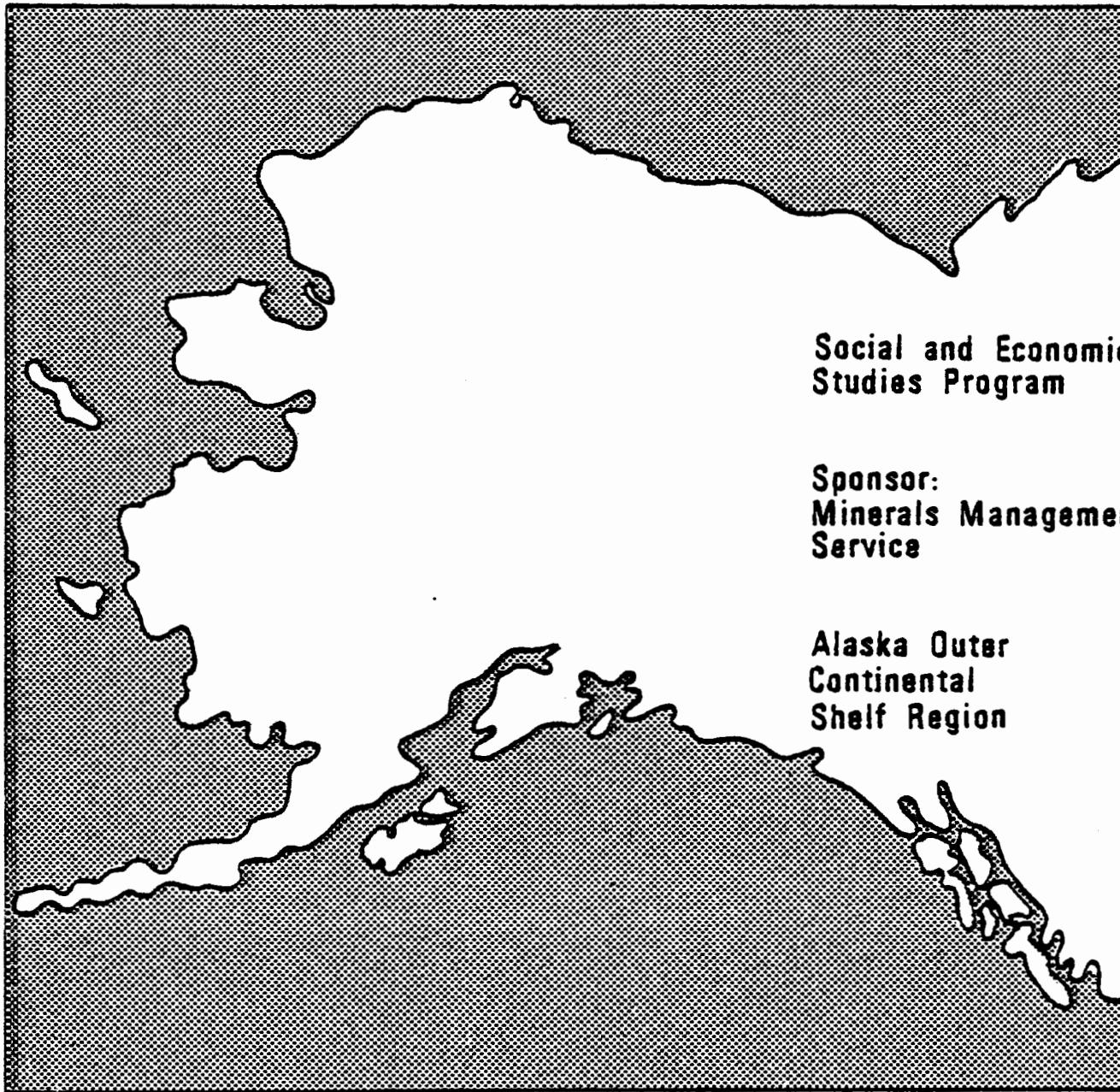


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COLD BAY:

Ethnographic Study and Impact Analysis

Technical Report #93

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ALASKA OCS SOCIAL AND ECONOMIC STUDIES PROGRAM

FINAL TECHNICAL REPORT

COLD BAY: ETHNOGRAPHIC STUDY AND IMPACT ANALYSIS

PREPARED FOR

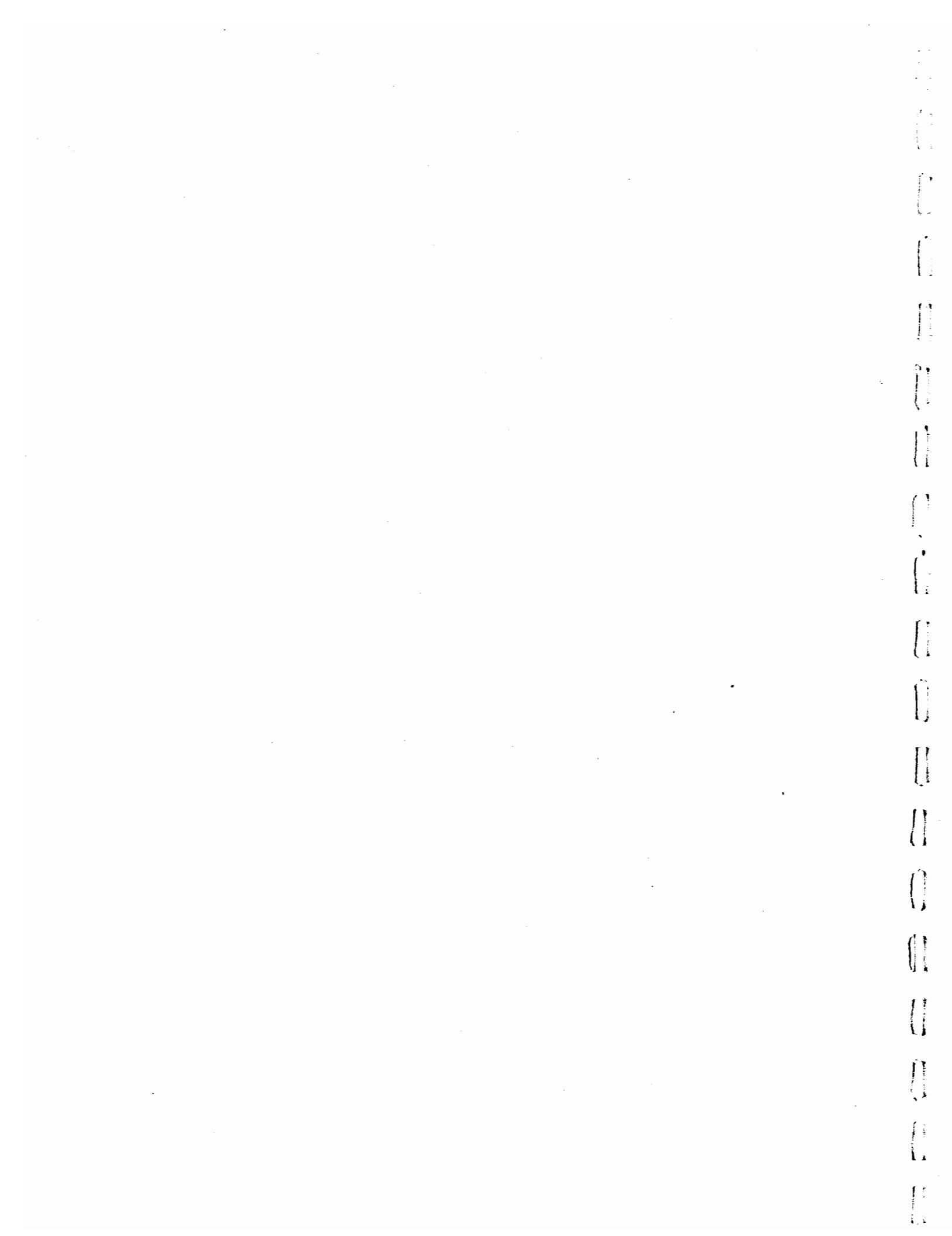
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BY:

