via charter air service;
- even if substantial coal deposits are identified, there are no plans for development in near future due to access problems, high transportation costs.

Employment: 21 people employed for 3-4 weeks during summer 1981, as follows:

Drillers - 12
Geologists - 3
Geophysical loggers - 2
Surveyors - 4

Status/Schedule: No plans for development at present; minimum of 8-9 years for project development and construction after decision to proceed is made.

Contact: Fernando Blackgoat
Mobil Oil Corporation
P.O. Box 17772
Denver, Colorado 80217
Phone: (303) 628-6253
NAME: MEADOWLARK FARMS INC.

Sponsor: Meadowlark Farms, a wholly owned subsidiary of AMAX Coal, Inc.

Location: 3,880 acres north of Beluga Lake some 45 miles from village of Tyonek.

Interest Held in Land: Lease of 3,880 acres of subsurface estate from the State of Alaska for an indefinite period of time.

Development Scenario: None

- local and world market demand not great enough to warrant development;
- remote location of leases renders transportation costs too high, given current market value of coal;
- limited exploration to date shows reserves in Meadowlark lease area to be subbituminous coal

Employment: None

Status/Schedule: No exploration or development activity at present; no future plans unless world market demand goes up considerably.

Contact: Richard Detty, Director Exploration and Special Projects AMAX Coal Company 105 South Meridian Street Indianapolis, Indiana 46225 Phone: (317) 266-2626

Several other individuals have leaseholdings for coal in the Beluga area. However, these leases are relatively small, and there are no plans for large-scale development at present.
POTENTIAL SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF COAL DEVELOPMENT

As noted in the preface, analyses identifying the following potential impacts were previously published by various state and federal agencies. Especially informative reports include:


It is significant to note that the potential social and economic impacts identified below are similar for both large-scale coal and large-scale oil and gas development. Both types of operations would mean a regional population increase to more than 40 times the current population level. This fact alone will make for many changes in village lifestyle.

A major difference, however, between the two types of development lies in the levels of respective long-term employment opportunities. Oil development calls for high levels of employment during the development stages, but once the wells are in production very little manpower is required for their operation. However, coal development is much more labor-intensive in the long-term operation stages as well as in the front-end, short-term development of the necessary infrastructure.

IMPORTANT NOTE: The potential impacts outlined in this report were derived from examination of a "worst case" scenario. That is, potential negative social, economic, and environmental effects depicted herein would be the result of unrestrained development. They do not take into account the restrictive
regulations in the Surface Mining Control and Reclamation Act or any of the other mitigating measures that can and should be taken by the developers to lessen these potentially negative impacts.

The following impacts were identified in previous research efforts:

POTENTIAL SOCIAL AND ECONOMIC IMPACTS FROM LARGE-SCALE COAL, OIL, AND GAS DEVELOPMENT

- More long- and short-term local job opportunities for Tyoneks.
- Rapid economic growth.
- Diversification of local economy.
- Increased competition in local goods and commodities market, potentially lowering prices locally.
- Less emphasis on subsistence economy; more emphasis on cash economy.
- Potential loss of federal funding for Indian programs should community no longer be primarily Native.
- Potential financial benefits to residents accrued from lease of subsurface estate and surface rights-of-way through regional and village Native corporations.
- Increase in Kenai Peninsula Borough's tax base through:
  - borough property taxes
  - sales taxes
  which could mean increase in level of services to the village.
- If all proposed projects are, in fact, undertaken, regional population could increase to 40 times current levels.
- If majority of new residents are white, Tyoneks could be reduced to minority status.
- Local values, beliefs, customs, traditional authority lines, and group norms could be challenged.
- More contact with outsiders; potential loss of isolation.
- Potential interpersonal/intergroup conflicts at work and school.
- Lower productivity at work and school, due to preoccupation with conflicts.
- Increases in vandalism, alcoholism, and drug abuse.
- Increased pace of living.
- Introduction to new ideas, advanced technologies.
- Potential for more local social services for increased population.

It is important to note that the social, cultural, and economic effects of resource development in the area on Tyonek residents' subsistence patterns are likely to be substantial. These particular impacts are not addressed in this report because the subsistence division of the Alaska State Department of Fish and Game is currently conducting a "Tyonek Comprehensive Resource Use Study." This study will include (among many other components) an anthropologist's assessment of the sociocultural value of the resources used in the area. We believe that the potential social and cultural impacts on the Tyoneks' subsistence use patterns will be made clear in this definitive report. The report is scheduled for completion in early 1983.

While potential social and economic impacts for oil, gas and coal development are similar, the potential environmental impacts are different for coal than they are for oil and gas.

**POTENTIAL ENVIRONMENTAL IMPACTS FROM COAL DEVELOPMENT**

- Small amounts of air pollution from coal dust particulates resulting from handling.
- Interruption of wetlands and groundwater drainage.
- Potential degradation of stream water quality if regulations of Surface Mining Control and Reclamation Act are violated.
- Biological disruption of the Chuitna River.
- Potential loss of approximately 50% of salmon stock in area if precautionary measures are not taken, according to Alaska Department of Fish & Game.
o Rerouting of creek beds and surface water.

o Displacement of brown bear population.

o Moose will coexist with most mining activity but increased moose kills are expected on the railroad tracks; overall moose population may increase due to increase in pioneering vegetation.

It is very important to note that many of the above impacts are, as noted, potential. Many of these adverse impacts can be avoided if proper precautions are taken. For example, the Alaska Department of Fish and Game has stated that precautions have already been proposed by prospective developers which would limit the salmon loss to a very small fraction of the 50% potential loss.

OIL AND GAS EXPLORATION AND DEVELOPMENT

Introduction

Interest in oil and gas development in the Cook Inlet region began in 1957 with a major discovery well on the Kenai Peninsula. By 1968, production on the Kenai had hit 200,000 barrels per day. Also by 1968, two oil refineries, an ammonia-urea plant and a natural gas liquefaction plant had been built in the region. While production and processing have been centered in the Kenai area, substantial deposits have been identified in the Beluga area on the other side of Cook Inlet.

The first major lease sale of the State of Alaska's current 5-year oil and gas leasing program took place in Upper Cook Inlet in May 1981. Both submerged lands and uplands in the Beluga area surrounding Tyonek were involved in the lease sale. (See map on following page.) The successful bidders are listed in the following section.

The Division of Minerals and Energy Management (a division of the Department of Natural Resources) is responsible for preparing, conducting and implementing all lease sales. Questions regarding state oil and gas lease sales in the Beluga area should be directed to:

Pamela Rogers
Department of Natural Resources
Div. of Minerals and Energy Management
555 Cordova Street
Anchorage, Alaska 99501
Phone: 276-2653
NAME: STATE OIL AND GAS LEASE SALE NO. 33

Sponsors: State of Alaska

Location: 429,982 acres of submerged lands and uplands in Upper Cook Inlet virtually surrounding the Tyonek area. (See maps on the following pages.)

Results: A total of 429,982 acres of subsurface oil and gas rights leased to the following bidders:

<table>
<thead>
<tr>
<th>Successful Bidder</th>
<th># of acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell Oil Company</td>
<td>86,623</td>
</tr>
<tr>
<td>Simasko Production Company and Santa Fe Energy Company</td>
<td>63,573</td>
</tr>
<tr>
<td>ARCO Alaska, Inc.</td>
<td>51,534</td>
</tr>
<tr>
<td>Amarex, Inc.</td>
<td>45,538</td>
</tr>
<tr>
<td>DYCO Petroleum Corporation</td>
<td>34,349</td>
</tr>
<tr>
<td>Phillips Petroleum Company</td>
<td>34,123</td>
</tr>
<tr>
<td>Amoco Production Company</td>
<td>26,990</td>
</tr>
<tr>
<td>Chevron USA, Inc.</td>
<td>20,985</td>
</tr>
<tr>
<td>Alaska Gas Exploration Associates (AGEA)</td>
<td>11,394</td>
</tr>
<tr>
<td>AGEA; Shell Oil Company</td>
<td>11,394</td>
</tr>
<tr>
<td>Tesoro Petroleum Corporation</td>
<td>10,148</td>
</tr>
<tr>
<td>Conoco, Inc.</td>
<td>8,765</td>
</tr>
<tr>
<td>Chevron; AGEA; Amarex, Inc.</td>
<td>4,531</td>
</tr>
<tr>
<td>Kelly Everette, et al.</td>
<td>4,230</td>
</tr>
<tr>
<td>Mobil Oil Corporation</td>
<td>3,808</td>
</tr>
<tr>
<td>Chevron; ARCO; Conoco; AGEA</td>
<td>2,280</td>
</tr>
<tr>
<td>John Olds and Elton Engstrom</td>
<td>1,518</td>
</tr>
</tbody>
</table>

Contact: Ron Beran
Department of Natural Resources
Div. of Minerals and Energy Management
703 West Northern Lights Blvd.
Anchorage, Alaska 99503
Phone: 276-5113
EXISTING OIL AND GAS ACTIVITIES

Operator: Chevron USA

Location/Activity: Natural gas fields located at intermittent
points from 15 to 120 miles northwest of Tyonek,
including:

<table>
<thead>
<tr>
<th>Field</th>
<th>No. of Drill Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beluga River Unit</td>
<td>11</td>
</tr>
<tr>
<td>Pretty Creek</td>
<td>1</td>
</tr>
<tr>
<td>Ivan River Unit</td>
<td>2</td>
</tr>
<tr>
<td>Stump Lake</td>
<td>1</td>
</tr>
</tbody>
</table>

Interest in Land: Indefinite term lease of subsurface natural
gas rights from State of Alaska and Cook Inlet Region, Inc.

Existing Development: Drill sites were used only for
exploration; none is in production at present.

Proposed: No plans for production at these sites due to lack of
local market demand; future increase in export demand in
world market could warrant production at these drill
sites.

Contact: Bill Siefke
Chevron USA
P.O. Box 7-839
Anchorage, Alaska 99510
Phone: 279-9666
Operator: City Service Oil Co.

Location/Activity: Natural gas field 20 miles northeast of Tyonek on Lewis River.


Existing Development: Natural gas drilling camp; 5 exploratory drill sites.

Proposed: No plans for production at these sites unless world market demand increases considerably thereby making production profitable.

Contact: Reggie Elkins
City Service Oil Co.
1016 West 6th Avenue, Suite 420
Anchorage, Alaska 99501
or,

Worth Langford
City Service Oil Company Drilling Camp
Lewis River
Operator: AMOCO Production Company

Location: Potential oil and gas fields just north of the West Forelands area near Tyonek.

Interest in Land: Indefinite term lease of subsurface rights from State of Alaska.

Existing Development: None. Seismic testing currently underway.

Proposed: Partnership with one or more of the other leaseholders in the area is possible in future if oil or gas is discovered. Then, one drill rig and self-sufficient camp will probably be set up.

Contact: J.G. Saviers
AMOCO Production Company
P.O. Box 799
Anchorage, Alaska 99501
Phone: 272-8471
Operator: Marathon Oil Company

Location/Activity: Oil and gas treatment plant approximately 20 miles southwest of Tyonek on Trading Bay; also lease holdings in McArthur Field and Trading Bay Field.

Interest in Land: Indefinite term lease of subsurface rights and some surface rights-of-way and areas for plants from State of Alaska.

Existing Development: Since 1966, modified gas plant and heater treater plant for oil on Trading Bay; some gas then shipped via the Drift River Pipeline to the Cook Inlet Pipeline across the Inlet to Kenai Peninsula; other gas shipped through 16" pipeline across Tyonek land to transshipment area at Granite Point, then to Union Oil urea plant near Swanson River near East Forelands area of Kenai Peninsula.

Contact: Maurey Lochman
Marathon Oil Co.
Production and Exploration
3201 "C" Street
Anchorage, Alaska 99503
Phone: 274-1511
Operator: Simasko Production Company (SIMKO)

Location/Activity: Natural gas exploration on 22,000 acres approximately 10 to 15 miles west of Tyonek.

Interest in Land: Indefinite term lease of mineral rights to 22,000 acres from Cook Inlet Region; also surface use agreement with Tyonek Native Corporation (TNC) allowing SIMKO access across TNC lands to their drill sites.

Existing Development: 5 weeks engaged in exploratory drilling activity on 2 small gas fields in the area.

Proposed: Possibly more exploratory drilling; one additional well site likely in fall 1981.

Contact: Keith Calderwood
Simasko Production Company
P.O. Box 1515
Anchorage, Alaska 99510
Phone: 277-5932
POTENTIAL SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS FROM OIL AND GAS DEVELOPMENT

The existing oil and natural gas exploration and processing operations outlined above currently have little or no perceived impact on the community of Tyonek. They are all very small operations which have coexisted with the Tyoneks for as long as 15 years in some cases. However,

- should a major oil discovery be made at existing exploratory wells or at new wells resulting from the recent State Lease No. 33, or
- should there be a considerable increase in world market demand for natural gas thereby warranting production,

it is highly likely that the increased levels of activity will create a considerable impact on Tyonek and its residents. As noted in the previous discussion of impacts from coal development, the social and economic impacts to be expected from large-scale oil and gas development will be virtually identical to the social and economic impacts expected with large-scale coal development.

However, the potential adverse effects of oil and gas development on the environment are quite different from those expected with coal development. These effects, as garnered from existing literature on the subject (see bibliography), are outlined below.

Degradation of the regional and local environment can be expected to accompany oil and gas development in the area. The following adverse impacts are often caused by:

- loss of well control,
- pipeline breaks,
- tanker accidents, and
- failure of storage tanks.

