

A CURSORY
COMPARISON OF SOCIAL IMPACTS OF
ALTERNATIVE GAS PIPELINE ROUTES
FROM PRUDHOE BAY, ALASKA

Prepared for the
Bureau of Land Management
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Introduction

We conceive of a discussion of the social impacts of a gas pipeline to consist of three distinct tasks. First, comments are warranted for the draft environmental impact statement itself. Second, the statements of the State of Alaska and the Alaskan Arctic Gas Pipeline Company on the impact statement require comment. Third, an integrated perspective on social impacts needs to be developed.

In view of the inordinately short time provided for the preparation of the report, we have been forced to be highly selective in our choice of issues for discussion. We have focused only small efforts on the impact statement itself or on the comments of the State of Alaska and Arctic Gas. To do more would merely proliferate the number of disjointed remarks and serve only to further diffuse the issue of social impacts. Those comments we have chosen to make in these areas simply highlight what we judge to be some of the most critical social issues.

The major focus of this report concerns the third task of providing an integrated perspective on the social impacts of the alternative gas pipeline routes. Again, insufficient allocations of time and funds precluded critically needed field work and data generation. While we believe our contribution will significantly improve the quality of the assessment of social impacts to be found in the draft environmental impact statement, it is our judgement that it is absurd to presume that the massive social impacts that will be experienced in Alaska can be adequately treated with a few days of staff time.

The gas pipeline routes that are under serious consideration should be extensively studied. Such studies should include the measurement of community attitudes toward specific route alternatives and mitigating measures. Each directly affected community should be provided with detailed estimates of workforce and facility expansion, probable effects on existing business and living patterns. The condition and present use of the local infrastructure should be measured and comparisons made with project requirements. Above all, communities should be allowed and encouraged to plan for change before it happens. Only if communities can retain control will the social impacts of gas pipeline construction be of reasonable proportions.

The following persons, in addition to those at the Institute, have provided comments on the first draft of this report:

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While many useful comments were received and incorporated into the final draft of this report, any inaccuracies and errors remain the responsibility of the primary authors.

I. Comments on the Draft Environmental Impact Statement

The discussion of social impacts in the Alaska Natural Gas Transportation System Draft Environmental Impact Statement is sketchy and poorly integrated.

At one level, statewide present demographic conditions and projected employment levels are given (I:81, II:831, I:246) without ever linking them with a discussion of attendant social effects. For example, what are the specific manpower requirements for the project? How do these requirements match with the skills of resident Alaskan pipeline workers? What are the projected age distributions of the direct and induced population increases? What changes in social service demands can be expected on the basis of this information?

The statement then jumps to a few current statistics on the North Slope Borough (I:246) and a brief description of Kaktovik (II:475, 485, 531) while providing only a general indication of local direct employment (II:91). There is no discussion whatsoever of local induced employment and population increases. By ignoring induced effects, the statement avoids any consideration of impacts on community services (II:858).

Throughout the DEIS, two implied or expressed assumptions are stated:

Gradual acculturation has ended the willingness of most Natives to maintain a subsistence economy, but the lack of a fully developed cash economy has left them far below the defined level of poverty. (II:1149)

This project will help destroy the already deteriorating subsistence economy while establishing a cash economy. (II:1154)

These assumptions can be compared with the following statements from the DEIS:

1. that subsistence activities continue to play an important role (II:489)
2. permanent damage to Native subsistence hunting would represent an "irretrievable loss to the Natives" (II:1293)
3. that serious adverse impacts to subsistence will occur (II:873, 878)

4. that local persons are not likely to participate in employment opportunities, to quote: "As a result of the lack of a skilled local work force, past increases in regional work force levels have generally been attributable to immigration of skilled workers rather than to a significant expansion of local employment. Accordingly, one should not assume that local residents will be hired to fill jobs created locally." (II:485)
5. that permanent staff will be located at Prudhoe Bay (39) (II:63) and Anchorage (II:33)
6. that the operation and maintenance of the pipeline will "use" automatic, unattended equipment (II:113, 135)

It should be clear from the above statements that the residents of affected villages can expect a decrease in critical subsistence resources without a comparable increase in wage employment, even if such a tradeoff were deemed desirable (itself a highly questionable assumption). The purported transition to a cash economy or "balanced economy" is not a realistic expectation. Furthermore, the residents of small villages have the burdens of disrupted air service, increased supply costs (II:842) and increased social service demands (if Valdez is indeed to be taken as an example, II:1644, 1728).