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Alaska OCS Socioeconomic Studies Program

Cold Bay: Ethnographic Study and Impact Analysis

This report was prepared with the assistance of Karen Gibson, the Contracting Officer's Representative, and George Allen, the Project Inspector. Dr. Bruce Harris conducted the two months of field research on which this report is based, and with Dr. John Petterson and Dr. Lawrence Palinkas, prepared this report.

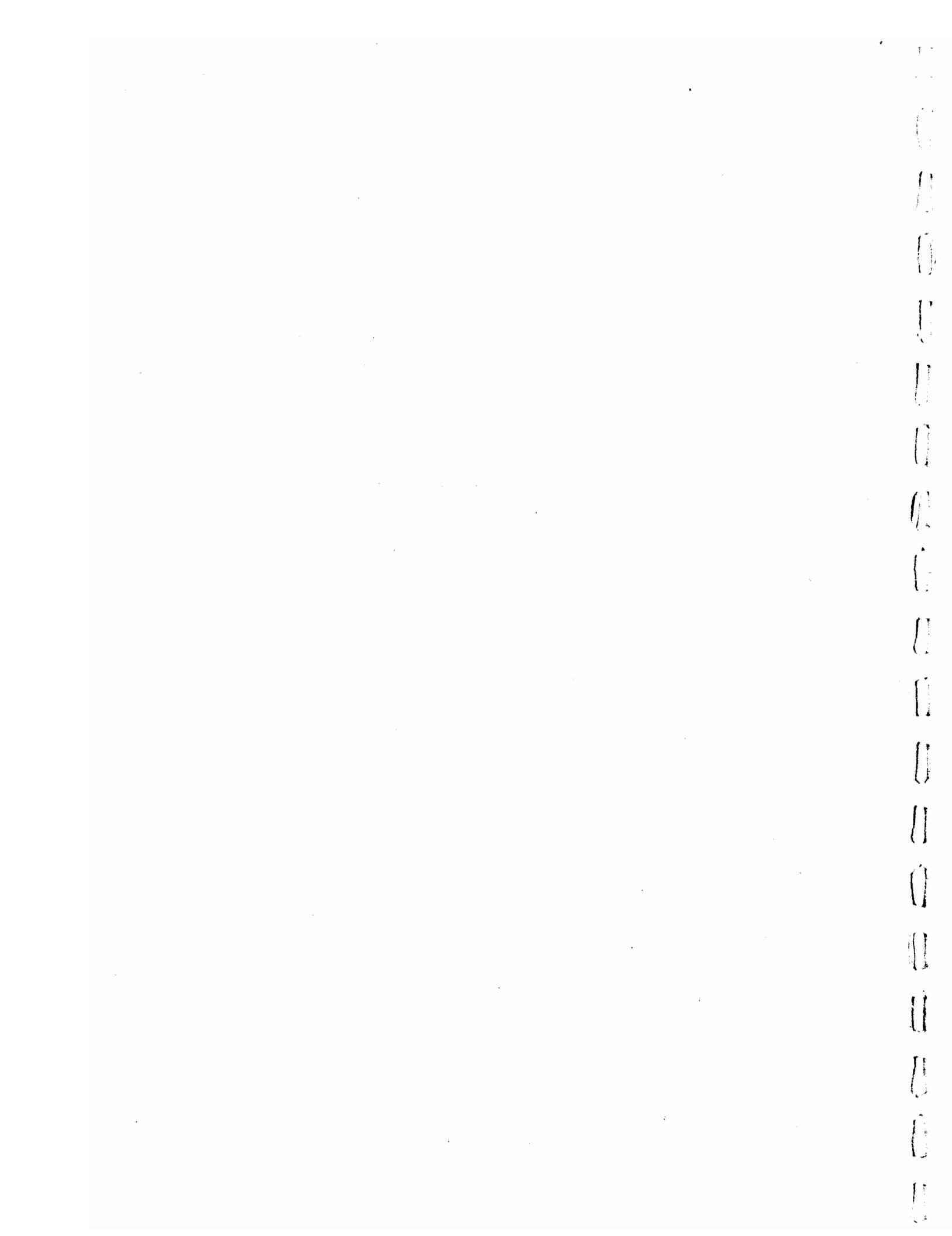


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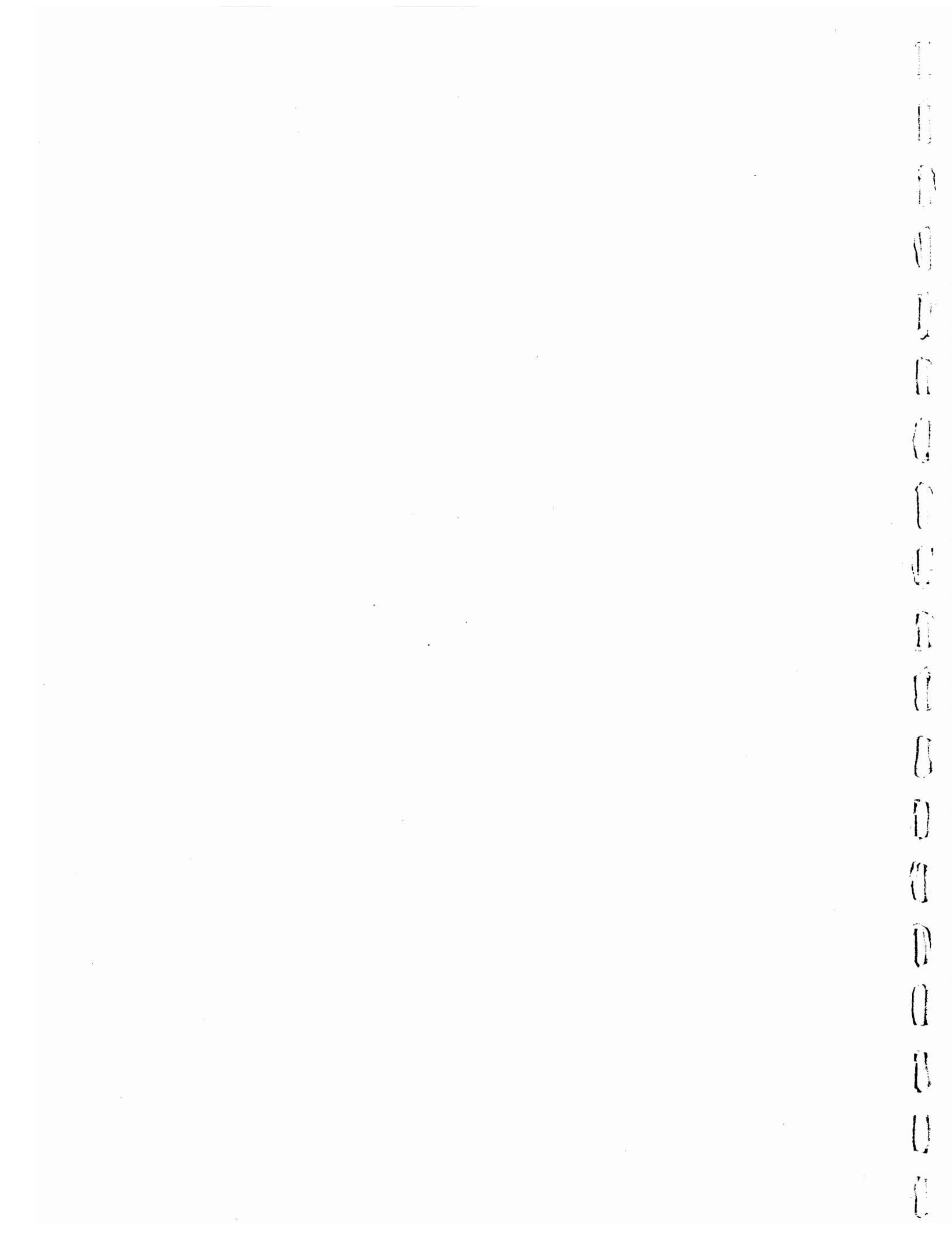
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Abstract

The work is an ethnography and series of three scenarios for future development of Cold Bay, Alaska. The analysis is based on the use of a systems model in conjunction with an options model which takes account of local perceptions of change and likely local responses to such change. The scenarios are based on assumptions provided by the MMS Office.

The ethnography begins with a physical description of Cold Bay; location, flora and fauna, and physical setting. Next, a history of the community is presented in which the origins of the town as an aviation enclave during World War Two, and its subsequent domination by the airport and governmental agencies for the next three decades, are explained. Recent historical events are also covered, including the final availability of private land in a 1979 Department of Natural Resources land sale (and the domination of the sale by outside speculators) and the incorporation of the community in 1982. Extrasocietal forces are discussed next, including the influence, which is great, of external governmental agencies and external commercial influences (the most important of which are transportation and communications firms). The consonance of the Cold Bay value system with the larger national system is also noted. Intrasocietal forces are the final aspect of input, and include a discussion of facilities and capacities (noting the current inadequacy of the sewer and water systems), private development (minimal as a result of the paucity of private land), and demographic structure (in which the large proportion of males, low proportion of families, and high rate of transience are noted).