In addition to these accidental occurrences, a considerable degree of degradation can be expected as a result of the routine day-to-day operation of the production facilities. These impacts include:
o short-term disturbance from the discharge of drilling muds, cuttings and solid waste;

o long-term shoreline alteration;

o soils displacement from dredging and filling;

o discharge of formation waters and cooling waters;

o interference with biological balance in waterways;

o flow of water across wetlands blocked by access roads;

o waterfowl nesting areas disrupted by high noise levels;

o air pollution resulting from operation of onshore and offshore facilities;

o potential for contamination of drinking water; and

o potential for disruption of essential fish and wildlife reproductive habitat.

The potential impacts identified in this chapter are taken directly from previously published reports on oil and gas development in Alaska. They are here, as in the reference documents, very general impacts and not necessarily inclusive. Before any definite resource development plans are drafted, very specific environmental impact studies should be done for the Tyonek area.

Once these areas of particular environmental sensitivity have been identified, then planning can begin for a program to moderate the inevitable effects of development. Already, several potential developers have expressed an interest in planning their construction and operations so as to abate potentially negative impacts - social and economic, as well as environmental.
The Chuitna River area near Tyonek is termed a "status quo fishery" by the Alaska Department of Fish and Game. This means that the king salmon subsistence fishery on the Chuitna is currently naturally replenished after each run. At present, Fish and Game's only involvement in the area is in a monitoring capacity, ensuring that the run is not in danger of being depleted. The only active participation in the next 10 years that the department foresees would be to manage the salmon run, should it be threatened by overfishing. Even this activity would have minimal impact on the village of Tyonek.

Questions regarding future fisheries development in the area should be directed to:

Keith Webster  
Department of Fish and Game  
Division of Commercial Fisheries  
333 Raspberry Road  
Anchorage, Alaska 99502  
Phone: 344-0541

At present, there is no indication that there will be any fisheries development in the area, especially given village sentiment regarding preservation of the subsistence rights of local residents.
POTENTIAL HYDROPOWER PROJECT DEVELOPMENT

The Susitna River, Chakachamna Lake, Bradley Lake, Snow River and several other sites in Alaska are currently being considered as potential sites for hydropower projects designed to serve the concentrated Anchorage bowl population and other nearby communities. While feasibility studies of the Susitna River project are nearing the final stages, studies of alternative sites are just beginning. If a lower cost alternative energy source to Susitna can be found, it is thought at this point that an alternative site will be developed. Alternatives being considered include coal production in the Beluga area as well as the other hydropower sites mentioned.

If the Susitna River hydropower project is approved and constructed, no direct impacts will be felt in the community of Tyonek. Preliminary plans for routing of transmission lines run from Watana Creek to Gold Creek and then south to Anchorage. This route will not come anywhere near Tyonek, nor will it physically affect Tyonek residents. The camp for workers affiliated with the feasibility study is located at the confluence of the Susitna River and Deadman Creek. It is sufficiently removed from the vicinity of Tyonek so as not to impose any impact on the community at all. However, the construction and operation of a hydropower project at Susitna would provide a wealth of employment opportunities for Tyonek residents should they opt to take advantage of them. Jobs available in the operation of the project would be long term; that is, available for longer than the duration of the construction of the facility.

The construction of the project at Susitna would have a major effect on Tyonek in that it would mean that there would be no need in the near future for construction of a hydropower project at nearby Chakachamna Lake. A feasibility study of the Chakachamna project has just begun. It will determine (1) whether or not it will be feasible to build a project at Chakachamna; and (2) how much it would cost to build the project. If it is determined that the Chakachamna project would be more economical than the Susitna project, the former will probably be built instead.

Because the feasibility study of the Chakachamna project has just been awarded, there are no conclusions yet available regarding the project's potential impact on the Tyonek area. However, it can be assumed that a considerable work force will be needed to construct the facility. It is anticipated that a 300-400 MW capacity facility will be built with a lake tap tunnel, using Chakachamna Lake as a reservoir. The primary design concept
presented in former studies presents a 10.8-mile tunnel which would tap Chakachamna Lake at or near the 1014' elevation. Assuming a normal high water surface elevation of 1127 feet, the lake will provide an estimated 1,606,300 acre feet of active storage. The concrete-lined tunnel will feed water to four 80,000 kw power turbines. Tunnel diameter would be 25'; it would feed water to a 23' diameter penstock. The tunnel would terminate at a 60' diameter, 40' high surge tank. According to this plan, the powerhouse would be located on the left bank of the McArthur River. A 230 kv double-circuit line, 113.5 miles long, would transfer power to an Anchorage substation. In this proposal, access roads totaling 51.5 miles in length with three required bridges would be constructed.

The feasibility study will address questions regarding the size of the work force, employee housing, transportation of employees to and from the work site, and the impacts on the village of facility workers and operations. Questions regarding the study or any other aspect of the Chakachamna Lake hydropower project can be addressed to:

Robert Mohn  
Alaska Power Authority  
333 West 4th Avenue, Suite 31  
Anchorage, AK  99501  
Phone:  277-7641

It is anticipated that the feasibility study will be completed by January of 1983. It will take an additional 2 years to obtain the necessary licenses and permits for construction. It is possible that the Chakachamna Lake hydropower project, if found feasible, could be operational by 1985.
STATE LAND DISPOSALS IN THE TYONEK AREA

The State of Alaska's Department of Natural Resources, Division of Forest, Land and Water Management does not anticipate the disposal of any lands in the Tyonek area in the near future. The only land disposals proposed in the Cook Inlet area anywhere close to the Tyonek/Beluga area are slated for Fiscal Year 1982. One is the proposed "Dinglishna Hill Subdivision" in Township 16 North, Range 7 West. This subdivision near Flathorn Lake covers 1,151 acres. It will be available in FY 82 for the normal state land disposal processes, probably including homesites by residency, homesites by lottery, subdivision lottery, or remote parcel lottery.

The second subdivision slated for FY 82 that is within the western Cook Inlet area is called "Super Cub." Super Cub consists of 1,280 acres and is located in Township 16 North, Range 11 West. This area, like Dinglishna Hill, is expected to be divided into lots for the state land disposal. A much larger disposal area called "Airboat Acres" is located on the Susitna River in Townships 16-to-18 North, Ranges 7-to-8 West. This proposed 23,000-acre disposal has been put on "hold" status by DNR and is not expected to become active again in the very near future. Other than these 3 areas there have been no proposals in the Tyonek area. All of these areas are so far removed from the village that impacts, adverse or otherwise, are not anticipated. Further questions regarding future land disposal in the Tyonek/Beluga area should be directed to:

Div. of Forest, Land and Water Management
Department of Natural Resources
555 Cordova
Anchorage, AK  99501
Phone:  279-5577
TIMBER DEVELOPMENT

The Alaska Department of Natural Resources will conduct a bid-sale for 5-year timber rights on 48,000 acres located just east of the Chuitna coal fields and north of Tyonek Native Corporation lands. The bid-sale is scheduled for December 31, 1981. Included in the sale will be 53 million board feet of spruce and 80 million board feet.

Kodiak Lumber Mills, Inc. has run a logging operation and a chip mill in Tyonek for 7 years. In addition to the areas covered by the plant, the dock and the camp, the company's timber sale covers 275,000 acres. According to John Daly, Senior Vice President, Kodiak Lumber Mills has no plans for any type of expansion of operations in or near Tyonek. The company anticipates continued operation at the same level indefinitely. At present, the mill employs between 50 and 75 persons on a year-round basis. Daly stated that, as always, the company is interested in hiring local people.

Further questions regarding employment or future development plans should be directed to either Dick Pellett, manager at the Kodiak Lumber Mills Camp in Tyonek, or to:

John Daly
Senior Vice President
Kodiak Lumber Mills, Inc.
437 E. Street
Anchorage, AK 99501
Phone: 276-0060
CHAPTER 2
TYONEK SURVEY OF COMMUNITY ATTITUDES

INTRODUCTION

This chapter is a report and analysis of community attitudes and household characteristics gathered from a survey of households in the village of Tyonek. The survey, conducted in August of 1981, was initiated by the community of Tyonek as a means to gauge its own attitudes towards development of the vast Beluga coal reserves adjacent to the village. As a part of the 1981 survey, information was also gathered about household income and employment characteristics as well as individual attitudes towards village life, the quality of existing community services and facilities, and a performance evaluation of representative organizations and agencies. Important questions querying residents as to their subsistence use patterns were not included in this study because they are being covered in depth by the Subsistence Division of the Alaska State Department of Fish & Game in its study entitled "Tyonek Comprehensive Resource Use Study." This report is scheduled for completion in 1983.

To present the findings of our study we have divided the report into four sections. The first section - "Summary of Findings" - presents the significant findings within the following subject areas:

- Characteristics of Residency;
- Employment and Income Characteristics;
- Attitudes towards Village Life;
- Attitudes towards Representative Organizations and Agencies; and
- Attitudes towards Natural Resource Development.

The remainder of this summary section lists the miscellaneous findings that were identified from an analysis of the entire survey. These findings describe the unique socioeconomic groups of the community which share similar attitudes.

Question 18 of the survey (see Appendix) was designed to measure attitudes of the community towards the quality of community services and facilities and to gather suggestions on their improvement. An in-depth analysis of the findings from this portion of the survey are covered in Chapter 3 of this study.
The second segment - "Project Description" - describes the methodology that was used in completing the survey work. This includes a description of how the survey was designed; how the survey "sample" was selected; and how the surveys were administered, coded, and computerized.

The third part of this report - "Reading the Printout" - includes a section on how to interpret the computer printout data. Following this explanation are the voluminous computer printouts (132 pages). Appendix A includes a copy of the attitudinal survey questionnaire form used to interview respondents.

The fourth and concluding section of the study - "Interpretation of Individual Survey Questions" - presents a question-by-question analysis of the computer printouts. This is a more comprehensive evaluation of all survey findings includes an abundance of unsummarized information not reported in the first section. The serious reader is asked to review this section carefully to ensure that this study omits no significant information.

It is critical to note that this survey measured attitudes of residents in August of 1981. While Darbyshire & Associates presented a community education program in Tyonek the day before the survey interviews were begun, it is likely that information regarding the potential impacts of proposed coal, oil, and gas development had not circulated to all or even most of the village residents before they were surveyed as to their attitudes toward the proposed resource development. After residents have a full understanding of the potential impacts, it is possible that their attitudes toward development may change. It will be important to continue to monitor these attitudes as the planning process proceeds and development progresses.

SUMMARY OF FINDINGS

Characteristics of Residency

The village of Tyonek is composed predominantly of households which are maintained year-round, and are occupied by families that often have been life-long members of the community. Close to 70% of the households are headed by members who have always lived in Tyonek, while another 15% have lived in Tyonek for more than 10 years. Around 95% of the homes in Tyonek are lived in year-round.

Almost all household representatives contacted during this survey indicated they either had "indefinite" plans of remaining in Tyonek or they were not sure of their present intentions but had no plans of moving. The few remaining respondents had plans of leaving within the next 5 years.
Questions regarding demographics pertained solely to the head of each household. As such, the following characteristics of these members may be considered as representational of the household.

Almost all heads of households are Indian (98%), although a few households are headed by Aleuts. Three-quarters of the heads of household are males, and 40% have achieved at least a high school education.

Although the average household size in Tyonek (3.2 persons per household) is near the state's average, average household incomes ($13,441 per household) are approximately 30% below the state's average. A typical head of household brings in 86% of his family's income.

Principal skills listed by most householders who are working were those of laborer and roughneck. These skills are often employed in seasonal industries such as construction, firefighting, commercial fishing, and processing. Roughneck skills can be applied to the nearby Cook Inlet petroleum basin; although, at the present time, this is not, in fact, a reality.

In disclosing the principal occupation of the head of household, 1/3 of the households listed either no skills or chose not to respond. Those not disclosing their primary occupations were heads of households who comprised the majority of the households in the lower-income brackets. The remainder of the lower-income households were comprised primarily of those in which the major wage earner was retired (6%).

The various public agencies which operate in the village of Tyonek provide the most substantial year-round employment base. Clerical positions with these agencies provided the occupation listed in second place for heads of households. These agencies also provided the higher skilled and paying positions in the community. Work in community service programs such as day care, health care, firefighting, custodial work, and other forms of public service employment (e.g., IRA government, state agencies) comprised the bulk of employment for the middle-income households.

The higher-income heads of households typically serve as supervisors or directors of local or state programs. A few highly technical occupations exist in bookkeeping and aviation which provides some of the higher paying private sector forms of employment. The few higher paying jobs which require skilled personnel belong to people who have recently moved to the community.
Attitudes towards Village Life

The quality which binds most people to this village is its isolated and peaceful lifestyle. Close access to hunting and fishing resources together with family and church ties were listed next in connection with positive aspects of living in Tyonek.

On the other hand, the lack of jobs was the most critical problem voiced by the citizens of Tyonek, with close to 60% of the heads of households unemployed at the time of this survey (August 1981). Problems associated with alcoholism and drug abuse were a close second.

Attitudes towards Representative Organizations and Agencies

The strongest and most recurring comments made on the past performance of both Native corporations and the local and regional government agencies serving the village of Tyonek were that they did not do enough to improve local job opportunities. When asked for specific recommendations to improve the level of services, respondents again suggested undertaking actions to increase local job opportunities.

Of the various representative organizations serving Tyonek the Native Village of Tyonek (IRA) was given the best job performance evaluation. Close to 3/4 of those surveyed ranked the services provided by the Native village as either good or fair.

The Tyonek Native Corporation, Kenai Peninsula Borough, and the Kenai Peninsula Borough School District were all evaluated at the same level with close to 1/2 of those surveyed rating their performance as either good or fair. The organization receiving the lowest rating was Cook Inlet Region, Inc. Approximately 1/3 of those surveyed ranked CIRI's performance as either fair or good. On the other hand, close to 40% rated CIRI's performance as either poor or bad.