The use of small villages for supply bases (as suggested for Kaktovik, II:855) would result in the destruction of village life unless the village itself could control the location of facilities and their relationship with the village. The exertion of such controls would be extremely difficult. Even the community of Yakutat, which has had considerably more experience with outside interests and competitive economies, is having to channel most of its resources into planning for OCS developments.

The statement appears to assume that subsistence activities merely serve a nutritional function. Subsistence hunting and fishing is also a way of life involving skill and training much as any other way of life.

Outside observers can better appreciate this point if they draw an analogy to their own situation. Suppose an engineer, business executive, or government official is not allowed to work according to his skills. He is forced to become a welfare case and does nothing for the lack of opportunities. The food and money he is given cannot replace the sense of self-worth, pride, and achievement associated with the way of life he cannot practice.

II. Concerning the Comments of State of Alaska

I:503 While we agree with the State of Alaska that the social costs created by the destruction of subsistence resources should be met by the applicant, we do not feel that paying public assistance costs will begin to mitigate the total costs to the village. Subsistence activities have social and cultural values beyond nutritional values.

II:839 Actual Native employment on the pipeline has been lower than 20 percent, perhaps employing as few as 500 Alaska Natives. A Doyon affiliated subcontractor purportedly has achieved the highest percentage of Native hire, only 11 percent.

II:1148-1150 We have discussed the fallacy of the creation of a balanced local economy in our introductory remarks and elsewhere in the report.

III. Concerning the Comments of the Alaskan Arctic Gas Company

- II:485 We agree with Arctic Gas that subsistence activities are critical to the people of Kaktovik but strongly disagree that economic activity is consistent with subsistence activities or that it will provide significant economic opportunities for local residents.
- II:829, 830, 851 The operation and maintenance work force for the AAGPC pipeline is unlikely to involve Kaktovik residents and thus should not be construed as a long-term economic opportunity. The "North Slope residents" that may be employed will probably come from Prudhoe Bay.
- II:839 If Arctic Gas intends to make special efforts to hire and train Natives, it should make a formal commitment to do so, and this should be reflected as a mitigating measure. However, the employment plans for Natives should reflect time requirements for subsistence activities and not be oriented toward full-time employment.
- II:842-843 Substantial dislocations of air service have occurred during the construction of the oil pipeline. Air carriers have substituted lighter planes for bush service which are unable to carry heavy freight loads.
- II:855 Is Arctic Gas going to build housing in Kaktovik which will be available for local residents? The demands of the incoming population for housing are likely to overwhelm construction potentials and inflate housing costs. In addition, we question whether actual local employment will be sufficient to permit investments in housing.

II:858 If Kaktovik is used as a staging area, it will be destroyed as a social unit. The scale of economic investments is totally beyond the ability of Kaktovik to absorb; existing economic and social structures will simply be replaced.

IV. Comparison of Social Impacts Resulting from Alternative Gas Pipeline Routes

This section, in general, concerns Chapter 8 of the DEIS as well as those sections dealing with the social impacts of the prime route in Chapters 2, 3, 4, and 5. Our discussion for each route can in general be fit into the appropriate DEIS section on social impacts.