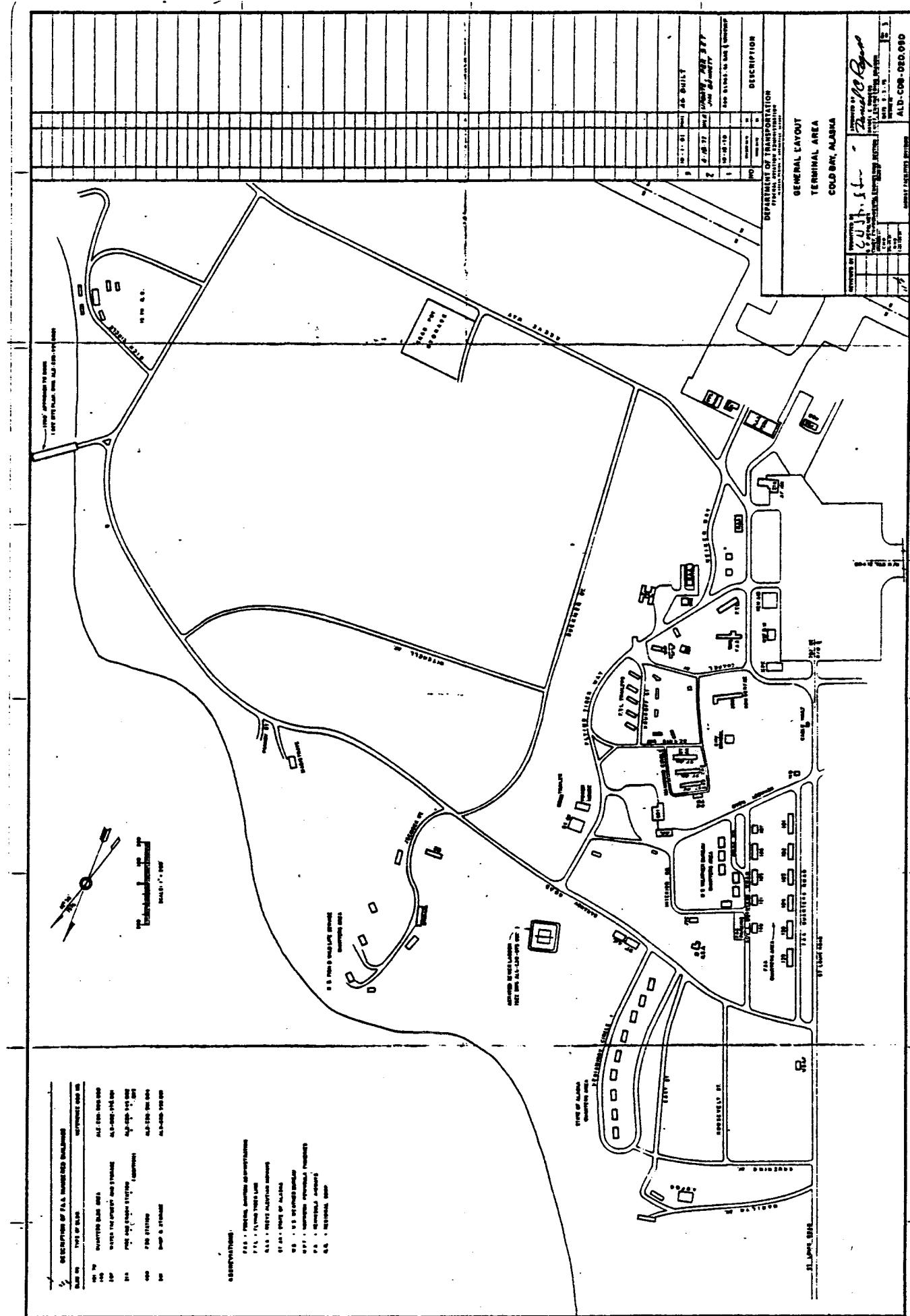
Structure is the next aspect of a systems model and includes economic, social, and political structure, religion, education, health care, social services, and recreation. The major economic fact is the total domination of the community by major external airport-related agencies, particularly private transportation and communications companies as the role of the government has declined over the years. The social structure of the community is dominated by transients, both short- and long-term, who far outnumber the few permanent residents. This results in a loosely integrated community with relatively low long-term commitment to the town itself. Since all major outside companies provide housing in localized areas, the influence of occupation on social networks is great, particularly given the absence of kinship relations beyond the nuclear family level. Political structure is bifurcated between the Department of Transportation, with responsibility for all the built up area of the town since it is airport property, and the newly formed municipal government, formed on incorporation in 1982, but which remains relatively powerless since it lacks land holdings and has minimal revenues. Religion is relatively unimportant in Cold Bay, though there is a moderately subscribed interdenominational chapel. Education is excellent, offering instruction from kindergarten through the twelfth grade. Health care has greatly improved with the 1982 construction of a modern health clinic, though a medical doctor is needed, at least intermittently. Social services are essentially nonexistent, but the need for them is not high. Recreation includes both subsistence activities and