Although, both the village corporation and regional Native corporation own large tracks of land and mineral rights in the general area of coal development, limited enthusiasm was shown towards substantial increases in direct involvement in the development of these resources. Over 80% of those surveyed expressed satisfaction with present levels of involvement of CIRI in coal development.

Demands for infrastructure in support of mining operation are seen as a more viable source of involving TNC lands in coal resource development. The forms of involvement favored by residents for TNC lands involves the development of port facilities and rights-of-way for roads. Between 70-75% of those surveyed agreed with these forms of land development. Less than
50% of those surveyed agreed with the use of TNC lands in the
development of any new townsites associated with coal mining.

Attitudes towards Coal Development

Although much was not known about the proposals to develop nearby
coal resources, most of the citizens welcome this form of
economic development. While acknowledging some losses in
environmental quality with development, 40% of the community's
heads of households surveyed felt coal development would be an
overall good thing for Tyonek versus 20% who felt the net effect
would be bad. Another 40% expressed no opinion to this question.

While 75% of the community believed that coal development would
bring about an improvement in local job opportunities, close to
85% expressed a desire to be involved in some form of employment
associated with this development. Interestingly, 40% of the
heads of households surveyed were even willing to relocate to
gain employment associated with coal development.

Conflicts between cash employment and subsistence activities were
seen as a source of hardship by 1/2 of those surveyed. It may be
inferred from analyzing the results of this survey that the best
of both worlds is desired, that is, to have employment on a
rotational basis (e.g., 2-weeks on, 2-weeks off) thereby allowing
subsistence activities to occur simultaneously during any given
month.

The relationship between coal development and the village of
Tyonek desired by those surveyed would be one limited strictly to
employment. Most would desire to restrict travel to commuting to
work by automobile on a limited roadway to the job site only.
Very little desire was expressed to link up to any other
communities associated with this development.

Miscellaneous Findings

Many of the attitudes measured in this survey were found to be
consistent among certain socioeconomic groups which make up the
community. These groups are discernible by examining individual
responses against certain characteristics of residency,
education, income and occupation, as well as attitudes.
Altogether, five such groups were discovered sharing similar
attitudes and outlooks. When combined, these groups make up the
entire community.

The largest group to emerge from the analysis of the survey
results included those heads of households who shared three
common characteristics: they were unemployed, maintained
life-long households in Tyonek and fell within the lowest
household income bracket. Some of the heads of these households
are retired. All listed having either indefinite plans for remaining in the community or having no plans of leaving.

Some of these households have limited involvement in the cash economy, usually restricted to commercial fishing during the few short weeks of the summer. Almost all are extremely active in subsistence activities year-round. The very few households found to be maintained seasonally in this village belong to this group.

The survey respondents of this first group were often the least aware of proposed resource development which would affect the community and offered a lower number of suggestions or opinions during the survey than any other socioeconomic group. Although this group generally wishes to see new local job opportunities and associates this with coal development, it does not wish employment which would conflict with subsistence activities.

A second group identified consists of those households in which the head of household listed laborer, roughneck, or other blue collar skills as the primary forms of occupation. These households typically range within the lower and middle household income brackets, and members are engaged in highly seasonal employment such as construction and commercial fishing. Year-round employment opportunities may be available for those with roughneck skills in the oil and gas industry nearby in the Cook Inlet petroleum basin.

These households are also headed typically by life-long members of the village, and these members do not have plans to leave the village in the near future, if at all. Although a large percentage of this group has not achieved a high school education, this group listed an abundance of secondary trade skills in such areas as heavy equipment operating, carpentry, plumbing, welding and other construction related skills. No other group listed such a diversity of skills.

Possibly due to the large unemployment rate among members of this particular group, it tends to strongly favor most forms of natural resource development, especially nearby coal mining. This group was also the strongest in suggesting that the various representative organizations (e.g., Cook Inlet Region, Inc., Tyonek Native Corporation, Village IRA, Kenai Peninsula Borough School District, Kenai Peninsula Borough) become more active in improving local job opportunities. Both CIRI and TNC were singled out and strongly encouraged by this group to become involved in coal development and to develop more local job openings.

A third unique socioeconomic group found in the survey included those households in which the head of household listed clerical as its principal occupation. These households comprised a majority of the middle income household bracket. Employment
within this group is not seasonal and is primarily associated with the various public agencies operating in the village of Tyonek.

This particular group tends to be made up of householders who are life-long members of the community. These residents are also committed to remain in Tyonek as they have no plans of leaving in the near future (i.e., over the next 5 or 10 years). Their education tends to include at least high school with a few people having pursued higher education.

This group has the most recognizable and consistently stated attitudes of any socioeconomic group in the community. It tends to be satisfied with life as it currently is in Tyonek and is typically the most critical of proposed change, especially towards new resource development such as coal mining. It also tends to be very knowledgeable about the details of proposed resource development plans.

Whereas most other groups stress that the most serious problems facing the village are both the "lack of jobs" and "alcoholism and drug abuse," this group places less emphasis on jobs.

A fourth unique socioeconomic group found in Tyonek includes the households in which the head of household is employed in the relatively high skilled public service sector. These heads of household comprise the balance of the middle income bracket and a small portion of the higher household income brackets. Typically these heads of households work in community service programs such as day care, health service, fire protection, custodial work and plant operation, and other forms of public service employment (e.g., village government, locally staffed state agencies).

This fourth group is roughly split between those who are life-long members of the community and residents who have moved to Tyonek within the past 10 years. These households are maintained year-round but have not made the commitment to remain as have the previously identified groups. Many of these residents have plans of moving away sometime within the next 5 or 10 years. The education achieved typically is at least a high school level and is often higher.

This group generally displays a pro-development stance in the community. However, it does not maintain such a consistency in attitudes as do the clerical respondents. Also it does not display the detailed knowledge of proposed development plans and very often does not express opinions on questions asked about organizations or suggested alternatives regarding coal development.

The fifth and final socioeconomic group includes the households with heads of households employed in the few highly technical and
professional occupations available locally. These members were typically supervisors or directors of local or state programs. A few highly technical occupations exist in the area of business. The households of this group almost exclusively comprise the highest household income bracket.

Households headed by these members were almost exclusively the most recent to arrive and the least committed to remain. Most respondents in this last group have plans of leaving within the next 5 years. This was the most highly educated group in the community.

This small group was also pro-development but was equally strong in expressing its concern for environmental quality. It also professed the most technical knowledge about proposed coal development plans (e.g., the proposed sites, overland routes, participating companies, methods and extent of local processing). The strongest criticisms on the performance of CIRI and TNC were voiced by this group. It offered the most detailed opinions about future roles to be played by these corporations and expressed reactions on alternative development strategies proposed in coal development plans.

PROJECT DESCRIPTION

Questionnaire

The questionnaire used in this survey of community attitudes was designed to explore local attitudes towards topics related to natural resource development, village life, performance of representative organizations and agencies, and quality of community facilities and services. Questions also measured the need and demand for improvement in these public services and facilities, as well as problems in the current delivery of such services. Finally, the questionnaire sought standard demographic and household data on age, income level, race, sex, and education of Tyonek's residents. Questions addressing specific issues in Tyonek were inserted by local city officials.

A total of 64 questions was included in the survey, and the results were coded and computerized. A copy of this questionnaire is included as Appendix A of this report.

The community attitudinal questionnaire was developed by Darbyshire & Associates. It was reviewed and amended by the community and DCRA before it was applied to the village of Tyonek.
Field Work

Door-to-door interviews were conducted by individuals hired and trained from the village and who were under the field supervision of Darbyshire & Associates. The surveys were conducted during the first 2 weeks of August, 1981.

Coding and Computer Processing

Before analysis of the completed surveys could be undertaken, it was necessary to prepare the survey forms for use in a computer. This coding and computerization involved several steps. First, the answers to each open-ended question (i.e., those questions which allow unlimited response categories) were reviewed to determine the various categories of response that could be expected. The answers to these questions were then assigned to categories in which they fit. In turn, these categories were assigned code numbers. Actual coding of the survey involved transforming all questions and answers into a series of numbers. A closed-end question (i.e., asking for a fixed set of responses) that asked for a simple "yes" or "no" answer, for example, typically allowed for four types of responses (yes, no, no opinion, no response). These four responses were then coded "1, 2, 3, and 4." This process continued until all questions and answers were listed on master code sheets.

The final step in preparing the surveys for use in the computer required keypunching field data into a computerized data base for later machine processing. The keypunching and computer processing of the survey data was managed by the staff of Darbyshire & Associates. Computer programming required for compiling and processing the survey was also prepared in-house.

The computer printout includes a series of six cross-tabulations for each question. Basic household characteristics, length of residency, seasonality of residency, and plans for remaining in Tyonek, together with income and employment characteristics, were selected as potentially meaningful methods of discovering differences within Tyonek's population. While in many cases these cross-tabulations are not significant, they were included for every question so that any significant relationships would not inadvertently be omitted.

Survey Sample

The survey was organized to obtain a complete questionnaire for every dwelling unit. Village leaders requested that non-Native households (e.g., those with teachers as heads of households) be excluded from the survey. Some residents were away from home during the week of survey. Other residents chose not to be surveyed. Altogether, residents from 54 of the 89 households in Tyonek were surveyed.
READING THE PRINT-OUT

This section presents a short explanation of the format used in the computer printout of survey results. Also, several examples are given of analyzing/interpreting data. This description should prove helpful, for example, both to those interested or involved in the development of community goals and objectives, as well as to those that may be interested in using the raw survey results to provide information for other programs or projects.

The findings on each of the 132 "subquestions" derived from the 64 questions are presented on individual printout sheets. An annotated example of the computer printout is shown in Table 1, on the following page, and illustrates the findings on Question 11, "If you have not always lived in Tyonek, what town did you come from?" The question itself, sometimes slightly reworded, is numbered and printed on the top of the page. The seven possible responses - Anchorage, Kenai/Soldotna, elsewhere in Alaska, Seattle, outside Alaska, not applicable, and no response - are listed vertically at the far left side of the page.

The first two columns in the printout show the number and percentage, respectively, of the total sample which checked each possible answer. Thus, in this example, four people responded "Anchorage" (or 7.4% of the total survey); two responded "Kenai/Soldotna" (3.7%); another 37 responded "not applicable" (68.5% and meaning they have always lived there); and so forth, until all 54 surveys were accounted for. As with all other questions on the printouts, the first two columns will always total 54 and 100.0%, respectively.

The rest of the data shown on the printout refers to information that has been cross-referenced (or "cross-tabbed") with basic demographic and attitude questions. These cross-tabs allow a comparison of findings among different types of questions. An examination of the sample printout shows the following cross-tabs and categories in slightly abbreviated form:

- Household income, in thousands of dollars;
- Length of residence in Tyonek, in years;
- Seasonality of residence in Tyonek, in months of a year;
- Education level achieved by the head of household, in years of schooling completed;
# TABLE 1

If you have not always lived in Tyonek, what town did you come from?

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>NUM.</th>
<th>PER.</th>
<th>CENT.</th>
<th>$5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>&gt;35</th>
<th>NR</th>
<th>&lt;1</th>
<th>1-2</th>
<th>3-10</th>
<th>10+</th>
<th>ALWAYS</th>
<th>NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchorage</td>
<td>7.4</td>
<td>13.3</td>
<td>16.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Kenai/Soldotna</td>
<td>3.2</td>
<td>0.0</td>
<td>0.0</td>
<td>6.7</td>
<td>8.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>elsewhere in AK</td>
<td>3.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Seattle; WA</td>
<td>68.5</td>
<td>73.3</td>
<td>58.3</td>
<td>62.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>72.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>not applicable</td>
<td>4.74</td>
<td>5.6</td>
<td>11.1</td>
<td>5.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>5.9</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL/SAMPLE</td>
<td>54%</td>
<td>27.8</td>
<td>22.2</td>
<td>14.8</td>
<td>13.0</td>
<td>5.6</td>
<td>11.1</td>
<td>5.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>94.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**A.** Question printed at top.

**B.** Answer Categories.

**C.** This column shows the number of respondents (or surveys) who answered within each answer category.

**D.** This column shows the percent of respondents who answered within each answer category.

**E.** These column totals show the total number of surveys and the percentage of total surveys (note: These two figures will always equal 54 and 100.0%, respectively, as all surveys were accounted for).

**F.** Cross Tabulation, or "cross-tab," titles.

**G.** Answer Categories within cross-tab, in this example, "<5," "5-9" and "10-14," indicating income brackets of households in Tyonek.

**H.** These figures show the percentage of respondents who gave each answer, within that column. Thus, each column (H) totals 100% (note: Rounding errors of +/- .1%).

**I.** Bottom figures show the percentage of each column of the total number of surveys. These figures should total 100% for each cross-tab.
o Length of time family intends to remain in Tyonek, in years; and

o Principal occupation of head of household.

All cross-tab data are shown by percentage of each category within that particular cross-tabulation. The first cross-tab is labeled "HOUSEHOLD INCOME," meaning total income earned by all members of a household. This information is reported in seven columns "<5" (less than $5,000); "5-9" (from $5,000 to $9,999); "10-14" (from $10,000 to $13,999); and so forth to "NR" (which stands for "no response"). For example, by referring to the "10-14" column of the "HOUSEHOLD INCOME" cross-tab, it can be seen that 62.5% of the households having total incomes ranging from $10,000 to $13,999 have heads of household who have always lived in Tyonek (i.e., responding "not applicable" to this question), while 12.5% of the households in this total income range chose not to respond to this question. Likewise, no households (0.0%) in this total income bracket had heads of household who originated either in Anchorage, outside Alaska other than Seattle, or the Kenai/Soldotna area.

The final number in these total household income categories shows the proportion of households in each category in relation to the total sample, and as such do not represent the total of that particular column. Thus, in this example, "<5;" "5-9;" and "10-14" account for 27.8%; 22.2%; and 14.8% of the total sample, respectively.