Before we proceed with an analysis of the social impacts associated with each route, several general comments are in order. In analyzing the social effects of the alternative gas pipeline routes on Alaskan communities, it is crucial to take into account such factors as the type of community, the kind of relationship that the community will have to the pipeline, and short-term and long-run consequences for the community. Pipeline effects will be different in White highway communities as opposed to rural Native villages with a subsistence base, in communities serving as major supply points as opposed to communities serving only as a possible source of migrant manpower. For these reasons, the social effects of the alternative gas pipeline routes can best be discussed within the following categories:

- A. Native versus non-Native communities (note that except for the Eskimo communities along the Golovin route and Kaktovik and Anaktuvuk Pass, the Native communities are predominantly Athabascan)
- B. Communities that:
 - 1. Are directly affected by pipeline construction activities

- a. are physically on the pipeline route or on major supply corridors (mainly highways)
 - b. are major receiving points, staging areas, storage, and distribution points
 - c. whose subsistence resources will be affected
2. Are indirectly affected by pipeline construction activities, i.e., contribute manpower
- C. Short-term versus long-term effects
- D. Regional location
- 1. southern highway communities
 - 2. interior communities
 - 3. western Alaskan communities
- E. Communities
- 1. already affected by the oil pipeline
 - 2. as yet not significantly affected

The unique character of each Alaskan community defies generalization. Without extensive direct discussions with the regional and village corporations and community residents, it is impossible to confidently predict one of the most fundamental impacts, that of the degree to which predicted community changes match the desires of the people. We have tried to be sensitive to this and other issues and wish to reiterate that community input is necessary to assess the balance between the costs and benefits of projected impact. This report should serve as a basis for discussion rather than a definitive projection of social impacts.

With the above point in mind, each proposed gas pipeline route will be discussed. Several types of social impacts have been identified as the most critical; these include:

- A. The impact of pipeline incomes
 - 1. on the individual
 - 2. on the community where the individual resides
 - 3. on the family
- B. The impact of cost of living changes, particularly on the elderly and those not associated with pipeline construction
- C. The impact on the supply of private goods and services, particularly
 - 1. housing
 - 2. food
 - 3. delivery of freight (note: this also involves public services such as the postal service and subsidized air routes)
 - 4. personal transportation
- D. The impact on the supply of public goods and services, particularly
 - 1. utilities
 - 2. medical care
 - 3. schools
- E. The impact on social relationships, particularly
 - 1. within the family
 - 2. between new people and long-term residents
 - 3. between resident pipeline workers and their community
- F. The impact on the size of the community with all the attendant consequences on:

1. crowding, competition
 2. community character (e.g., rural-urban)
- G. The impact on the relative importance of subsistence, cash, and public assistance community inputs
- H. Environmental impacts affecting the ability to function in the community and enjoy its aesthetic qualities
- I. The impact of conflicting cultural norms and expectations and racial tension
1. resentment by non-Natives of preferential hiring practices
 2. attribution of incompetency to Natives who are working in a totally new situation

The proposed routes are grouped into three categories corresponding to our overall judgement of those resulting in the least disruptive, intermediate disruptive, and most disruptive effects. Our judgement is weighted by the following factors:

- A. Favoring routes which affect communities that have already responded to the changes wrought by the oil pipeline
- B. Favoring routes which affect White communities as opposed to Native (based on the desire to avoid conflicts with subsistence resources while not negating employment opportunities)
- C. Favoring routes which affect larger communities with developed infrastructures over smaller communities
- D. Favoring routes which affect fewer Native communities

The least socially disruptive routes are judged to be the Cook Inlet Route, the Fairbanks-Alaska Highway Route, the Fairbanks-Haines Route, and the Prime Route. Those routes which would be moderately disruptive are the

Offshore and Coastal Routes. The most disruptive routes are the Fairbanks-Pt. Gravina, Interior, Ft. Yukon, and Golovin Routes. We have not attempted to rank the routes within these three categories.

A. Least Disruptive Routes

1. Cook Inlet Route (not discussed in DEIS)

Brief Description. Follows trans-Alaska oil pipeline to Fairbanks and then parallels the railroad and Fairbanks-Anchorage highway, terminating on the west side of the Kenai Peninsula. Major construction camps above Fairbanks would be the same as for the oil pipeline; camp locations are not given for the route south of Fairbanks, but would occur roughly 50 miles apart and have 500-800 men in each camp. Major supply depots would probably be Fairbanks, Anchorage, and Prudhoe Bay.