the use of electronic and vehicular technologies.

The second half of the work analyzes the likely effects of three different development scenarios on Cold Bay social, economic and cultural structure. The first scenario assumes no oil-related development in the area, and is therefore a baseline scenario. Other things being equal, the Cold Bay economy will contract by one-third or more over the next two decades as RCA, the Air Force contingent, and the FAA all cut back local employment radically, though the community will survive handily as an aviation enclave, a reversion to its original structure. The social effects of this will be a paradoxical increase in sense of community as the permanent residents become a greater proportion of all residents, although this will be only a partial process. The political structure will be involved in assuming responsibility for the operation of community facilities and utilities as the major agencies currently operating them retrench. Effects on other areas of Cold Bay structure will be minimal, though there will probably be a need to cut back slightly on the number of personnel at the school as population drops.

The second scenario assumes the construction of a major LNG plant and oil refinery in the Cold Bay region, but with no direct road link to the community. This scenario has effects intermediate to the primary and third scenarios. Population will increase substantially, reaching 600 to 700 within ten years. Economic structure will be diversified with the introduction of oil-related personnel who will become a major segment of the labor force, especially as communications and government workforces are cut during the same period. There will be a need for expansion of most of the local infrastructure as population steadily increases. The social effects will be to create an incipient social class distinction between the white collar/ management personnel and the blue collar laborers, particularly as additional social venues become available (this will occur especially after 1985 when the Flying Tigers' exclusive lease expires). There will have to be expansion of both educational and, to a lesser extent, health care facilities as well.

The final scenario assumes construction of major LNG and oil facilities adjacent to the community with direct access by road. This scenario is fashioned on the basis of research conducted by the investigators in Valdez to determine the effects of similar processes there. This scenario will have the most dramatic and pervasive effects of the three. Economic structure will become totally dominated by oil-related companies and employees who will represent two-thirds of all local workers, making transportation and communications, for the first time, secondary in importance. The social effects will be to create clear income disparities leading to the creation of a social class system which will affect social venues, social and friendship networks, and residence. However, the community will remain transient and there will continue to be a low level of commitment to the community per se. Politically the major issue will be the necessarily rapid assumption of responsibility for and expansion of the community infrastructure in virtually every area. The municipal government will have to expand and be placed under the control of professional administrators with a rapid expansion of the municipal bureaucracy, and a decision will have to be made concerning whether to incorporate as a first class city. Finally, educational and health care facilities will be expanded as well.



Cold Bay: Ethnographic Study and Impact Analysis

Introduction

This report is an analysis of the socioeconomic impact of several scenarios for future oil-related development in and around Cold Bay, Alaska. The report is divided into two parts, an Ethnography of the community and the Forecast Scenarios for future development. The ethnography is an analysis of the current structure and functioning of the Cold Bay socioeconomic/sociocultural system. It is utilized as a baseline in the second half of the work from which to project changes under three different potential scenarios for future development. The primary scenario assumes no OCS-related development in the region and is an analysis of how Cold Bay would develop if "left to its own". The second scenario considers the effects of a major gas and oil facility in the region of Cold Bay but with no road link to the community. The final scenario considers the effects of a major development in the community of Cold Bay itself.

An Ethnography of Cold Bay, Alaska

Introduction

This ethnography is an analysis of the history and current structure and functioning of Cold Bay, Alaska. The information on which it is based is primarily ethnographic, based on several months of living and working in the community itself. During that period virtually every facet of Cold Bay social, economic, and cultural structure was the object of discussions and interviews. Employees and/or the heads of every organization operating in Cold Bay were interviewed extensively. As is customary in professional anthropological research, attribution of sources of information and opinions will not be made. Only where an individual is in a particular structural position and is espousing an official policy related to that position will individuals be identified. The process of research and reporting is above all one of negotiation and mutual trust between the researcher and the community in which he or she is working. We have taken every care to involve the community and to insure that the information contained here does not redound to the detriment of either the community or individuals within it.

The analysis is based on a systems model in which the local system is seen as responding to resources and constraints presented by an environment which is itself undergoing change over time (see BLM Technical Report 75 for an explication of systems analysis). These environmental changes force the local system to continually adjust to changed circumstances. Such an analysis calls for clear categories and consistent awareness of the boundaries of the discussion. We have divided the analysis into three overall sections: environmental input, local structure, and output. The input consists of four separate aspects. First are ecological factors; second is the history of the community; third are governmental, commercial and sociocultural forces, and fourth are intrasocietal forces, those aspects of the local system which, at least in the mid term, must be taken as "given" by the residents of Cold Bay.

The second overall division in a systems analysis is the structure of the local system, or those elements on which changes in the environment exercise influence. This category is divided here into two overall headings, value system (or the system of rules) and organization (or structure of local subsystems). Value system includes means of measurement of status, belief system, world view, and reciprocity and redistribution. Organization includes discussion of the economic structure, social networks, political structure, religious structure, education, health care, social services, and recreational activities.

The third division in a systems analysis is output and feedback. In this section the effects of the changes in the input on local structure are discussed. This includes a reiteration of the categories utilized in the discussion of structure, but from the perspective of the changes precipitated as a result of changes in the environment. In this report we will begin with a discussion of input, move to a discussion of structure, and conclude with a discussion of output and feedback.