It must be noted that, for all cross-tabs, the bottom figure in each column shows the percentage of that entire column as a response to the total survey sample.

Each of the cross-tabs has a column labeled "NR." This stands for "no response," meaning persons who, for whatever reason, chose not to complete that particular question. Thus, under the "EDUCATION" cross-tab, there were 5.6% (i.e., 3 individuals) of the total survey in which the question on number of years completed by the head of household was not answered.

All data shown in the printouts are given in percentages. Since the actual number of surveys in each category within a cross-tab is different, the use of percentage figures simplifies the comparison of findings within each cross-tab. As shown in this example, percentages can be added up within a column thereby accounting for the complete distribution of that column (adding columns will always yield 100.0% +/- rounding errors). However, percentages cannot be added across columns unless the percentages are converted back into the actual number of surveys. As noted above, the bottom number in each column shows the percentage of that column in relation to the total survey sample. To find the actual number of surveys that any particular column includes,
simply multiply the total number of surveys (54) by the percent-of-sample figure shown for that column. Thus, the total number of surveys included in the "<5" column under the "HOUSEHOLD INCOME" cross-tabs equals 54 total surveys x 27.8%, for a column total of 15 surveys (54 x .278 = 15).

After the number of surveys within a column has been determined, the number of cases within any particular category can be just as easily calculated. Continuing with this example the "<5" column of the "HOUSEHOLD INCOME" cross-tabs includes a total of 15 surveys. Of those 15 surveys, 13.3% had heads of households who came from Anchorage. By multiplying 15 surveys by 13.3%, it is seen that two of the 15 heads of households in this income group surveyed came from Anchorage (15 x .133 = 2).

The following "Interpretation of Individual Survey Questions" section provides an analysis of each survey question as reported in each of the 132 computer printouts. The explanation of the format of the computer printout in this section presents the type of information which can be derived from the survey. [With this background in mind, the basis for the conclusions drawn in the "Interpretation of Individual Survey Questions" section can be understood more readily, or even checked and verified by those interested in the analysis of the survey.]
INTERPRETATION OF INDIVIDUAL SURVEY QUESTIONS

Questions 1 thru 9 were designed to collect basic background information on the survey respondent and his/her family.

1. Are you the head of this household?

Two-thirds of the individuals interviewed considered themselves to be the heads of their households. No socioeconomic group (e.g., households with similar incomes, education, length of residency, seasonality of residency, occupation) had its head of household interviewed to a significantly greater or lesser extent than the others. The only socioeconomic group which was interviewed to a greater extent was made up of the smaller households with total incomes of less than $5,000.

About 2/3 of the respondents in each group were heads of household.

2. If no, what is your relation to the head of this household?

Of the approximate 1/3 of survey respondents who did not consider themselves to be heads of the household, 2/3 of these were spouses of the head of household, 1/5 (7.5% of the total) were sons, and the remainder were parents of the head of household.

Approximately 10% of the households with members other than heads of household or their spouses answering the questionnaire (e.g., mothers, fathers, and sons of the head of households) suggest the occurrence of extended families typical of village Alaska. However, this percentage in no ways suggests the full level of occurrence of this type of family unit. Many of the households in which either the head of household or his/her spouse answered the survey could have this type of family unit as well. Nevertheless this finding simply substantiates the occurrence of this type of family unit.

3. How many people live in this house?

The average household size in Tyonek is estimated in Table 2 to be 3.2 persons per household.
The smaller households (1- and 2-person households) tend to occupy the lower household income brackets (i.e., less than $10,000). This is partially offset by evaluating these households on a per capita income basis. Still, some of these households include elderly, retired heads of households who are maintaining themselves on relatively lower and fixed incomes. These households tend to be maintained on a year-round basis as compared to all other groups identified in this survey. The smaller households which do not have retired, principal wage earners tend to be headed by members employed in clerical positions.

On the other hand, the larger families occupy the upper household income brackets. These households still have higher incomes even when evaluated on a per capita basis. This is partially explained by the fact that larger households typically have more than one wage earner.

### 4. What is the sex of the head of this household?

Three-quarters of the households in Tyonek are headed by males.

The only socioeconomic groups which tend to be headed more by females are those households in which the principal occupation is listed as clerical or those households which listed "None" as their principal form of occupation. Still, these households are more often headed by males.
5. **(What race) is the head of this household?**

Non-Natives were purposefully excluded from this survey.

Over 98% of the Native households in Tyonek are headed by Indians, while the remainder are principally Aleuts.

The few non-Indian headed households have moved into Tyonek within the last 5 years and hold technical, managerial, or professional occupations in the community.

6. **What is the total cash income of ALL members of this-household last year?**

Total Average Household Income for 1980 is estimated in Tyonek to be $13,441.

<table>
<thead>
<tr>
<th>Total Household Income (S/Yr)</th>
<th>Number of Households</th>
<th>Total average Earnings (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than $ 5,000</td>
<td>15</td>
<td>$ 37,500</td>
</tr>
<tr>
<td>$ 5,000 - $ 9,999</td>
<td>12</td>
<td>90,000</td>
</tr>
<tr>
<td>$10,000 - $14,999</td>
<td>8</td>
<td>100,000</td>
</tr>
<tr>
<td>$15,000 - $24,999</td>
<td>7</td>
<td>140,000</td>
</tr>
<tr>
<td>$25,000 - $34,999</td>
<td>3</td>
<td>90,000</td>
</tr>
<tr>
<td>more than $35,000</td>
<td>6 (assume $38,000)</td>
<td>228,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>51</td>
<td>$ 685,500</td>
</tr>
</tbody>
</table>

$ 685,500

Total Average Household Income = $13,441/51 households

(*) Assumed the mid-point of each income bracket for average household income.

7. **What was the total cash income of the head of this-household last year?**

The average income earned by the head of household is $11,690.
TABLE 4

Head of Household Income, Tyonek, Alaska, 1980

<table>
<thead>
<tr>
<th>Individuals Income ($/Yr)</th>
<th>Number of Individuals</th>
<th>Total average Earnings (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than $ 5,000</td>
<td>19</td>
<td>$ 47,500</td>
</tr>
<tr>
<td>$ 5,000 - $ 9,999</td>
<td>10</td>
<td>75,000</td>
</tr>
<tr>
<td>$10,000 - $14,999</td>
<td>10</td>
<td>125,000</td>
</tr>
<tr>
<td>$15,000 - $24,999</td>
<td>3</td>
<td>60,000</td>
</tr>
<tr>
<td>$25,000 - $34,999</td>
<td>4</td>
<td>120,000</td>
</tr>
<tr>
<td>more than $35,000</td>
<td>4 (assume $38,000)</td>
<td>152,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>50</td>
<td>$ 579,500</td>
</tr>
</tbody>
</table>

Total Average Household Income = $ 579,500

50 households

(* ) Assumed the mid-point of each income bracket for individual income.

In an average household, the head of household earns approximately 86% of the total income earned. Second incomes contributed by other members of households served to raise all income brackets equally. That is, an equal number of lower income households benefitted from a second income as did the middle and upper income brackets.

A larger share of the individuals earning less than $5,000 have not completed more than 8 years of education, and tend more to be the retired.

8. What was the last grade of school completed by the head of this household?

Forty percent of all households are headed by persons with at least a high school education, another 6% of these individuals have pursued higher education.

Approximately 1/5 of households are headed by members who have not achieved an 8th grade education. These individuals are principally retired or tend to occupy the lower income brackets.

As might be expected, the higher educated heads of households (i.e., high school education or better) almost
exclusively occupy the upper-income brackets. Conversely those with less than 8 years of education comprise the lower brackets.

Individuals with a higher education tend to occupy the "clerical" and "other" employment positions. A large number of individuals with at least a high school education chose not to disclose their principal occupation.

9. What Native Corporations do members of this household own-shares in?

According to the survey, approximately 85% of the households in Tyonek have members belonging to Cook Inlet Region, Inc., while 2/3 of the households have members enrolled in Tyonek Native Corporation (TNC). Chenega Corporation and Sealaska were also represented by a few members of households in Tyonek.

Households with members enrolled in TNC indicated universally an intent to remain indefinitely in the community.

The next series of questions was designed to capture attitudes of residents towards the community of Tyonek as well as characteristics of residency.

10. How long have you lived in Tyonek?

Over 90% of the respondents have been residents of Tyonek for over 5 years. Approximately 70% of the respondents have always been residents of this village.

The few residents surveyed who have resided in the village far less than five years tended to be of households in the higher income earning brackets, and more highly educated (i.e., schooling beyond high school).

11. If you have not always lived in Tyonek, what town did you come from?

Of the approximate 1/3 who did not always live in Tyonek, most came from Anchorage or other parts of Alaska.

Individuals originating from outside Tyonek typically have intentions to remain for a shorter period of time than those originating from this village.

12. How many months of the year do you live in Tyonek?

Approximately 95% of the households of Tyonek are maintained year-round.
The few seasonal households (less than 5%) tend to be longtime residents and include those having intentions of remaining in Tyonek indefinitely. These households have heads of household who are exclusively involved in labor occupations.

13. What are the best things about living in Tyonek?

The responses to this question are ranked in the following list in order of times mentioned (i.e., either as their first, second, or third choice).

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Percent of Households which mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peaceful/quiet</td>
<td>24%</td>
</tr>
<tr>
<td>Lifestyle and culture</td>
<td>22%</td>
</tr>
<tr>
<td>Small/isolated</td>
<td>19%</td>
</tr>
<tr>
<td>Hunting/fishing access</td>
<td>17%</td>
</tr>
<tr>
<td>Family/friends</td>
<td>13%</td>
</tr>
<tr>
<td>Church</td>
<td>6%</td>
</tr>
<tr>
<td>Lack of traffic</td>
<td>6%</td>
</tr>
</tbody>
</table>

The attribute most often mentioned was the isolated and peaceful lifestyle that the village provided. Access to hunting and fishing resources was listed next, followed by family relationships and friends and ties to the local church. Lack of traffic was also listed as a positive aspect for Tyonek.

14. What are the worst things about living in Tyonek?

The responses to this question are ranked in the following list in order of times mentioned (i.e., either as their first, second, or third choice).

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Percent of Households which mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol/drugs</td>
<td>33%</td>
</tr>
<tr>
<td>Lack of jobs</td>
<td>22%</td>
</tr>
<tr>
<td>Nothing!</td>
<td>18%</td>
</tr>
<tr>
<td>High prices</td>
<td>9%</td>
</tr>
<tr>
<td>Boredom</td>
<td>6%</td>
</tr>
<tr>
<td>Transportation</td>
<td>4%</td>
</tr>
</tbody>
</table>
Alcoholism and drug abuse were cited by 1/3 of the respondents as the single worst thing about living in Tyonek. Approximately 1/5 stated flatly that "nothing" was wrong about living in Tyonek.

Another 1/5 of the community felt that the lack of job opportunities is a serious problem. About 13% cited this as the principal problem with living in Tyonek.

High prices, boredom, and problems with transportation comprised the remaining problems cited with life in Tyonek.

Households of the lower income brackets cited "lack of jobs" as the principal problem, while all other income groups cited alcoholism equally as the major problem.

15. **How long do you and your family intend to remain in Tyonek?**

Two-thirds of the household respondents surveyed listed "indefinitely" regarding the length of time they plan on remaining in Tyonek. A bulk of the remainder indicated they were not sure of their length of stay. A little over 5% indicated they had plans of leaving within the next 5 years.

The higher income bracket households tended to either be uncertain of their length of stay or planned to leave within the next 5 years.

16. **Do you think Tyonek is a small community, medium-sized-community or a large community?**

Two-thirds of the respondents felt Tyonek to be a "small" village while the remainder classed it as a "medium-sized" village.

Perceptions of the size of Tyonek did not vary much among any of the socioeconomic groups identified in this study.

17. **Would you like to see Tyonek remain the same size, grow, or decline in population?**

The community is split evenly between those who desire growth and those who wish it to remain the same.

A strong split is seen in attitudes towards change between the different levels of household incomes. Lower income households tend to favor remaining the same size while the higher income households wish to see the community grow in size. These higher income households favoring growth tend
also to be made up of those in professional, managerial, and technical fields who have recently become members of the community.

18. **Opinions on the quality of community services.**

See Chapter 3 of this study for the tabulation and analysis of the responses to this section of the questionnaire.

This section of the questionnaire is designed to elicit information about employment in Tyonek and the major wage earner in each household.

19. **What is the principal occupation of the major wage earner in this household?**

Approximately 1/3 of the households indicated either no primary skills or did not respond. Those not responding indicated household incomes in the lower brackets. Another 1/4 of the households listed their principal occupations as laborer or "roughneck."

Next in frequency, clerical and sales occupations were listed (7%). Commercial fishing and retirement were evenly listed and combined to represent over 11% of the households.

Positions as heavy equipment operators comprised another 7% of all principal forms of occupation in Tyonek.

"Other" occupations included work in public service programs: day care, health, custodial, and other community service occupations. Positions associated with lumbering, carpentry and plumbing were listed by a few household residents. These forms of employment are typically seasonal.

A few highly skilled year-round positions were held by a few heads of households in bookkeeping, state employment, and in aviation.

Construction and commercial fishing are typically seasonal. These positions comprised approximately 40% of all employment engaged by heads of households in Tyonek.

The lower-income households were those where the respondent listed "retired," "none," or chose not to respond to the question.

The middle-income households are principally made up of those within the clerical, fishing, labor and roughneck occupations, while the higher-income households listed
"other" occupations (i.e., program supervisors or directors, pilots, and state employees) and heavy equipment operators as their principal form of household employment.

20. What other skills does the major wage earner in this household have?

The secondary skills of the major wage earner are listed in order of magnitude below. The percentages given indicate the number of households that listed these skills either as their first, second, or third response.