Affected Communities:

Native communities indirectly affected: Not necessarily located near the pipeline, potentially including all Native communities but especially those with persons having experience with construction and those with good transportation links with hiring centers.

White manpower: Evansville/Bettles, Livengood, Manley Hot Springs, Fairbanks, Anchorage, rail communities

White supply depots: Fairbanks, Anchorage, Prudhoe, Seward

Native village employment on the oil pipeline has been inconsistent, ranging from 27 in Allakaket to none in Minto.¹ Effects have included:

¹Note that village employment figures are rough estimates only, based on questionnaires filled out by a village representative in the spring and summer of 1975.

- a. frustration at the necessity of going to Fairbanks to get a job, long waits, lack of communication, and social problems encountered in urban setting before and after employment
- b. conflict between allocations of time for adequate subsistence activities and functioning as a "reliable" full-time employee
- c. village leaders are among those most likely to get jobs and leave the village; village organization and village council operation suffer
- d. some villages have experienced post-employment partying, drinking, and fighting which has affected village stability, including the operation of schools
- e. social disruptions appear to be strongest in villages already having problems
- f. women have to take more responsibility during the absence of men, including heavy work
- g. employment is viewed as a short-term opportunity and not a means for transition to a stable cash economy
- h. a low percentage of pipeline earnings reach communities

Small White communities have contributed to employment (Manley Hot Springs 5, Livengood 25, Evansville/Bettles 2), but short and long-term effects appear to be comparatively limited. Increased participation in pipeline activities tends to result in shortages of local manpower. A loss of subsistence resources has been noted at Livengood.

Fairbanks and Anchorage would receive substantial infusions of pipeline employment earnings while suffering from a plethora of short-term social dislocations and long-term social changes. As most of these effects have already been set in motion by the oil pipeline construction and would occur to some extent whichever gas route is chosen, we will not treat Alaska's two largest cities further, concentrating instead on the state's smaller communities.

The railway communities can be expected to be affected in similar ways to communities along trucking routes, such as Tok and Delta, although the proximity of the gas pipeline itself may pose an additional burden on the local community environment. The experience of Tok and Delta to date includes:

- a. increases in trucking accidents and a resultant burden on local first aid efforts
- b. many job seekers pass through, often not paying motel bills and stealing supplies
- c. profits to businesses have nevertheless increased
- d. tourism has been adversely affected by trucks and lack of available accommodations
- e. local jobs are going vacant due to pipeline employment
- f. crime has not increased perceptively, but data from rural areas is severely limited. Nevertheless, local fears of crime have increased (e.g., not picking up hitchhikers)
- g. truckers do not provide much business
- h. many overloaded trucks travel at night and disrupt sleep of highway residents

- i. many in community "wish pipeline never happened--starting to be like everywhere else with the hustle and bustle"
- j. housing supply, especially rentals, is completely filled
- k. many holding land for speculation for gas line
- l. many families have more money, plan to build homes, and are depending less on food stamps
- m. in some cases, community attitudes are united in complaints against pipeline, creating common bond; in others (e.g., Delta Junction) pipeline construction divides the community into pro- and anti-development factions.
- n. have not been able to get better supply of groceries, trucking companies will not stop on the way to Anchorage, Fairbanks
- o. local bars and restaurants are taken over by pipeliners and local residents stay away

The cumulative impact of OCS development, the gas pipeline, and the capital move on the Anchorage area would be tremendous. Anchorage, on the other hand, is already urban-oriented and has a well-developed infrastructure. The potential use of gas locally must also be considered. Seward would experience increased volumes of supplies passing through the city without major anticipated social dislocation.

In summary, the Cook-Inlet Route would repeat or prolong the effects of oil pipeline construction north of Fairbanks and in Anchorage while creating impacts similar to those experienced in Tok and Delta in the railway communities.

2. Fairbanks-Alaska Highway Route (II:2369)

Brief Description. Follows trans-Alaska oil pipeline to Fairbanks and then parallels Alaska highway, with Big Delta and Tok serving as major supply depots with 500-800 men in each camp.