1. INPUT

In a systems analysis the input consists of those elements located outside the system which form a set of resources and/or constraints for action within the local system. Input also consists of those elements of the local system which must be taken as relatively invariant by the actors in the system. In this section we will discuss the four overall categories of input. First, we will discuss the ecological forces which constrain activity in Cold Bay, including topography/geography, climate, food resources, energy resources, and commercial resources. The second area of input is the history of the community, which conditions the present structure and establishes limits within which action must occur. The third area is extrasocietal forces, including external government, external economic structures, and the larger sociocultural system within which Cold Bay is embedded. The fourth area of input is intrasocietal forces including community facilities and capacities, private development, and demographic structure.

1.1 Ecological Input

Cold Bay is located at 55 degrees 12' north latitude and 162 degrees 42' west longitude. It is on the south side of the western end of the Alaskan Peninsula on an inlet known as Cold Bay which nearly bifurcates the peninsula. The bay opens to the south and the Pacific Ocean. To the north, across an isthmus barely ten miles wide, lies the Bering Sea. The bay is about twenty-five miles long and nine miles wide. It is four miles wide at its mouth, and has a deep channel entrance marked at 60 feet. There are several reefs complicating entrance to the bay, including Kasolan Reef near the entrance and a group known as Sandman Reefs a few miles off-shore.

Cold Bay topography is predominantly tundra with few trees and many lakes, lagoons, and swamps. The entire area is a vast, interconnected drainage system. The most notable nearby physical features are Mt. Frosty to the southwest and the Pavlof complex (which includes several

active volcanoes) to the northeast. There are several streams, including Trout Creek and Russell Creek, in the immediate vicinity. To the north of town the tundra gradually breaks up into a series of lakes and marshes, finally becoming the Izembek Lagoon which opens to the Bering Sea. The community itself is located on the western shore of the bay.

The area developed geologically through volcanic action, followed by glaciation and marine deposition (Alaska Department of Community and Regional Affairs, hereafter ADC&RA). The last stage, which continues today, began when the Bering land bridge (Beringia) dropped beneath a rising sea about 10,000 years ago at the close of the Pleistocene. This last phase has created the current landscape, dominated by low, rolling tundra and a complexly interlinked series of marshes, lagoons, lakes, swamps, and bays.

Cold Bay climate is influenced by weather systems from both the Bering Sea and the Pacific Ocean. Weather is characterized by extreme cloudiness and fog, particularly in summer, averaging nine-tenths cloud cover year round. Wind is a major factor, averaging between fifteen and twenty miles per hour throughout the year with periods of sustained winds of thirty miles per hour not uncommon and gusts to double that. Snow and precipitation are not heavy, although measurable precipitation occurs over 200 days per year. Snow falls from October to May and averages about eight to ten inches per month. In winter snow combined with high winds frequently result in blizzard-like conditions which severely reduce visibility. Temperature is relatively invariant, due to the moderating influence of the large ocean masses nearby. Maximum temperatures average fifty degrees in July and thirty degrees in December, and minimums average between twenty degrees in January and February and forty-five in August (National Oceanic and Atmospheric Administration, 1982, hereafter NOAA).

Though Cold Bay is in a sub-arctic (i.e., comprised of tundra and treeless landscape) region, it is surrounded by abundant food resources, both marine and terrestrial. Particularly important, of course, are the marine resources, notably the several varieties of salmon which spawn in the region each summer and fall. However, few Cold Bay residents rely on these resources.

The Cold Bay region is especially rich in fish and crab. There are five species of salmon which migrate through the Cold Bay region, including small numbers of king (chinook), and larger numbers of sockeye (reds), chum (dogs), pinks (humpies), and silvers (coho). Most fish bound for the Bristol Bay area pass within range of Cold Bay, and much of the fishing industry of King Cove, only a few miles to the south, is based on the intercept fishery created when the migrating salmon come close to shore to pass through Unimak Pass to the Bering Sea. There are several abundant varieties of groundfish including cod, halibut, pollock, and perch. There are also several varieties of crab (king, tanner, and dungeness in particular), and much of the economy of the surrounding region is, or has been, based on the crab fishery.

Other marine resources include marine mammals such as seal (harbor, ringed, bearded, and fur), walrus, porpoise, beluga whale, and a resurgent population of pelagic sea otter. The otter, once hunted to near

extinction, has benefitted from a protection program and is again a common sight in the region, with estimates of the total population now at between ten and fifteen thousand (Department of the Interior, 19??). Abundant clam resources are also available but relatively unutilized.

The area surrounding Cold Bay is also rich in terrestrial fauna, though their commercial and subsistence value is considerably less than that of the marine resources. The major animal source of food is the barren ground caribou. A large herd (the Cold Bay Herd), of several thousand animals, winters on the flanks of the Pavlof complex and, in late summer and early fall, migrates around the bay and through the immediate Cold Bay vicinity. The only other land animal exploited to any degree is the Alaskan Brown Bear (a coastal variety of grizzly), but it is much less important than the caribou. There are also several varieties of fox in the area, most notably red fox, as well as weasels, wolverines, squirrels, and other smaller animals. Occasionally some of these latter species, particularly red fox, are trapped for their furs.

There is also a profusion of avian life. Many are actual or potential sources of food. The Izembek National Wildlife Refuge, just to the north of town, serves as both stopover and home for an amazing range of birds. Most subsist on all or a part of the eelgrass, or the ecological world dependent on the eelgrass, which grows in vast beds in the area. Eelgrass was, in fact, the rationale for the creation of the refuge. Birds using the area include several types of geese (Cackling Canada, Tavener's Canada, Emperor, and several varieties of brant), as well as numerous types of duck. The largest population of black brant in North America, over 250,000 birds, uses the lagoon on both the northern leg of their migration in spring and the southern journey in fall. Approximately 100,000 lesser Canada geese pass through in the fall. Between 200,000 and 300,000 dabbling ducks visit the area in the spring and fall (Department of the Interior, 19??). A small population of the Aleutian Canada goose, at one time thought to be extinct, has been confirmed in the last decade. Other, more permanent, avian species include peregrine falcons and bald eagles. The latter can be seen in concentrations of fifty to a hundred during the summer and fall gathering at the edges of streams to feed on spawning salmon.

There are no plant resources of note in Cold Bay. The only flora which might be exploited is the tundra which, since it is composed of scores of separate plants, puts forth numerous types of berries in profusion in the late summer and fall. There are no trees in the immediate vicinity, although alder and shrub willow occur near streams and lakes.

The mineral potential of the immediate vicinity of Cold Bay is not known to be great. The area lacks any known deposits of commercial value, and the Izembek National Wildlife Refuge has been removed from the provisions of the mining laws. However, Cold Bay is in a region which is increasingly recognized as the locale of vast energy deposits, particularly petroleum, and leasing is scheduled for at least two major areas, the St. George and North Aleutian Shelf lease areas, in the near future.