<table>
<thead>
<tr>
<th>Secondary Skill</th>
<th>Percentage of Households with skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing and Hunting</td>
<td>26%</td>
</tr>
<tr>
<td>Carpentry, Plumbing, Welding</td>
<td>15%</td>
</tr>
<tr>
<td>Laborer</td>
<td>15%</td>
</tr>
<tr>
<td>Mechanic</td>
<td>13%</td>
</tr>
<tr>
<td>Heavy Equip. Operator</td>
<td>9%</td>
</tr>
<tr>
<td>Clerical</td>
<td>9%</td>
</tr>
<tr>
<td>Cooking</td>
<td>7%</td>
</tr>
</tbody>
</table>

The form of secondary skills listed most often were in fishing and hunting. This may represent the seasonal involvement of households in subsistence activities to supplement their incomes.

Approximately 1/3 of the households have construction related skills in carpentry, plumbing, welding and general labor which they consider as secondary. Another 1/4 have mechanic or heavy equipment related skills they list as secondary. Clerical skills are listed as secondary by approximately 10% of the major wage earners, while another 7% list being cooks.

Those listing "labor" as their primary form of employment also indicated a larger variety of other more technical skills as secondary. These skills include carpentry, plumbing, welding, heavy equipment operating, and clerical skills. This finding points out an highly diversified and under-utilized skill force in Tyonek. It also represents the broad base of skills that individuals living in small villages acquire out of necessity.

21. Is the major wage earner currently employed?

Close to 60% of the surveyed households indicated their principal wage earner to be unemployed at the time of this survey. The middle-income bracket households tended to be employed the most.
The occupation class unemployed most are those listing "laborer" as their primary occupation, while recent arrivals to Tyonek tend to be employed to a greater degree than the longer term residents.

22. **What months did the major wage earner work full-time during the past year?**

The following figure is an estimate of cash employment levels during 1980. These values are based upon a 15% survey sample.

![FIGURE 1](image-url)

**Monthly Employment Levels, Tyonek, 1980**

(number employed)

23. **(What portion of the year) does the major wage earner prefer to work?**

Over 60% of the community respondents would prefer to work full-time. Approximately 1/4 of the householders would prefer seasonal employment over full-time, while less than 10% would like only part-time employment.

The middle- to upper-income households indicated a stronger preference for the less than full-time employment. Those wishing for only part-time were exclusively the lower-income households. These households are principally headed by retired persons.

24. **Would the major wage earner in this family leave Tyonek to gain full-time employment?**

Close to 60% of the households would leave Tyonek for full-time employment. Most of those willing to find jobs outside the community listed their primary form of occupation as "laborer." Very few (less than 3%) of those currently with "clerical and sales" occupations would seek non-local forms of employment.
25. **Under which of the following circumstances would the major-wage earner leave Tyonek for a paying job if it were-necessary?**

Most of the household respondents surveyed desired a rotation schedule of "2 weeks on, 2 weeks off" for non-local employment if they had a choice. Fewer than 15% would like the faster "1 week on, 1 week off" schedule.

Those choosing not to leave at all were primarily those respondents earning less than $10,000 annually.

26. **Are there times during the year when it would be hard for-you to work at a job because of your need to gather-subistence foodstuffs?**

Over 1/2 of the household respondents indicated that it would be a hardship if cash employment interfered with subsistence schedules.

Households with either laborers or clerical workers indicated to a much lesser degree than any other group that subsistence schedules would pose hardships with cash employment schedules.

27. **When (during the year) would cash and subsistence-employment schedules conflict?**

Almost 1/4 of the households interviewed indicated that subsistence activities occur year-round and that cash-earning activities would present a conflict with subsistence activities.

Spring and fall were the seasons listed as presenting the most conflict between these two economies.

Households with the lower incomes indicated most strongly that a year-round conflict could exist between subsistence and cash activities. Also, those households with heavy equipment occupations stressed a potential year-round conflict most strongly.

It should be pointed out that a year-round conflict does not necessarily mean there is not a willingness to be cash employed while still engaging in subsistence activities. What may be drawn rather is that a rotational scheduling system could be established which allows both activities to occur within the same month or season.
The following series of questions are aimed at conducting a performance evaluation of the various organizations and agencies set up to serve Tyonek's interests. These questions asked opinions about the quality of services being delivered and asked for specific reasons for this judgment.

28. What kind of job do you think Cook Inlet Region, Inc. is doing for the people at Tyonek?

Over 1/3 of the households felt Cook Inlet Region, Inc. (CIRI) is performing its functions satisfactorily, while less than 1/4 considered its performance as poor.

The higher income households were slightly stronger in the ratings of CIRI's performance as poor or bad.

29. Why (do you feel as you do about the job that Cook Inlet-Region, Inc. is doing)?

The most consistent improvement suggested was that more should be done to provide additional jobs. This criticism was offered principally by the upper-income households.

30. What kind of a job do you think Tyonek Native Corporation is doing for the people at Tyonek?

Over 1/2 of the households interviewed were split evenly between rating Tyonek Native Corporation's (TNC) performance between "fair" and "good." Of the remainder, approximately 1/5 chose not to respond to this question. The lower-income households tended to rate TNC's performance higher than any other socioeconomic group within the community. The 16% that rated TNC's performance as "bad" were almost exclusively of the higher-income households.

31. Why (do you feel as you do about the job Tyonek Native-Corporation is doing)?

Over 1/2 of those surveyed did not have comments to make on TNC'S performance, however, the most commonly suggested improvement made was that this organization did produce jobs for its shareholders. Once again, it was the middle- and upper-income households that offered this criticism of not doing enough to stimulate development of new jobs for locals.

32. What kind of a job do you think the Native Village of Tyonek (IRA) is doing for the people at Tyonek?

Over 3/4 of the community felt that the village IRA council was doing either a "fair" or "good" job for the people of
Tyonek. Once again, the few low evaluations were principally made by the middle- and higher-income households.

33. Why (do you feel as you do about the job the Native Village of Tyonek (IRA) is doing?)

Approximately 2/3 of the households surveyed did not offer any comments about the job being done by the local IRA. Of those comments made, the most common called for improvements in the services provided by the IRA.

34. What kind of a job do you think the Kenai Borough School-District is doing for the people at Tyonek?

Over 1/2 of the households surveyed felt that the district was doing either a "fair" or even a "good" job. Less than a 1/3 rated their performance either as "poor" or "bad." The attitudes held seem to be evenly distributed across all socioeconomic groups within the community.

35. Why (do you feel as you do about the job the Kenai Borough-School District is doing)?

Half of the surveyed households offered comments. The comment offered most frequently once again is centered around the provision of jobs. Many of the lower-income households feel that the number of school jobs available for locals should be improved.

The second most common suggestion was to continue providing a good education.

Household respondents who intend to remain only for a few years in Tyonek stressed more strongly than any other group the importance of continuation of a quality education. Those household respondents who have indefinite plans on remaining in Tyonek tended to stress local hire involving positions with the school.

36. What kind of a job do you think the Kenai Borough is doing-for the people of Tyonek?

Slightly less than 1/2 of the community feels that the borough is doing either a "fair" or "good" job for the people of Tyonek, while another 1/4 rated its performance as either "poor" or "bad."

The lower income-households tended to rate the performance of the borough higher than either the middle- or higher-income households.
37. **Why (do you feel as you do about the job the Kenai Borough is doing)?**

Approximately 70% of the community did not have specific comments to offer the Kenai Borough. Those choosing to comment tended to be the higher-income households.

Thirteen percent of the community suggested that either what the borough was doing right or that what they were doing wrong centered around the lack of provision of local jobs.

The following series of questions were designed to measure the community's perceptions and attitudes about the development of coal resources in the Tyonek/Beluga area.

38. **Over the past several years there has been a lot of talk about coal development in the Tyonek/Beluga area. Have you heard of this?**

Close to 90% of the community stated they were aware of the proposals to develop coal reserves in the region. The few who indicated they did not know of coal development did not belong to any particularly unique socioeconomic group in the community. Slightly more of the households belonging to the less-than-$5,000 income bracket which also listed "none" for principal occupation skills indicated no knowledge about these proposals.

39. **Where did you hear of this (coal development)?**

The most commonly cited source of information about coal development is discussions with other members of the community.

The breakdown of the community along their sources of information does not differentiate any particular socioeconomic group in the community.

40. **Do you know what companies or groups are planning these developments?**

At the time of this survey about 3/4 of the community was not aware of which companies propose to develop the nearby coal resources. The 13% who ventured some knowledge about the development of these reserves listed "clerical" occupations. This may suggest inside knowledge gained from employment in local agencies dealing with these proposals. Other than the clerical employed household heads, others that are aware of the companies/groups who prepare to develop coal reserves do not stand out in any other particular profile of the community.
41. Who (are the companies or groups you know are planning to develop the coal reserves)?

Close to 90% would not specify which company has plans to develop the coal reserves. Of the few that did, Placer Amex was most often cited, while Diamond Shamrock and Bass Hunt Wilson were also cited.

42. Do you know where this development is to take place?

Approximately 2/3 of the community surveyed did not know exactly where the proposed coal development would take place. The approximate 1/3 that did claim to know were those households with professional or technical occupations listed as their primary skills.

43. Where (do you think coal development is going to take place)?

Close to 3/4 of the community did not claim to know where coal development would take place. The remainder suggested the Beluga area which was followed by Capps Glacier. Once again, the households headed by professional or technically employed individuals claimed to know the particulars of coal development plans.

44. Do you know what type of mining is to be used?

Close to 2/3 of the community either did not know or did not respond to this question. Of the remaining 1/3, the clerically, professionally, and technically employed household members indicated in-depth knowledge about proposed developments.

45. What type (of mining do you think is going to take place)?

Again, close to 3/4 of the community surveyed did not know what types of coal mining is being proposed.

Strip mining is the one form of mining most expected. Once again, the households with clerical, professional and technical employed heads of households offered answers to this question.

46. Do you know if or how the coal is to be processed (locally)?

Almost the entire community surveyed (95%) either did not know how the coal is to be processed or responded to this question as "not applicable."
47. **How (do you think the coal is to be processed)?**

Over 90% did not answer this question. The most often cited method of local processing is methanol treatment. Knowledge of this method was apparent to the professional and technical skilled households.

48. **Do you know the routes proposed overland to get the coal from the mine to the coast for shipping?**

Over 90% either responded "not applicable" or "no" to this question. Of those who claimed to know of proposed routing, nothing significant can be said about their unique socioeconomic group within the community. That is, the 10% claiming knowledge were found in all sub-groups within the community.

49. **What route (do you think the coal will be transported over to the coast)?**

More knowledge was claimed regarding this question than the other more technical aspects of coal development. Various routes and modes were suggested. These included rail or truck modes of transportation suggested equally with various alternative routes. None of these systems was offered more than any of the others.

50. **If coal resources were to be developed in the Tyonek/Beluga area, do you think it would mean more jobs for Tyonek residents?**

Over 3/4 of the community surveyed felt that coal development would create significant job opportunities for locals. However, this belief was not shared by many of the more middle-income households.

51. **(Do you feel coal development will) affect your subsistence gathering activities?**

Over 60% felt subsistence resources will be affected by coal development. Another 20% said that they didn't feel any conflicts would arise. These respondents tended to be from the middle-income households with laborer and roughneck occupations. These households also tended to commute outside the village for employment and were not as active in subsistence as other groups.

52. **(Do you feel coal development will) pollute the air?**

Over 2/3 of the households surveyed felt that coal development will bring about a lowering in air quality in the region. This belief was stressed more strongly by the
middle-income households than any other group in the community. Also those households with clerical, professional and technically employed heads of households were strong in offering this criticism.

53. (Do you feel coal development will) pollute the water?

Fewer respondents were concerned about ill effects being brought on water quality than air quality from coal development. Still though, 60% felt that this development will bring polluted water.

Close to 30% had "no opinion" about the effects on water quality from coal development. The middle income houses were the dominant socioeconomic group in the community in feeling that coal development did not necessarily mean polluted water. On the other hand, the households with clerical, professional, and technical employees were strongest of the opinion that this form of development would mean water pollution.

54. (Do you feel coal development will) improve the quality of life at Tyonek?

The community was almost evenly split in its opinions about coal development bringing a better quality of life or that it would lower the quality of life. Slightly more felt development would not improve the quality of life. The clerical and professional households were the strongest of the opinion that development would lower the quality of life.

55. (Do you feel coal development will) overall, be good or bad for Tyonek?

Most people surveyed felt that coal development would be good for Tyonek overall (even considering the possibility of a lowering in the quality of life). Close to 1/3 felt that although the quality of life may be lowered by coal development, enough other benefits (especially jobs for locals) would result in a better community. Another 1/5 maintained even while recognizing the trade-off between local job opportunities and reductions in quality of life, that the balance still would not be worth it.

56. Do you think Tyonek should have a road connection to any coal development activities in the area?

Close to 70% agreed with a road connection between any coal development and the community of Tyonek. Only 1/5 of the households surveyed did not want to see this connection to the village made. Those disagreeing with a road connection
were principally the middle-income households with labor and clerical type jobs as principal occupations.

57. Do you think Tyonek should have a road connection to any new communities that might be built in association with coal development activities?

Slightly more of the community disagreed with the idea of connecting Tyonek to other communities than to a connection between Tyonek and the actual site of resource development. One-third were against any road connections to other settlements.

The households with heavy equipment and clerical skills employed as principal forms of occupation were the most strongly against any road linkages to other communities.

58. If this coal development were to come about, would you or any people in this household want to work on the project?

Approximately 85% of the households desired to be involved in coal development, with 2/3 desiring to be involved in full-time employment. Those few households choosing not to be involved consisted almost entirely of households with well paying program supervisory or director jobs, state employment, or highly technical and professional forms of employment.