Affected Communities:

Native communities indirectly affected: See discussion for Cook-Inlet Route.

White manpower: Same as for Cook Inlet Route with increased participation of Delta, Tok, and Glennallen.

White supply depots: Big Delta, Tok, Skagway, Seward

The Fairbanks-Alaska Highway Route would lessen the impact on Anchorage and largely eliminate the effects on the railway communities. The effects on Seward would be the same or less while Skagway would experience increased volume of goods flowing through the community. Unless extensive warehousing is involved, the net effects would be comparatively limited. Big Delta and Tok Junction have already experienced increases in truck traffic with attendant negative side effects. The location of major camps there would not have the severe impact associated with smaller Native or White communities that are proposed supply depots for other routes.

Those effects that would occur would be similar to the effects experienced in the southern highway communities of Glennallen and Copper Center:

- a. non-camp population rose, particularly due to administrative employees who brought families
- b. prices on goods went down and availability and quality went up
- c. housing availability went down, making it difficult for school teachers and others to find a place to live

- d. non-violent crimes (e.g., traffic tickets) increased

The effects on Native communities can be expected to parallel the current experience of other southern highway Native communities, such as Gakona, Gulkana, Copper Center, and Chistochina:

- a. Native incomes in large part did not increase and Native hire success was limited
- b. many of the Native elderly were left without means of support as young with pipeline employment apparently did not share incomes or have time to help elderly
- c. half or more of those interviewed in an area study² did not feel that local communities benefitted from pipeline activities, particularly with regard to schools and state services
- d. almost half would like to see more construction, since damage had already been done and maybe job opportunities would improve
- e. at least a temporary loss of game has been noted, increasing the difficulty of subsistence activities
- f. It appears that the southern highway communities perceive pipeline construction as another means of temporary employment and do not perceive long-term economic opportunities. Thus, the expectation is for continued seasonal employment and subsistence activities. This may or may not be possible depending on the reappearance of game.

²Smelcer (1975).

In summary, the Fairbanks-Alaska Highway Route would induce moderate additional impact on Tok and Delta Junction without creating any major impacts on communities not already affected by the oil pipeline.

3. Prime Route (#848, 1148, 1238, 1293)

Brief Description. Follows an easterly route some 20 miles in from the coast through the Arctic National Wildlife Range into Canada. Major port developments at Camden Bay and Demarcation Bay, potential supply depot at Kaktovik, 4 construction sites to become future compressor station sites.

Affected Communities:

Native supply depot: Kaktovik

Native communities indirectly affected: See discussion for Cook-

Inlet Route.

The physical proximity of the pipeline to Kaktovik (20 miles) would certainly result in major social impacts. Whether that social impact is positive or negative over the short and long terms may only be able to be answered by the people of Kaktovik after their experience. The use of Kaktovik as a supply depot could be totally destructive.

Assuming that the major workforce will be located in self-contained camps and that such camps will have no long-term, labor-intensive function, the situation will differ from that presently occurring in Valdez, irregardless of the major cultural differences that exist between the two communities. Valdez has a future of long-term economic opportunities associated with its role as the terminal site of the oil pipeline and is attracting permanent residents and substantial capital investments. Kaktovik does not.

Kaktovik, given its small population, will be dwarfed by a camp of 500-800 workers who will primarily be adult males. Inevitably, it will experience spillovers from camp life which may generate a sense of fear and hostility in the community. A few residents may gain from relatively stable employment for 1-2 years and increased supplies while losing from inflated prices, housing shortages, and public service demands.

Subsistence resources are likely to be dispersed. Following a year or more of high cash flows, employment opportunities are likely to disappear with no adequate substitute. Thus, the villages will experience drastic post-construction impacts.

The construction of the pipeline will not create long-term economic employment in Kaktovik. To use the terminology of the DEIS (II:1149) a "balanced local economy" will not result from the construction of the pipeline. Depending on the effects on subsistence resources, the village may be forced to rely on public assistance.