Though Cold Bay is in proximity to potential oil deposits, there are no major power resources located in the immediate vicinity. The only exception is the possible development of wind power through the con-

struction of a wind generator, which has not yet occurred on a large scale (there is one small wind generator in town). The community is totally dependent on imported sources of energy. This is true of diesel oil, used to run the major power plant as well as auxiliary generators and heaters run by individuals or businesses, and of gasoline, used for all motor vehicles. Natural gas, also imported, is used on a small scale.

There are several other resources which might be exploited commercially in the Cold Bay area, but as yet none have been developed. The most obvious are the fisheries. We noted the commercially significant numbers of salmon which migrate through the Cold Bay area yearly, as well as commercially valuable populations of crab and groundfish. At least four varieties of salmon (reds, chum, pinks, and silvers) are present in large numbers from spring to fall, but Cold Bay residents do not exploit them commercially. Crab is also abundant, including king, tanner, and dungeness, but they have also gone unexploited by Cold Bay residents. At any rate, crab has been in decline as a result of overfishing and an increasing groundfish population (the groundfish, particularly cod, feed on the immature crab in the larval stage, and increasing groundfish populations have put an additional strain on the resource). The most prevalent groundfish is pollock, but this resource too has gone unexploited by locals. Other groundfish, including cod, perch, and halibut (though the latter is not strictly classified as a groundfish because it brings a much higher per pound price) have also been relatively unutilized in the local area for sport or subsistence needs and almost totally ignored commercially. There are no major sources of herring in the immediate area, although there are substantial herring fisheries in other areas of the region.

1.2 History of Cold Bay

1.2.1 Introduction

There is as yet no comprehensive history of the community of Cold Bay. In the following we have depended on two kinds of sources. First, several individuals were interviewed who were in Cold Bay at various times from the origins of the community through the present. This is an invaluable source of information which might be lost if not gathered at this time. Second, there is a small amount concerning Cold Bay's role in World War Two and its aftermath in the Cuttlefish Series by the Unalaska City Schools, particularly Cuttlefish Five: The Aleutian Invasion, World War Two in the Aleutian Islands. A second source is Brian Garfield's The Thousand Mile War. Finally, there is a section in the Alaska Geographic Society's The Aleutians, particularly Chapter 13, which has a small amount of information concerning the role of Cold Bay in the war.

Cold Bay is a Euro-American community, made up almost exclusively of transients, people who consider their permanent home to be elsewhere, and is dominated by major outside corporations and governmental agencies. It is a community dependent not on fishing, as is the bulk of the region, but on the movement of goods and information. It is the transportation and communications hub of the peninsular/insular region. The

focus of this social and economic structure is the airport, a massive facility strangely out of place in a small town in the midst of the open tundra. By its very size it dominates the community, with the town cradled in the crook formed by the intersection of the airstrips, just as it dominates the community economically, politically, and socially. The flow of people, goods, and information it represents gives Cold Bay an outer-directed, centrifugal quality which permeates all aspects of community social structure. The airport is Cold Bay, and the town began with the airport's construction. Much of the history of Cold Bay is a chronicle of the ebb and flow of the strategic and economic position of the airport. The airport guarantees the survival of Cold Bay as a settlement. Though the population of the community has fluctuated widely through its history, it has never, since its inception with the construction of the airport, ceased to exist as the airport insures at least a minimal level of activity.

Cold Bay is new, transient, and publically owned. There is little sense of history, no sense of generational depth, local myth, or attachment to the locale. The residents are "sent to" Cold Bay, they do not "come"; people are passing through, they are not putting down roots. Land plays an important role in the persistence of these patterns. Due in part to the recent origin of the town as a military installation and in part to the ongoing control exerted by outside agencies (governmental and corporate) there is no land available to private individuals. It is nearly impossible to gain title to land on which to build, and the only housing in town is provided by companies which have the right to transfer the individual at short notice. The lack of land is neatly dovetailed with the transience of the population, and both are ultimately an effect of the airport. It is only recently, as we will note below, that the possibility of substantial amounts of land coming into private or municipal hands has emerged.

1.2.2 Prehistory

The prehistory of Cold Bay is undocumented. There is so far only circumstantial evidence that the site was ever permanently settled, and this early in prehistory. The site undoubtedly served as a passage from west to east for several migratory waves. It was near the southern edge of Beringia, the land bridge which spanned the Bering Sea, and served as a corridor for migrations from the Asian continent to North America. It is possible some of these peoples established at least semi-permanent settlements in the area, and the presence of a number of kitchen middens argues for this. However, there has yet been no systematic excavation so we know little about the people responsible for them or the time frame involved. In any case, it is certain these early populations have had no bearing on the present community of Cold Bay.

Cold Bay does not share the Russian heritage common to the rest of the region. To the best of our knowledge Cold Bay was unoccupied during historical times until World War Two. The nearest the Russians came to Cold Bay during their early exploration and settlement of the area was when early exploring parties wintered in Bechevin Bay, some forty miles to the west. Russian impact is limited to place names. The entire

region was named Izembek by Count Lutke in 1827 in honor of Karl Izembek who was a surgeon on board the Moller, a Russian sloop. Many of the natural features of the region, such as bays, lagoons, mountains, and so on, are also known by Russian names. Currently some of the street names in Cold Bay are of Russian derivation.

Prior to World War Two the area had seen only occasional seasonal fish camps and was apparently never the site of a permanent Aleut settlement. The area has inhospitable climate, particularly the high winds and cloudiness which characterize the weather year round. There are more sheltered areas in the region where Native settlements could flourish, and where the terrain was more amenable to resource exploitation.

1.2.3 Origins of Cold Bay: The World War Two Era

The origin of Cold Bay was in response to a national emergency. Oddly, the very factors which had worked against a permanent Aleut settlement, constant cloudiness and high winds, were factors which encouraged the final settlement of the site. During World War Two the Japanese successfully attacked and took several islands of the western end of the Aleutian Chain, the most important of which were Attu and Kiska. This sparked what has been called the Thousand Mile War, the struggle between the Japanese and the United States for control of the Aleutian Islands. Cold Bay emerged as a strategic response in this conflict. It was selected as the site for an army base including the largest airport facility west of Anchorage because, among other things, the climatic conditions discouraged detection and because few would suspect settlement of such an inhospitable site.

Cold Bay was one of a series of strategic bases constructed rapidly following the outbreak of the war and the military successes of Japan in the Pacific and the Aleutians. Construction of the airport was part of the construction of Fort Randall, a major army base for the Aleutian campaign. Construction of both began in late 1941 and was completed in 1942. During the brunt of the campaign Fort Randall was an important base, with thousands of troops and large numbers of fighters, bombers, and support material.