Those requesting part-time involvement in coal development were the middle-income households that also felt year-round conflicts between subsistence and cash employment.

59. If you/they worked on the coal development project would you/they be interested in moving to a town closer to your/their job?

Forty-four percent indicated they would not be willing to relocate to work in coal development. Slightly less indicated a willingness to relocate.

Those households which had heads of households who were either retired, employed in fishing, or employed as laborers and roughnecks comprised the vast majority of those households not wishing to relocate.

60. If the coal development project was within 25 miles of Tyonek, would you/they prefer to drive to work and back each day?

Less than 1/3 objected to driving as a means of commuting to work in coal development while maintaining a residence in Tyonek. The group least willing to commute by
automobile were those not interested in becoming involved in coal development in the first place.

61. Do you think organizations like Cook Inlet Region, Inc.—the IRA, or the village corporation should (become actively involved in coal development)?

Over 80% expressed either satisfaction with present levels of involvement or were anxious to see the development of more local jobs. The remaining comments offered suggested in vague terms that these organizations become more involved in development schemes like coal or encourage other forms of development.

Approximately 6% of the community said that they would like to see these organizations discourage coal development. These households were comprised primarily of the middle-income households which maintain long-term, year-round residences. These respondents had indefinite plans for remaining in the community. Their present employment was either as fishermen or as clerical workers within local government.

62. Do you think Tyonek Village Corporation should try to earn any money for its shareholders by leasing or renting any of its lands for port development associated with any coal-development activities?

Approximately 3/4 of the community thought TNC should either lease or rent lands for port development associated with the development of the coal reserves. No unique groups surfaced within the community choosing one side of this argument over the other. Rather, this issue was evenly suggested by 3/4 of all socioeconomic groups within the community.

63. Do you think Tyonek Village Corporation should try to earn any money for its shareholders by leasing or renting any of its lands for needed road or railroad rights-of-way-associated with any coal development activities?

Slightly fewer of the households surveyed favored this type or venture with TNC lands over port development. Once again, this issue was not felt differently by any socioeconomic group within the community.

64. Do you think Tyonek Village Corporation should try to earn any money for its shareholders by leasing or renting any of its lands for any new townsites development associated with any coal development activities?
Although a majority (slightly over 1/2) still favor this use of TNC lands, it is by far the least popular form of land development with the community of Tyonek (i.e., port development, road ROW's, and townsite development).

The group most strongly against this use of TNC lands are the middle- and upper-income households with either clerical or heavy equipment employed heads of households.
CHAPTER 3
COMMUNITY INFRASTRUCTURE REPORT

Having completed an inventory of the community facilities and services available in Tyonek in the Community Profile, it is important to gauge (1) their capacity to meet existing demands, and (2) their ability to withstand future demands. In addition to measuring each facility's capacity according to conventional planning and engineering standards, the following evaluation has taken into account Tyonek residents' attitudes toward current facility and service levels, as expressed in the Community Attitudinal Survey. A separate analysis of each facility/service follows.

TYONEK CLINIC

PRESENT FUNCTION: This approximate 1,250 sq. ft. residence built in 1966 and later converted to a clinic includes a doctor's office, nurse's office, dentist's office, reception room, kitchen, bathroom with running water, and maintenance room in the basement. One full-time health aide and one part-time community health representative treat acute-care cases in this facility. Patients in need of emergency or long-term care are airlifted to Anchorage.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of available medical service was rated as follows:

- Good - 31.5% of total response
- Fair - 46.3% of total response
- Poor - 14.8% of total response
- No Opinion - 5.6% of total response

Suggested improvements included:

- Better equipment;
- More training for personnel; and
- More frequent and longer visits by physicians and dentists.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: The 1979 Uniform Building Code (UBC) requires a minimum of 2 exits where the number of occupants exceeds 5. Ramp access must be provided for the physically handicapped. Eighty square feet of space must be allotted each occupant.
FACILITY CAPACITY: 15.5 persons at any one time

NECESSARY EXPANSION: None. An average of 2-3 patients per day are seen in the summer months and 5-6 per day during the school year. This is still well below the maximum allowable number, given the total 1,250 sq. ft. space. If current health characteristics prevail (i.e., no epidemics and no major changes in group health conditions), this facility could accommodate up to twice the current population of Tyonek.

FIRE STATION/HEAVY EQUIPMENT SHOP

PRESENT FUNCTION: This approximate 5,000 sq. ft. building houses an ambulance and a 3/4-ton pick-up truck carrying fire hoses, and serves as a heavy equipment repair and service shop. A recently purchased used fire truck will be arriving soon. This vehicle will require additional heated storage area. Twelve fire hydrants are located throughout the community.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of fire protection was rated as follows:

- Good - 7.4% of total response
- Fair - 33.3% of total response
- Poor - 46.3% of total response
- No Opinion - 13% of total response

Suggested improvements included better fire equipment and facilities.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: According to the Pacific Region Insurance Services Office upon which the State Fire Marshall relies to evaluate the fire preparedness of individual communities, all "areas to be protected must be within a 5-mile response (road) distance of the closest fire engine and within an 8-mile response distance of the balance of any firefighting apparatus."

FACILITY CAPACITY: The Tyonek fire station is equipped to cover an area within a 5-mile radius of Tyonek fire station located at south end of airport runway.

NECESSARY EXPANSION: None. Almost all structures in the village lie within 1 mile of the fire station. The solid waste disposal site and the remaining structures at Edward Kroto Memorial Recreation Area are within 4.5 miles of the fire station. Since standards are not set according to population or density levels, existing firefighting facilities will be sufficient to serve any level of development within a 5-mile radius of the fire station.
POLICE PROTECTION

PRESENT FUNCTION: Search and rescue operations and police-related matters are the responsibility of the Department of Public Safety for an area stretching west from the Susitna River, south to Trading Bay, north to the Alaska Range and east into Cook Inlet.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of local police protection was rated as follows:

- Good - 22.2% of total response
- Fair - 22.2% of total response
- Poor - 29.6% of total response
- No opinion - 25.9% of total response

Suggested improvements included:
- replace policeman;
- local force
- more coverage; and
- local jail.

CAPACITY CALCULATIONS: Department of Public Safety, Office of State Troopers, calculates that 1 officer is sufficient to cover the Department's responsibilities in the Tyonek/Beluga area, as defined above.

NECESSARY EXPANSION: None. Community has expressed interest in having resident police officer position discontinued and having authorities flown over from Anchorage only upon request. Department of Public Safety has reportedly tried this approach in the past. It proved "financially unfeasible as frequency of calls made Anchorage-Tyonek-Anchorage flights too expensive on Department budget."

UNITED STATES POST OFFICE

PRESENT FUNCTION: Approximately 835 sq. ft. of space in basement of private residence houses 72 wooden, non-secure post office boxes some of which are used by more than one family (others are not used at all). Post office is open Monday through Friday 9-11:00 a.m. and 1-5:00 p.m. Mail is delivered once a day, Monday through Friday, by plane from Anchorage.
COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Suggested improvements included:

- construction of a new, separate facility;
- addition of enough private post office boxes to serve the entire community; and
- increased delivery schedule allowing for weekend deliveries as well.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: Uniform Building Code requirements call for a minimum of 2 exits where the number of occupants exceeds 50, 30 sq. ft. of space per occupant; and the provision of access by means of a ramp for the physically handicapped.

FACILITY CAPACITY: 27 people at any one time.

NECESSARY EXPANSION: Yes. While no more than 27 people are ever in the Tyonek Post Office at present, its current basement location in a private residence does not allow for ramp access nor for the possibility that the current homeowner may deny public access at any time. It is recommended that a separate public facility be constructed in the near future to accommodate a post office.

ESTIMATED COST OF EXPANSION: $115,000 for a 1,000-square-foot facility with secure post office boxes.

FUNDING SOURCE: Federal Government. A letter detailing problems with the present facility and drafted by the postmistress should be addressed to:

Robert Opinsky
MSC Manager
U.S. Post Office
Anchorage, Alaska 99502

Requests for expansion will be forwarded to San Francisco District Office where decision will be made to either build a new facility, lease an existing facility, buy one and expand it, or live with the present post office.

CHIEF CHICKALUSION COMMUNITY CENTER

PRESENT FUNCTION: Meeting hall, office building for IRA Council government.
COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: While it is agreed that there is enough space in the community hall to accommodate the number of people generally in attendance at community meetings, suggested improvements did include additional office space to accommodate 2 new employees who will be joining the IRA Council staff in the near future.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: Uniform Building Code requirements for "assembly areas in concentrated use without fixed seats" call for a minimum of 2 exits where the number of occupants exceeds 50 at any one time; for 7 sq. ft. of space per occupant; and for ramp access for the physically handicapped. Office space requirements call for 2 exits where the number of occupants exceeds 30 and for 100 sq. ft. per occupant.

FACILITY CAPACITY: 178 occupants at any one time in the meeting room; one person resident/working in each of the 4 offices.

NECESSARY EXPANSION: Yes. It is recommended that either (1) 200 sq. ft. of the meeting hall portion of the community center be divided into 2 additional office spaces for the new assistant grant writers who will be joining the IRA Council staff this year, or that (2) an addition be built onto the existing building to achieve the required additional 200 sq. ft.

FUNDING SOURCE: Rural Development Assistance Grants. Contact:

Gene Kane
Department of Community & Regional Affairs
Division of Local Government Assistance
225 Cordova Street, Bldg. B
Anchorage, Alaska 99501
Phone: 264-2201

TYONEK GUEST HOUSE/DAY CARE CENTER

PRESENT FUNCTION: An approximately 50,000-sq.-ft. building with 8 bedrooms, 4 bathrooms and a living room that are rented out as overnight accommodations for visitors to the village. Also included are a recreation room and kitchen which function as a day care center for local residents.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of available day care services was rated as follows:

   Good - 50% of total response
   Fair - 14.8% of total response
   Poor - 5.6% of total response
   No Opinion - 27.8% of total response
Suggested improvements included:

- more activities for children;
- more funding for the center; and
- acceptance of infants for care at the center.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: Uniform Building Code requirements for a Day Care Center include a minimum of 2 exits where the number of occupants exceeds 6; 50 sq. ft. of space per occupant; and ramp access for the physically handicapped. Requirements for "dormitories" include 2 exits where number of occupants exceeds 10; 50 sq. ft. of space per occupant; and ramp access for the physically handicapped.

FACILITY CAPACITY: Although the Tyonek Day Care Center is licensed by the State of Alaska for a total of 10 children, it seldom receives more than 1 or 2 per day; UBC requirements for 8 bedrooms (sleeping 2 each), 4 bathrooms, and above listed common areas call for a total of approximately 3,500 square feet.

NECESSARY EXPANSION: None. The 5,000-sq.-ft. Guest House/Day Care Center facility meets and surpasses both building code requirements and the current needs of the community in terms of guest accommodation and day care.

AIR TRANSPORTATION FACILITIES

PRESENT FUNCTION: The 3,350' x 100' gravel runway is rated by FAA officials to be adequate for light aircraft. The Tyonek runway accommodates an estimated 2,000 annual landings by air taxi operators.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of airport facilities was rated as follows:

- Good - 55.6% of total response
- Fair - 37% of total response
- Poor - 2% of total response
- No Opinion - 5.6% of total response

Suggested improvements included:

- equipment for IFR capabilities;
- smoothing out the bumpy runway; and
- better maintenance.
Quality of air taxi services in and out of Tyonek was rated as follows:

Good - 33.3% of total response  
Fair - 37% of total response  
Poor - 13% of total response  
No opinion - 16.7% of total response

Suggested improvements included:

- better planes and pilots;
- improved emergency services;
- decreased fares; and
- installation of a toll-free number to summon aircraft from Anchorage.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: According to FAA regulations, a 3,350-foot runway can serve lightweight aircraft. A 5,000-foot runway would be necessary to accommodate "transport category aircraft" (i.e., DC-6's, Hercules).

FACILITY CAPACITY: Primarily light aircraft. This airstrip can accommodate landings of loaded transport category aircraft in good weather, but these aircraft must be empty in order to take off successfully on the Tyonek runway.

NECESSARY EXPANSION: None at present. Community has survived to date without full transport category capabilities and has still been able to accommodate large construction projects. Heavy equipment or construction needs for the community itself are not anticipated to exceed the scale of buildings currently in the community. Furthermore, it is anticipated that heavy equipment transport needs generated by proposed coal development in the area will be accommodated at other airstrips constructed and operated by coalfield developers.

LOCAL ROADS

PRESENT FUNCTION: Approximately 3 miles of gravel roads maintained by the village of Tyonek, and accommodating 20 pick-up trucks, 10 motorcycles, 5 three-wheel Hondas and 6 snowmachines.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of local roads was rated as follows:

Good - 9.3% of total response  
Fair - 44.4% of total response
Poor - 38.9% of total response
No Opinion - 7.4% of total response

Suggested improvements included:

- oiling and paving the road;
- fixing existing potholes; and
- more frequent grading and watering down of the roads.

PLANNING/ENGINEERING CAPACITY REGULATIONS: Given an average daily traffic count of not more than 75-200 trips per day on Tyonek roads, the following planning standards apply:

- Street width: 18-20 feet
- Street slope: 5-10% of total response
- Sight distance: 100 feet
- No sidewalks required
- No parking required
- No provision for widening required

FACILITY CAPACITY: At least double the current population of Tyonek in terms of capacity of existing roads.

NECESSARY EXPANSION: None at present. Existing road system meets the following requirements:

- Clear access to all dwellings by residents;
- Lack of congestion on existing streets (given current number of vehicles);
- Road quality withstands seasonal snow loads, etc.;
- Direct access to all buildings by public safety vehicles.

However, while existing roads can handle double the current capacity, new roads would need to be built if new subdivision development were to be located beyond the end of existing road systems.