The Prime Route would probably increase the personal incomes of Kaktovik residents in the short term, perhaps permitting new housing to be built and new community facilities to be constructed. If, however, the pipeline is seen as the means to establish a long-term cash economy, it is our judgement that Kaktovik residents will be frustrated and the social stability of the village is likely to be severely disrupted. Kaktovik residents should be advised of the long-term consequences of their current preferences so that choices are not made that will later be a source of frustration.

The overall social effects of the Prime Route center on the impact on Kaktovik and the lack of positive or negative impacts on the rest of the state. The fate of 150 people cannot be reasonably weighed against state-wide and national effects. The effects on the Arctic National Wildlife Range and related public perceptions further complicate the issue. In spite of the level of controversy and the overwhelming potential effects on Kaktovik, we do not judge the social impacts of the Prime Route to be as disruptive as the offshore, coastal, interior, Ft. Yukon, or Golovin routes. However, Kaktovik should be used as a labor supply not a supply base. The latter would result in the disappearance of the village as it is presently conceived by Kaktovik residents.

4. Fairbanks-Haines Route (not discussed in DEIS)

Brief Description. Similar to Fairbanks-Alaska Highway Route with addition of Haines as terminus of pipeline.

The social effects would be the same as the Fairbanks-Alaska Highway Route with the exception of Haines. Haines has a more developed infrastructure than Cordova and thus would have fewer economic and social dislocations as those discussed below for that route.

B. Moderately Disruptive Routes

1, 2. Offshore and Coastal Routes (#1430, 1486)

Brief Description. Parallels the Prime Route off the coast; parallels coast.

The social effects of the Offshore Route are likely to be much more destructive to Kaktovik, particularly with regard to the marine environment (the primary subsistence resource) and physical environmental change. The onshore, coastal route is likely to pass near enough to Kaktovik to have

drastic consequences on the ability of residents to carry on normal daily activities.

C. Most Disruptive Routes

1. Fairbanks-Pt. Gravina Route (not discussed in DEIS)

Brief Description. Follows oil pipeline route to Copper River Valley, there diverging to Cordova. Major supply centers and construction camps are likely to be the same as for the oil pipeline with the exception of Valdez.

The effects on Native and White communities supplying manpower have been discussed in the sections on the Cook Inlet and Fairbanks-Alaska Highway Routes. The major additional impact of this route would be on Cordova. The Valdez experience has included:

- a. substantial financial gains, with a median income of \$35,000
- b. substantial capital investments
- c. replacement of many long-term local businessmen by outside interests
- d. severe housing shortages
- e. high prices, sporadic supplies
- f. take over of entertainment facilities by pipeliners
- g. loss of community social workers and many old-time residents
- h. increased population that is jeopardizing small-town activities such as fairs
- i. total loss of fishing industry: all fishermen have become pipeline workers

j. increased family activities replacing individual entertainment

k. prostitution

Cordova would experience more severe impacts than Valdez since it has not had a highway connection and, consequently, has remained more economically and socially isolated. The fishing industry, however, is not stable and the substitution of a new economic base may be advantageous to the community. It is questionable how many long-time residents would eventually remain in the community to participate in the economic opportunities in view of the drastic changes associated with the transition from a rural fishing community to a tanker terminal complete with LNG plant.

The additional impact of OCS on Cordova must also be considered. A variety of onshore activities including supply ports, oil storage facilities, pipeline landfalls, employee housing, and potentially, platform construction sites may involve Cordova directly or indirectly. Whether gas pipeline activities would be a catalyst for OCS activities in the area or whether one type of development would preclude the other must be answered before a detailed assessment of social impacts can be made.

The attitudes of the residents of the community of Cordova must be considered before an overall assessment of social impacts is made. Information should be provided that relates to all the attendant consequences of specific development alternatives. The attitudes of one group (e.g., the Chamber of Commerce) should not be assumed to reflect those of all community residents. Given the unique nature of Cordova as an isolated White fishing village, we judge the social impacts for the Fairbanks-Pt. Gravina route to be

of major disruptive character, pending an adequate assessment of community attitudes.