There were two stages in Cold Bay's involvement in World War Two. In the first the Japanese were on the offensive, putting increasing pressure on the eastern Aleutians; even threatening the peninsula and mainland. Cold Bay was important for two reasons. First, the bulk of the larger planes during the war were DC-3s, and they carried only enough fuel to get to Cold Bay from Anchorage or Seattle, so a refueling stop was necessary. Second, Cold Bay was an advance base during the Japanese offensive. During this period Cold Bay was manned by frontline troops, because the Japanese were closing and Cold Bay was in the advance staging area. There were squadrons of fighters stationed at the airport (in what was then the Army Air Force), infantrymen awaiting transport for attempts to retake islands held by the Japanese or reinforce islands not yet taken, and other materiel and manpower prepared for direct confrontation with the enemy.

Cold Bay was never directly involved in hostilities; no Japanese planes

penetrated to attack the town. The closest actual combat came to Cold Bay was the attack on Unalaska (usually incorrectly referred to as Dutch Harbor) by Japanese "kate" attack bombers and zeroes during the first week of June, 1942. Nonetheless, according to an informant who was there during the war, Cold Bay was, particularly early in the war, on the front lines, and the military commander had to be prepared for the worst. Therefore, the installation was constantly prepared for attack, and most assumed that it would one day come. It was during this period that the road from town to Grant Point (years later to become the site of a Distant Early Warning - DEW - station) was constructed, originally to move coastal artillery to the unprotected Bering Sea side of the base. It wasn't until 1943 that the people of Cold Bay were no longer worried about such prospects.

One important but little remembered role of Cold Bay during the first half of the war was as a lend lease port. In this instance the lend lease program was extended to the Soviet Union. Cold Bay was the major west coast lend lease port for ships, and this resulted in several detachments of Soviet soldiers, actually Soviet Marines, being stationed in Cold Bay. The current site of the Volcano Club, a large log cabin near the shore of Cold Bay to the north of town, was, according to residents, at one time an officers' club for the Soviet Marines (others are not so certain of this, but agree that if the Soviet Marine officer's club was not in the Volcano Club itself it was somewhere quite nearby). The Soviet soldiers accepted American ships, piloted them to Vladivostok, and fitted them for the Soviet Navy. There was also an aircraft lend lease program extended to the Soviets, operated out of Nome. In that program, Soviet crews went to Nome, took delivery of the airplanes, and flew them directly across to Siberia. According to Cold Bay residents, the number of Soviets present was modest. One man recalls they were billeted near the Volcano Club and lived in yak-huts, which are flimsy square framed huts with little protection from the wind. The lend lease ships were also loaded with cargo and supplies which were part of the lend lease program.

In the second phase of the war the character of the base began to change. According to one man who was there, this began in late 1942 and early 1943. Until then Cold Bay, along with Cape Air Force Base on Umnak, had been a frontline base. But by this time American forces had taken the offensive from the Japanese and began to push them out of the Aleutians. Now these bases began to shift from frontline to support as the American supply line lengthened along the islands. In August of 1942 American forces took control of and occupied Adak. They took Amchitka in February of 1943, and from there they continued on the offensive toward Atka, Kiska, and Attu (Thousand Mile War).

When the base switched from frontline to support it became more strictly an air base, and even the Army Air Force soon stopped stationing fighters there as the action moved steadily west. From this time on the major functions of Cold Bay were support, particularly transportation and communications; maintenance of radar facilities; and movement of personnel and material. On one occasion the radar proved very useful when a striking force was in the air when the weather closed in, blinding them. The radar picked them up and gave them guidance which helped them return. According to one longtime resident some were lost (the

wreckage can be seen near some of the islands today) but they were able to save most. Considering the limitations of World War Two radar the operation was a considerable feat.

The last half of the war was relatively uneventful in Cold Bay. The base continued to supply the American troops operating to the west, but once the Aleutians had been retaken most of the bases in the peninsula and island region became essentially garrisons. The war theater moved steadily south toward Japan, and the Aleutians were left in the wake.

Cold Bay originated as a strategic element of national military policy. This has had persisting effects on land tenure. Cold Bay was not originally a town (and would not be until the fifties) but a military site, a reserve. The federal military had total control of all land in the area, and control of the land would be passed from one outside authority to another through the history of the town, retarding the growth of permanent residents and sense of community. The site originated as a transportation and communications nexus for the region, manned by transients with few families present. Just as material and information flowed incessantly through the site, so did the personnel, and this transience was only encouraged by the lack of land.

1.2.4 The Post-War Period

After the war ended Cold Bay was no longer considered a strategic position by the military, and Fort Randall became a near military ghosttown, with only the airport operating actively. All regular troops were removed, and only a maintenance contingent was left. All the installations, living quarters, and other facilities erected during the war were left in place, simply abandoned, and the litter of rotted World War Two buildings still mars the landscape for miles around the town.

However, by the end of the war the airport had stimulated regular passenger flights between Anchorage or Seattle and the Aleutians, with Cold Bay as a stopover. The most important early carrier, and still a major force in Cold Bay, was Reeve Aleutian Airways. At that time Reeve was flying DC-3s and they had only a small operation in Cold Bay with just one man and his wife as permanent local employees. Reeve established a terminal which was, according to residents, an abandoned military quonset hut.

In 1948, to the best of local recollection, the base was officially changed from Fort Randall to Thornborough Air Force Base, acknowledging the centrality of the airport. Thus, during the late forties Cold Bay remained essentially a military base. Only the two Reeve employees and a representative of the Fish and Wildlife Service, who arrived in 1948, were non-military residents. No one in Cold Bay owned any land locally, and there were no truly permanent residents. The "town" remained a military site.

Confirming the lack of a true community, there was no true center to the town. There were no facilities for food or recreation other than the military facilities. The housing and offices of the base, according to someone who lived there from 1948, were scattered around the countryside

in buildings left over from the war. The area of greatest concentration was adjacent to the longer of the two runways, in the area now occupied by an airstrip apron and several businesses and hangars (including Northern Peninsula Fisheries, Peninsula Airlines, and the Fish and Wildlife hangar). That area included the bulk of the living space and most of the navigation and communications systems. Other structures included a bakery, located about three miles out the road toward Grant Point, and the Alaska Communications Service outbuildings, located beyond the airstrip (ACS was the predecessor of Alascom and the successor to the Army Signal Corps). During this period there were no telephones in town, and communications depended on either the ACS or the mails.

The late forties were years of contraction for Cold Bay. Population declined, as the military abandoned the site, from a high of several thousand to less than 100 by 1950 (U.S. Census). The late forties saw the first glimmer of a civilian presence in the town, but as yet this consisted of less than half a dozen individuals who were dwarfed by the military presence.