SANITARY LAND FILL/SOLID WASTE DISPOSAL SITE

PRESENT FUNCTION: Serves as final dumpsite for all village's solid refuse as well as an excavation pit yielding landfill for local construction projects. In addition, there are a number of strategically located public trash cans throughout the community. These, and the residential accumulation of refuse, are hauled on an individual basis to the disposal site.
COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of disposal site was rated as follows:

- Good - 44.4% of total response
- Fair - 33.3% of total response
- Poor - 7.4% of total response
- No Opinion - 13% of total response

Suggested improvements included better trash removal and the installation of a fence around the site.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: Kenai Peninsula Borough reports that the site is currently meeting the disposal needs of the community. However, the operating permit issued by the Department of Environmental Conservation includes a requirement for the construction of a 5-foot fence around the site.

FACILITY CAPACITY: Current site could accommodate slight increase in Tyonek population level.

NECESSARY EXPANSION: None at present. However, the council should dedicate half again as much land for continuation of the landfill/disposal site as the present site is expected to reach maximum capacity within the next 5-7 years.

-----------------------------

SEWAGE DISPOSAL

PRESENT FUNCTION: Individual septic tanks dispose of each dwelling's raw sewage.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of local sewage disposal was rated as follows:

- Good - 31.5% of total response
- Fair - 37% of total response
- Poor - 11.1% of total response
- No Opinion - 18.5% of total response

Suggested improvements included "upgrading" the system.

PLANNING/ENGINEERING CAPACITY REQUIREMENTS: The Public Health Service requires the sanitary disposal of all raw sewage so as not to allow seepage into any habitable areas or accessible watersheds.

FACILITY CAPACITY: There is no central system. Each individual septic tank is capable of holding sewage for entire household.
NECESSARY EXPANSION: None. The Indian Health Service Branch of the Public Health Service is just completing the installation of 31 new individual septic tanks in the village. This project, plus the 1979 replacement of 29 failing tanks, render all of the residences in Tyonek equipped with new septic tanks.

COMMUNITY WATER SYSTEM

PRESENT FUNCTION: Buried pipe water system fed with water from nearby Second Lake which is piped to a 175,000-gallon storage tank which is 75' high x 20' in diameter. All 87 homes have piped water.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of the local water system was rated as follows:

- Good - 18.5% of total response
- Fair - 42.6% of total response
- Poor - 25.9% of total response
- No Opinion - 11.1% of total response

Suggested improvements included:

- fixing the tank;
- improvement in the taste of the water;
- increased water pressure; and
- elimination of the "rusty" quality of the water.

PLANNING/ENGINEERING CAPACITY CALCULATIONS: 75 gallons per person per day.

FACILITY CAPACITY: 1,150 people.

NECESSARY EXPANSION: None.

ELECTRIC PUBLIC UTILITY

PRESENT FUNCTION: Chugach Electric Association currently provides the community with electric power via its nearby Beluga Power plant.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: No complaints were issued regarding current levels of electrical service in the village.
PLANNING/ENGINEERING CAPACITY REGULATIONS: Chugach Electric Association estimates that, given current usage ratios, the village of Tyonek will not exceed a 1-megawatt level during any given peak period.

FACILITY CAPACITY: Chugach Electric Association estimates that the Beluga plant would have no problem meeting a doubling or a tripling of the electricity demand currently being made by Tyonek. In fact, it is possible that the facility's capacity is even greater than that, with respect to Tyonek, but detailed studies would need to be undertaken in order to determine this.

NECESSARY EXPANSION: None.

E.L. "BOB" BARTLETT ELEMENTARY AND HIGH SCHOOL

PRESENT FUNCTION: Facilities totaling approximately 30,000 square feet serve grades K-12 with 8 classrooms, a gymnasium, a shop, a library, and a commercial kitchen. On staff are 11 teachers, a principal, a counselor, kitchen and custodial personnel, and itinerants - a school nurse, a psychologist, and a speech therapist. At present, 107 students are enrolled in Bartlett School.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of the local school buildings was rated as follows:

- Good - 64.8% of total response
- Fair - 25.9% of total response
- Poor - 1.9% of total response
- No Opinion - 7.4% of total response

The only improvement suggested by survey respondents was to refinish the gym floor. However, last year the IRA Council requested a swimming pool addition to the school complex.

Quality of school educational programs was rated as follows:

- Good - 44.4% of total response
- Fair - 20.4% of total response
- Poor - 9.3% of total response
- No Opinion - 25.9% of total response

Only 2 individuals requested improvements in educational programs; specifically, "more special programs."

PLANNING/ENGINEERING CAPACITY CALCULATIONS: According to a study conducted by the Kenai Peninsula Borough School District entitled "Enrollment Projections and School Construction Needs: 1981-82"
through 1985-86," the 30,000-sq.-ft. facility at Tyonek was designed and constructed to accommodate an eventual total of 250 students.

FACILITY CAPACITY: 250 students.

NECESSARY EXPANSION: None at present. Projected enrollment through 1986 does not exceed 114 students according to the school district report. This is an increase of only 7 students in 5 years. The only event in the foreseeable future which would dramatically increase this growth rate would be the introduction to the Tyonek area of families of coal mine workers. In this case, new facilities would have to be built if enrollment were expected to rise above the 250-capacity level.

RECREATION SITES

PRESENT FUNCTION: An approximate 40,000 sq. ft. baseball diamond on the northwest corner at the intersection of "A" and "B" Streets; an 11,450 sq. ft. gravel playground with swings, monkey bars and slides just southwest of the Eeda Teen Center; and the Edward Kroto Memorial Recreation Area north of town at Big Lake provide recreational opportunities for Tyonek residents.

COMMUNITY ATTITUDES REGARDING CURRENT SERVICE LEVELS: Quality of recreation in Tyonek was rated as follows:

- Good - 16.7% of total response
- Fair - 11.1% of total response
- Poor - 51.9% of total response
- No Opinion - 20.4% of total response

Improvements suggested by respondents were "more activities" and "reopening the snack bar." Quality of parks in Tyonek was rated as follows:

- Good - 9.3% of total response
- Fair - 9.3% of total response
- Poor - 44.4% of total response
- No Opinion - 18.5% of total response

Suggested improvements included a new park and new equipment.

NECESSARY EXPANSION: Yes. Baseball diamonds to accommodate the community's high level of participation in summer softball leagues and general recreation areas to meet the improvements suggested the community attitudinal survey.
FUNDING SOURCES:

Kenai Peninsula Borough has appropriated:

- $7,500.00 for beginning of excavation, baseball diamond, small boat harbor, barbeques, picnic tables and parking lot at Edward Kroto Memorial Recreation Area;
- $6,500 in FY.1982 for the purchase of equipment and games; and
- $13,000 for a full-time recreation director position.

CONTACT:

Maggie Atkins
North Peninsula Recreation Service Area
Box 7116 NRB
Kenai, Alaska 99611
Phone: 776-8800

In addition, the Division of Land and Water Conservation of the National Park Service offers a funding program to communities wishing to develop their own parks. Under the conditions of this program the federal government will provide 50% of the funding necessary to develop the park (the community must provide the remaining 50%) if the following conditions are met:

- the community must have title to the land on which it is proposing to place a park; or
- the community must have a valid lease for the proposed piece of land for at least 25 years; and
- the land must be officially dedicated in perpetuity to the proposed park project; and
- the community must be able to provide 50% of the funding for the project either through cash monies or through force account of labor, material or equipment.

It is critical to determine which of the expansion projects cited above should come first in an action plan adopted by the IRA Council. As requested in this project contract we have developed just such a priority list below. Our suggestions for priorities are based on:

- Tyonek residents' opinions as reflected in the Community Attitudinal Survey conducted in July 1981;
- Each facility's ranking, with respect to capacity level as derived from accepted planning and engineering standards; and
Our experience and professional judgment of the community of Tyonek after having conducted the survey, researched and written the community profile and engaged in numerous conversations with council members and other residents.

Community Infrastructure Improvement Priorities

Priority #1: Fencing of Sanitary Landfill/Solid Waste Disposal Site

The Department of Environmental Conservation requires that the Solid Waste Disposal Site be surrounded by a 5-foot fence. Fencing materials have been delivered to the site and are ready for installation. It is recommended that this be done as soon as possible.

Priority #2: Construction of New U.S. Post Office

The location of a public facility within a private residence poses several problems of administration. The owner may, for one reason or another, deny public access to this facility at any time, thereby preventing the public from conducting its business. Secondly, the P.O.'s location in a basement does not allow for handicapped access to the facility via a ramp. Construction of a separate facility should be one of the council's top priorities.

Priority #3: Recreation Facilities and Programs

The strongest negative reaction garnered in the community survey concerned the lack of recreational facilities in Tyonek. Renovation of existing park lands and reinstitution of a variety of recreational programs would meet all of the concerns expressed by residents in the survey and, at the same time, be much less capital intensive than dedicating entirely new parklands.

Priority #4: Additional Office Space in the Community Center

This is a last priority because excess space in the meeting hall portion of the community center can be utilized as office space until such time as funds are available for new construction.

The community of Tyonek is fortunate in that its community facility needs, for the most part, have, to date, been met. The
priorities listed above will complete the comparatively comprehensive list of facilities and services available to the residents of Tyonek.
CHAPTER 4
TYONEK COMMUNITY NEEDS ASSESSMENT

INTRODUCTION

The energy crisis that has surfaced in the past decade and current market conditions for coal, oil and gas sales make large scale resource development in the Tyonek/Beluga area inevitable. It is important that a careful assessment of the needs facing the village of Tyonek in the face of proposed resource development be conducted so that the community might be better prepared to (1) benefit from the pending economic development, and (2) avoid as many of the negative impacts as possible. It is critical that Tyonek adopt a comprehensive approach to impact planning and control now.

An important step in this comprehensive planning approach is to conduct a community needs assessment. We have been able to identify the community needs because of our general knowledge of the village after:

- developing the Tyonek Community Profile;
- conducting the Tyonek Community Attitudinal Survey; and
- preparing and presenting the recent community education program on resource development in the Tyonek/Beluga area.

Other community needs were identified in the preceding Community Infrastructure Report. Other needs surfaced as a result of input from community leaders throughout the course of this project. Finally, discussions with potential resource developers regarding their plans in the area offered some important data with respect to regional needs.

After these needs have been identified it becomes important to develop strategies whereby these needs might be met. In addition to the specific village strategies cited in the following charts, it will be important that the village IRA Council lobby Tyonek Native Corporation and Cook Inlet Regional Corporation to carry out the desires of the residents as expressed in the attitudinal survey.