2. Interior Route (#1742)

Brief Description: Southeast to Brooks Range, south, then generally east to Canada near the community of Old Crow. Winter road would be constructed from Circle to the Coleen River Valley, possibly via Fort Yukon and Chalkytsik.

Communities affected:

Supply depots: Circle

Native communities on proposed road: Ft. Yukon, Chalkytsik

White communities on highway access: Central

The major social impacts of the Interior Route would stem from two sources. The first is the use of a winter road from Circle to the Coleen River valley, creating an access to the Interior communities of Ft. Yukon and Chalkytsik. The second, but related, source of impact would be the use of a small community of Whites and Natives (Circle).

Circle would face similar pressures to those discussed for Kaktovik. In addition, as it is located on a public road, job seekers may use the community, although the experience of Valdez suggests that temporary residents find a total lack of available living quarters and are forced to leave.

Central's population of under 50 people would be overwhelmed by the truck traffic required to supply either the Interior or Ft. Yukon proposed routes. It would probably serve as a gas stop and rest facility but in a manner quite different than today. Over 70 percent of Central's population is over 50 and almost 50 percent is over 60. Many of the elderly are unlikely to participate in the higher cash flows yet be subject to inflated

prices, dust, and crowding. As a traditional retirement community, Central's people would be ill-equipped and probably unwilling to sacrifice their chosen environmental surroundings for those characteristic of places they have left to come to Central. Consequently, the Ft. Yukon or Interior gas routes would result in high levels of dissatisfaction and hardship or even outmigration of the Central population.

While Circle historically is a gold rush community, it is unlikely that its residents would desire the re-establishment of a highly active cash economy. The present mix of Native and non-Native residents suggests that the town is oriented to a low key rural lifestyle. An assessment of specific social impacts would require on-site research.

If the temporary road access to the Interior Route remains open for public use after the construction phase, however, Circle, Ft. Yukon, and Chalkytsik could find themselves under entirely altered circumstances which might remove their ability to plan their own future.

The combined short-term effects on Circle and Central and the long-run potential effects on the entire region make the Interior Route appear highly disruptive.

3. Ft. Yukon Route (II:2043)

Brief Description. South-southwest across Brooks Range, possibly by Venetie through Ft. Yukon, Circle, Eagle, and into Canada. Major supply depots at Circle and Eagle.

Communities affected:

Supply depots: Circle, Eagle

Native communities indirectly affected: see discussion for Cook-

Inlet Route

The Ft. Yukon Route would not include the construction of a temporary road up the Coleen River valley, thus the impact on Chalkytsik would be less than for the Interior Route. Ft. Yukon and Circle would have the additional environmental effects of a pipeline through, or very near, their communities. The additional small communities of Eagle and Eagle Village would be severely impacted in their roles as a major supply depot. Eagle Village's experience would parallel that given for Circle

The effects on the White community of Eagle would be similar to that of Circle and Eagle Village with respect to the overwhelming impact of the large population increase and dispersion of subsistence resources. White residents are perhaps more likely to become employed and gain revenues from businesses located just outside the camp. Many of its residents specifically chose to come to Eagle to escape urban living and, furthermore, are at or near retirement age. The use of Eagle as a supply depot would be directly opposite the desires of most of its residents.

Small entrepreneurial initiatives which may proliferate in each of the communities are likely to face economic difficulties following the construction phase. Tourism is unlikely to provide sufficient demands for such facilities with the result that prolonged economic opportunities and attendant social stability is questionable.

In summary, the added impact to Eagle, Eagle Village, Circle, and Ft. Yukon would outweigh the decreased impact to Chalkytsik, making the Ft. Yukon Route at least as disruptive as the Interior Route.

4. Golovin Route (not discussed in DEIS)

Brief Description. South to Bettles then generally west to southeastern edge of Seward Peninsula. No construction camp sites given.