In addition to identifying both village and regional needs and strategies to meet those needs, we have provided estimated costs for each project and references for potential sources of both technical assistance and funding.
<table>
<thead>
<tr>
<th>NEED</th>
<th>STRATEGY</th>
<th>TECHNICAL ASSISTANCE</th>
<th>COST</th>
<th>POTENTIAL FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL EMPLOYMENT OPPORTUNITIES FOR ALL INTERESTED VILLAGE RESIDENTS AND JOB SCHEDULES THAT ARE COMPATIBLE WITH SUSTAINABLE LIFESTYLE</td>
<td>1) CONTRACT WITH DEVELOPERS AND STATE OF ALASKA TO REQUIRE LOCAL HIRE PREFERENCE</td>
<td>MIKE SYZMANSKI, TRIBAL EMPLOYMENT RIGHTS DIVISION, COOK INLET NATIVE CORPORATION</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) SET UP LOCAL MANPOWER POOL WITH TAG TEAM CONCEPT, FOR EXAMPLE 50 PERSONS WITH INTERCHANGEABLE SKILLS TO FILL 15 FULL-TIME POSITIONS BY TRADING OFF- AND ON</td>
<td>RESOURCE DEVELOPERS</td>
<td>$75,000/yr</td>
<td>TYONEK NATIVE CORPORATION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CARL ELERBE, EXEC. DIR, TYONEK NATIVE, CORP. 945 EAST 5TH AVE. ANCHORAGE 99501 274-4213</td>
<td></td>
<td>ALASKA PRIVATE INDUSTRY COUNCIL</td>
</tr>
<tr>
<td></td>
<td>3) SPRUCE SAPLING REVEGETATION PROGRAM THAT WOULD ALLOW TYONEK RESIDENTS LARGE DEGREE OF BOTH SEASONAL AND DAILY FLEXIBILITY</td>
<td>DR. ROBERT SANDERS, DIAMOND SHAMROCK CORP. 450 W. TUDOR RD. ANCHORAGE 99502 277-3983</td>
<td>-</td>
<td>DIAMOND SHAMROCK/CHITINA COAL joint venture</td>
</tr>
<tr>
<td>VOCATIONAL TRAINING PROGRAMS TO PREPARE TYONEK RESIDENTS FOR JOBS IN THE COAL, OIL AND GAS, AND HYDROPOWER INDUSTRIES</td>
<td>CONTRACT WITH DEVELOPERS TO TRADE PROVISION OF VOCATIONAL TRAINING FOR RESIDENTS IN PARTIAL EXCHANGE FOR USE OF RIGHTS-OF-WAYS, DEEP WATER PORTS, AIR STRIPS, ETC.</td>
<td>MIKE SYZMANSKI, TRIBAL EMPLOYMENT RIGHTS DIVISION, C.I.N.A. 670 W. FIREWHEEL ANCHORAGE 99503 265-1270</td>
<td>-</td>
<td>PRIVATE RESOURCE DEVELOPERS</td>
</tr>
<tr>
<td></td>
<td>WORK WITH DEPT. OF FISH &amp; GAME ON &quot;TYONEK COMPREHENSIVE RESOURCE USE STUDY TO IDENTIFY KINDS OF RESOURCES RESIDENTS USE AREAS THEY USE NUTRITIONAL VALUE OF RESOURCES USED SOCIOCULTURAL VALUE &quot; EXCHANGE/BARTER PATTERNS OF RESOURCES IMPACT OF FISH &amp; GAME SUBSISTENCE ON LOCAL SUBSISTENCE POPULATIONS - ROAD SYSTEMS - IMPORTED WORKERS HUNTING</td>
<td>RON STANIER, JAMES FALL, DEPT. OF FISH &amp; GAME SUBSISTENCE DIV. 933 RASPBERRY RD. ANCHORAGE 99502 344-0541</td>
<td>ALREADY FUNDED</td>
<td>DEPARTMENT OF FISH AND GAME, STATE OF ALASKA</td>
</tr>
<tr>
<td>NEED</td>
<td>STRATEGY</td>
<td>TECHNICAL ASSISTANCE</td>
<td>COST</td>
<td>POTENTIAL FUNDING SOURCES</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>----------------------</td>
<td>------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>ON-GOING VILLAGE INFORMATION/EDUCATIONAL PROGRAM ON RESOURCE DEVELOPMENT PROPOSALS IN THE AREA</td>
<td>DEVELOP OPEN INFORMATION NETWORK WITH POTENTIAL DEVELOPERS TO KEEP ABSTRACT OF CURRENT PLANS &amp; NEW DEVELOPMENTS. CONTINUING ITEM ON AGENDA AT IRA COUNCIL MEETINGS. RESOURCE DEVELOPMENT BULLETIN IN LOCAL NEWSLETTER. WHEN NEW INFORMATION POSSIBLY AFFECTING RESIDENTS LIVES IS GATHERED, HOLD PUBLIC MEETINGS TO INFORM RESIDENTS SO THAT THEY CAN PARTICIPATE KNOWLEDGABLY IN THE DECISION-MAKING PROCESS PLAN TO TAKE ADVANTAGE OF EMPLOYMENT OPPORTUNITIES</td>
<td>SAM BEST, PLANNING DIRECTOR, KENAI PENINSULA BOROUGH, P.O. BOX 850, Soldotna, 99669 262-4441</td>
<td>$15,000.00 PER YEAR</td>
<td>COASTAL ENERGY IMPACT PROGRAM, DEPARTMENT OF COMMUNITY &amp; REGIONAL AFFAIRS</td>
</tr>
<tr>
<td>GOVERNMENTAL ORGANIZATION STUDY</td>
<td>CONDUCT A GOVERNMENTAL ORGANIZATION STUDY TO DETERMINE WHICH FORM OF LOCAL ORGANIZATION WILL ENABLE TYONEK RESIDENTS TO MANAGE &amp; HAVE LOCAL CONTROL OVER DEVELOPMENTS AFFECTING THEIR LIVES, E.G. RESOURCE DEVELOPMENT. RETAIN IRA. GOVERNMENT? INCORPORATE AS CITY? BECOME A SERVICE AREA?</td>
<td>PAT POLAND, P.O. BOX 225, Cordova, 99574 B ANCHORAGE 99501 264-2201</td>
<td>$10,000.00</td>
<td>RURAL DEVELOPMENT ASSISTANCE FUNDS</td>
</tr>
<tr>
<td>RESOLVE 14(c)(3) RECONVEYANCE SO THAT VILLAGE CORPORATION HAS CLEAR TITLE TO LAND</td>
<td>WORK WITH TYONEK NATIVE CORPORATION TO ASSIST IN RESOLUTION OF 14(c)(3) RECONVEYANCES SO THAT RESIDENTS WHO ARE SHAREHOLDERS MAY BENEFIT FROM LAND LEASES/SALES TO RESOURCE DEVELOPERS</td>
<td>LARRY KIMBALL, LOCAL WRITES, P.O. BOX 225, Cordova, 99574 B ANCHORAGE 99501 264-2206</td>
<td>$0</td>
<td>ANCSA TECHNICAL ASSISTANCE PROGRAM, DEPT. OF COMMUNITY &amp; REGIONAL AFFAIRS</td>
</tr>
<tr>
<td>ALCOHOL/DRUG ABUSE TREATMENT, EDUCATION &amp; PREVENTION PROGRAMS/CENTER</td>
<td>OUTLINE NEEDS CITING COMMUNITY SURVEY RESPONSE &amp; IMPACT STUDIES SHOWING HIGHER INCIDENCE OF ALCOHOL &amp; DRUG ABUSE WHEN LARGE SCALE RESOURCE DEVELOPMENT PROJECTS ARE INTRODUCED NEAR VILLAGE SETTING. PETITION FOR FUNDS FOR TREATMENT &amp; PREVENTION PROGRAMS &amp; CENTER.</td>
<td>JIM McMICHAEL, OFFICE OF ALCOHOLISM &amp; DRUG ABUSE, AK DEPT. OF HEALTH &amp; SOC. SERVICES, 233 DENALI, PM 222, ANCHORAGE 99501 276-0177</td>
<td>$50,000 - $65,000 PER YEAR</td>
<td>OFFICE OF ALCOHOLISM &amp; DRUG ABUSE, AK DEPT. OF HEALTH &amp; SOC. SERVICES</td>
</tr>
<tr>
<td>NEED</td>
<td>STRATEGY</td>
<td>TECHNICAL ASSISTANCE</td>
<td>COST</td>
<td>POTENTIAL FUNDING SOURCE</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>COMMUNITY FACILITY &amp; SERVICE NEEDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FENCE SOLID WASTE DISPOSAL SITE</td>
<td>HIRE VILLAGE RESIDENTS TO CONSTRUCT FENCE AROUND DUMP (MATERIALS ALREADY DELIVERED BY KENAI BOROUGH)</td>
<td>KENAI PENINSULA BOROUGH</td>
<td>ALREADY FUNDED</td>
<td>KENAI PENINSULA BOROUGH</td>
</tr>
<tr>
<td>CONSTRUCT NEW POST OFFICE</td>
<td>PETITION FOR FUNDS FOR NEW GENERAL POST OFFICE FOR TYONEK</td>
<td></td>
<td></td>
<td>UNITED STATES POSTAL SERVICE</td>
</tr>
<tr>
<td>DEVELOP MORE RECREATION FACILITIES &amp; PROGRAMS</td>
<td>WORK WITH NORTH PENINSULA RECREATION SERVICE AREA TO DEVELOP PLANS FOR KROTO REC. AREA, TO PURCHASE REC. EQUIPMENT &amp; TO HIRE A NEW RECREATION DIRECTOR IN TYONEK</td>
<td>ROBERT OPINSKY M.S.C., MANAGER ANCHORAGE 99902 266-3202</td>
<td>$115,000.00</td>
<td>KENAI PENINSULA BOROUGH</td>
</tr>
<tr>
<td>ADDITIONAL OFFICE SPACE IN COMMUNITY CENTER</td>
<td>PETITION DEPARTMENT OF COMMUNITY &amp; REGIONAL AFFAIRS, DIV. OF LOCAL GOVT. ASSISTANCE FOR GRANT FOR NECESSARY ADDITIONAL OFFICE SPACE</td>
<td>MAGGIE ATKINS NO. PENINSULA REC. SERVICE AREA BOX 7166 NR B KENAI 99611 776-6000</td>
<td>$27,000.00</td>
<td>KENAI PENINSULA BOROUGH</td>
</tr>
<tr>
<td>TIMBER TO MEET LOCAL CONSTRUCTION &amp; FUEL NEEDS</td>
<td>LOBBY TYONEK NATIVE CORPORATION TO INCLUDE PROVISION IN TIMBER CONTRACTS WHEREBY LOCAL TIMBER NEEDS ARE MET BEFORE ANY CAN BE HARVESTED FOR COMMERCIAL PURPOSES.</td>
<td>SUE FERRY-PIPER DORA DIV. OF LOCAL GOVT. ASSISTANCE 225 CORDOA, Bldg. B ANCHORAGE 99501 264-2201</td>
<td>$23,000.00</td>
<td>RURAL DEVELOPMENT ASSISTANCE, FUNDS, DEPARTMENT OF COMMUNITY &amp; REGIONAL AFFAIRS</td>
</tr>
</tbody>
</table>

FUNCTION OF IRA COUNCIL: $0, N.A.
<table>
<thead>
<tr>
<th>NEED</th>
<th>STRATEGY</th>
<th>TECHNICAL ASSISTANCE</th>
<th>COST</th>
<th>POTENTIAL FUNDING SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDENTIFY RESOURCE EXTRACTION PLANS &amp; PROGRAMS</td>
<td>&quot;PROSPECTS FOR DEVELOPMENT IMPACTS IN THE TYONEK/BELLEUSA AREA.&quot; (CHAPTER 1 OF THIS REPORT) OUTLINES CURRENT PROPOSALS. IT WILL BE NECESSARY TO KEEP THIS INFORMATION UPDATED WITH PERIODIC RESEARCH EFFORTS.</td>
<td>SAM BEST PLANNING DIRECTOR KENAI BOROUGH P.O. BOX 650 SOLDOTNA 99664 262-4441</td>
<td>$10,000</td>
<td>COASTAL ENERGY IMPACT PROGRAM, LOCAL GOVERNMENT ASSISTANCE DIV., DEPT. OF COMMUNITY &amp; REGIONAL AFFAIRS</td>
</tr>
<tr>
<td>CONCEPTUAL PLANS OF LOCAL RESOURCE DEVELOPMENT ALTERNATIVES/IDENTIFY PREFERRED SCENARIO</td>
<td>DEVELOP CONCEPTUAL SCENARIOS OF PROPOSED DEVELOPMENT ALTERNATIVES TO DETERMINE WHICH IS MOST FEASIBLE; NEW TOWNSITE, INDUSTRIAL ENCLAVE, EXPANSION OF TYONEK. THEN CHOOSE ONE ALTERNATIVE.</td>
<td>SAM BEST KENAI BOROUGH LARRY KIMBALL COMMUNITY PLANNING DCRA 225 CORDOVA, 8TH FLOOR ANCHORAGE 99501 264-2206</td>
<td>$60,000</td>
<td>KENAI PENINSULA BOROUGH GENERAL FUNDS</td>
</tr>
<tr>
<td>REGIONAL DEVELOPMENT/INFRASTRUCTURE PLAN</td>
<td>DRAFT REGIONAL PLAN FOR DEVELOPMENT OF INFRASTRUCTURE ACCORDING TO SELECTED ALTERNATIVE, INCLUDING PLANS FOR: TRANSPORTATION LAND USE, THE ENVIRONMENT, UTILITIES, HOUSING, SERVICES, LABOR/EMPLOYMENT/TRAINING, ENERGY ORGANIZATION/GOVERNMENT.</td>
<td>SAM BEST PLANNING DIRECTOR KENAI PENINSULA BOROUGH</td>
<td>$200,000</td>
<td>ALASKA COASTAL MANAGEMENT PROGRAM, DIV. OF COMMUNITY PLANNING, DCRA</td>
</tr>
<tr>
<td>REGIONAL ENVIRONMENTAL IMPACT ANALYSIS</td>
<td>DEVELOP RESOURCE INVENTORIES OF REGION. I.D. POTENTIALLY THREATENING PROPOSED EXTRACTION METHODS. I.D. EXISTING LAWS/REGS REQUIRING DEVELOPERS TO TAKE PREVENTATIVE MEASURES TO MITIGATE NEGATIVE IMPACTS. ASSESS BALANCE OF NEGATIVE IMPACTS ON LOCAL RESOURCES</td>
<td>LISA CORKIN M/S 443 EIS REVIEW TEAM EPA 1200 6TH AVE. SEATTLE 98101</td>
<td></td>
<td>PROPOSAL: RESOURCE DEVELOPER'S STUDY. FEDERAL GOVERNMENT</td>
</tr>
<tr>
<td>REGIONAL ECONOMIC IMPACT ANALYSIS</td>
<td>IDENTIFY PROSPECTS FOR REGIONAL ECONOMIC GROWTH. ASSESS BOTH POSITIVE &amp; NEGATIVE IMPACTS OF PROSPECTIVE GROWTH ON REGION AS A WHOLE &amp; ON VILLAGE OF TYONEK, SPECIFICALLY.</td>
<td>SAM BEST PLANNING DIRECTOR KENAI PENINSULA BOROUGH</td>
<td>$50,000</td>
<td>COASTAL ENERGY IMPACT PROGRAM, LG&amp;D, DCRA</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>VOCATIONAL TRAINING PROGRAMS</td>
<td>OPEN TYONEK EMPLOYMENT OFFICE/ TAG-TEAM MANPOWER POOL</td>
<td>RESOLVE 14(c)(3) RECONCEIVANCES</td>
<td>ENVIRONMENTAL IMPACT ANALYSIS</td>
<td></td>
</tr>
<tr>
<td>CONTINUING VILLAGE INFORMATION/EDUCATION PROGRAM</td>
<td>CONCEPTUAL PLANS FOR REGIONAL DEVELOPMENT</td>
<td>REGIONAL DEVELOPMENT/ INFRASTRUCTURE PLAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVERNMENTAL ORGANIZATION STUDY</td>
<td>MAKE LOCAL HIRE CONTRACT AGREEMENT WITH DEVELOPERS</td>
<td>FISH &amp; GAME SUBSISTENCE STUDY (VILLAGE PARTICIPATION)</td>
<td>REGIONAL ECONOMIC IMPACT ANALYSIS</td>
<td></td>
</tr>
<tr>
<td>TNC TIMBER LOBBY</td>
<td>ALCOHOLISM/DRUG ABUSE TREATMENT &amp; PREVENTION PROGRAMS</td>
<td>CAPITAL IMPROVEMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FENCE DISPOSAL SITE</td>
<td>CONSTRUCT NEW POST OFFICE RECREATION FACILITIES &amp; PROGRAMS</td>
<td>ADDITIONAL OFFICE SPACE AT COMMUNITY CENTER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>