Without any information about supply depots or the exact terminal location, it is impossible to discuss the social impacts of the Golovin Route in detail. However, the villages located on the Seward Peninsula are generally tightly knit and could be expected to participate in the employment opportunities or perhaps present a united opposition to the placement of the pipeline in the region. The cumulative impact of OCS developments and a terminal facility or marine resources could change a well-established regional lifestyle.

The pipeline route itself would create a major east-west access corridor that might be a catalyst for the construction of the proposed road to Nome. Should that occur, the character of the region could be changed drastically. We strongly suggest that any serious consideration of the Golovin Route include extensive community contact in order to determine the match between community and pipeline company expectation. Given our lack of such information, we have chosen to be conservative and place the Golovin Route in the most disruptive category.

V. Summary

The discussion of social impacts presented in the previous section has focussed on the community level. Such a perspective is necessary to distinguish between the alternative proposed gas pipeline routes. Whichever route becomes a reality, however, social impacts will be felt in a wide range of Alaskan communities. Employment opportunities and the redistribution of state revenues from gas production and transportation are two forces operating to diffuse impacts.

We have not dealt extensively with the social impact of changes in subsistence resource availability. While many communities have noted decreases in the availability of game, it is not clear whether natural migration changes, over-hunting, mismanagement, lack of time spent hunting, or actual effects of the pipeline are primary limiting factors. We would like to see the data upon which statements are made that subsistence resources will be adversely affected over the long term by temporary construction activities. It is likely, however, that the development incentives provided by the pipeline would cause major disruptions to subsistence over the long term. Recreation hunting access, for example, has resulted in competition for subsistence resources in the Copper River region.

Also of major concern are changes in the social desirability of subsistence activities, particularly among young people. Evidence of numerous changing attitudes are present in the remarks of many village elders. Village activities which depend on volunteer or low salary labor are rejected by teenagers who are well aware of the high paying jobs available. The construction of a gas line will aggravate the conflict between self-interest and village welfare.

Pipeline routes through new regions are more likely to affect subsistence resources and will become a salient force against traditional lifestyles in an expanded number of communities. While some communities may currently desire wage incomes, it is our observation that such attitudes may shift back and forth over time. The process of cultural change cannot be documented by a unidimensional change in attitudes; rather, it is an interplay between adaptation and consolidation. The use of small villages as major supply depots would prevent the community from maintaining elements of its traditional lifestyle.

The optimum employment opportunity for a village resident with strong family ties and who depends on subsistence opportunities is one which is near home and is temporary. Adverse social impacts increase when employment is only available far away from home or is so near home that it is related to a decrease in subsistence opportunities and provides the only source of income. Obviously, no route can take such an alignment with respect to every Alaskan village. We believe that the routes we have labelled the least disruptive (Cook Inlet, Fairbanks-Alaska Highway, Prime, and Fairbanks-Haines Routes) reflect better alignments in this regard.

Incoming population groups may not share the same cultural background of long-term residents, White or Native. Should the original village population become the minority, it is possible that new interest and activities will supplant old ones. In some cases this process may threaten efforts to preserve Native cultures. The unique lifestyles and perspectives held in small Alaskan communities represent a reservoir of diversity that massive population increases could overwhelm.

The social impacts of a gas pipeline cannot be predicted from data provided by the industry. We have already stated that community attitudes, values, and expectations are a critical required input. The presence or absence of a number of mitigating measures is also a prerequisite for assessment:

- A. Will the builder provide funds for short-term dislocations that result from direct and induced activities?
- B. Will the builder be required to consult with local communities with regard to local hire, the types of training that would become a long-term regional resource, and the local time and space requirements for all phases of living?
- C. Will the community have continued access to the builder in order that unanticipated impacts can be dealt with?
- D. Will the builder be liable for long-term changes of a drastic nature such as the loss of subsistence resources?
- E. Will the builder be held to previous impact projections such as for population increases?

These and other issues should be formally addressed in the environmental impact statement. We submit that the relative social impacts of the alternative gas pipeline routes cannot be adequately estimated without a knowledge of community attitudes and mitigating measures.

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