1.2.5 The 1950s

It was not until the early fifties that Cold Bay began to attract a significant non-military population. Until that time the settlement was totally dominated by, first, the Army and, later, the Air Force. The changes in Cold Bay social structure during the fifties were clearly signaled in the changes in jurisdiction over the airport facilities. In 1950 Cold Bay was still a completely military site, dominated by the Air Force which ran the airport as the Thornborough Air Force Base. However, declining strategic importance and increased civilian presence led, first, to the transfer of control of the airport to Reeve Aleutian Airways, then, shortly thereafter, to the Federal Aviation Administration. By 1958 the Air Force presence had shifted to Grant Point, eleven miles northwest of town, where a Distant Early Warning Station was established.

This process was interrupted for a time in the early fifties by the Korean War. Cold Bay once again became a strategic military base, particularly from the standpoint of supply. The population of the community grew once again and came to be dominated by the military. However, following the conclusion of the Korean conflict Cold Bay once again began its slow progress toward becoming a genuinely civilian town.

By the end of the decade the composition of the community had changed from predominantly federal military to predominantly federal and private civilian. Some of these came to Cold Bay on long term tours of duty and stayed for five years or more. Those long term transients who were married brought their families with them and lived in agency or company provided housing. Housing was provided, first in the form of trailers and later as woodframe houses, by all the major outside employers and housing districts emerged in which residence was determined by occupation. This started Cold Bay's curious tradition of occupation determining neighborhood, which means occupation has an inordinate effect on friendship and other associational networks. However, this increase in the long term civilian population was only a slow process throughout

the fifties, and did not begin to accelerate until the sixties, as is evident by the fact that the Cold Bay School was not opened until 1961.

A part of this change in Cold Bay social structure was the increased use of the airport by private carriers. Reeve Aleutian Airways continued to operate passenger, freight, and mail service throughout the region. Reeve was joined by Canadian Pacific and, later, Northwest Orient as commercial users of the airport. During this period the airlines were flying mostly DC-6s and Britanniias. The latter were a form of turbo prop and were the predecessors of the CL-44s which flew into Cold Bay frequently in the late fifties.

Of these airlines Reeve was the one which flew into Cold Bay all through the fifties. Canadian Pacific was strictly a small scale operation, though they flew international flights. They also, during the time they flew into Cold Bay, had a husband and wife team stationed there. They used the Britannia aircraft for passengers only, as at that time Reeve had exclusive freight rights for the region. Reeve also had the exclusive authorization to carry local passenger traffic. The others were only allowed to bring passengers through who were headed out of the region, and most stops by both Canadian Pacific and Northwest Orient were simply refueling stops on international flights. Northwest Orient came into town about 1955 and stayed for three years. They ran a considerably larger operation and were responsible for opening the first non-military restaurant in town. Actually a mess hall, the restaurant was open to everyone in town since there were so few people. They also operated a bar, the predecessor of the Flying Tigers bar The Weathered Inn. These were the first public facilities in town. Reeve had their own mess hall and sleeping quarters, arranged like a bunkhouse, but they were not open to the public. Through the decade of the fifties the aircraft generally progressed from DC-3s through DC-4s, DC-6s, Britanniias, and finally CL-44s.

The FAA was not the only civilian employer in town to assume responsibility for what had been formerly a military activity. The Army, and, after 1948, the Air Force had both operated the local weather service from the town's origin. However, with the impending move of the Air Force to Grant Point the National Weather Service took over the weather station in 1955, according to a current NWS employee. This led to the stationing of a National Weather Service contingent in town. Thus, by the end of the decade federal government had branched out from a purely military presence to personnel working for the military (Air Force), the Federal Aviation Administration, the National Weather Service, and the Fish and Wildlife Service.

During this period the town looked very different from today. It consisted of military buildings, control tower and airport buildings, and mess halls and sleeping quarters associated with the airlines flying into town. The section of town now occupied by the Flying Tigers Complex and the other buildings remained undeveloped until the sixties. However, some of the community infrastructure was begun at this time. In 1959, now in control of the airport, the FAA constructed a water and sewage system, initially for its employees. This system has since been expanded several times and is the same one currently in use in Cold Bay.

By the end of the fifties Cold Bay had once again dropped in population, mainly as a result of the continued decline in military presence. By 1960 the town's population was listed officially at 86. However, the composition of the population was also changing with the withdrawal of the military. The community had developed a federal civilian and private sector which grew gradually throughout the decade. The airport alone insured the survival of the town, and though the military was being replaced with civilians, the residents were still transient and there were still very few permanent residents. It would not be until the sixties that families began to come to town in anything but minimal numbers. However, that process would be interrupted by the Viet Nam War and not resumed again until the mid-seventies.

1.2.6 The Early 1960s

The sixties began with a continuation of the pattern of slow growth for Cold Bay, but increasing involvement in the Viet Nam War once again put the town at the mercy of massive outside forces. This involvement re-militarized the town, and put a temporary stop to the slow process of community evolution which had been the promise of the fifties. As we noted above, this process would not be renewed until the early seventies.

The key events of the early sixties were the effects of the admission of the Territory of Alaska to the union as a state in 1959 and the inauguration of the Flying Tigers operation in 1960 and the associated developments. The move to statehood resulted eventually in a considerable state presence in town, as the federal government began to relinquish responsibility for various tasks to the newly constituted authority. Within a few years after statehood, by 1963 according to residents, the operation of the airport again switched hands, this time from the FAA to the State of Alaska Department of Transportation and Public Facilities. The FAA was relegated to operation of the control tower and maintenance of the navigation equipment, while the DOT took over maintenance of the airstrip itself and of the roads and non-navigational facilities associated with it. Essentially this meant that the DOT had responsibility for the entire town since airport properties included everything in the built up section of the community. The State of Alaska Department of Fish and Game also took over many of the responsibilities formerly assumed by the Fish and Wildlife Service, particularly as they concerned coastal and inland waters and the wildlife associated with them.

During this period the current physical structure of Cold Bay began to emerge. One organization was especially influential in this process. In 1960 the Flying Tiger Lines signed a lease with the State of Alaska to rent land adjacent to the airport to help fulfill a military transport contract they had won. The lease included the right to operate certain facilities in Cold Bay. The Flying Tigers were flying CL-44s and Constellations at this time, and used Cold Bay as a refueling stop for their freight flights, primarily military. The lease was an exclusive one giving Flying Tigers the only rights to operate a restaurant, hotel, bar, store, package store, movie theater, and bowling alley in town. They soon constructed and began operation of the hotel. The building constructed by Flying Tigers at this time is still, in renovated form,

the core of the town today.

The central facility became known as the "H" building from its shape, and was originally a 32 room hotel, which was in heavy use during the last two-thirds of the decade as the war raged. The lease obtained by the FTL states that no other organization may operate a business which competes with one already operated by Flying Tigers without the permission of the latter. It also states that if Flying Tigers does not operate a facility to which it has rights in its lease and if another organization wants to operate such a facility they must notify Flying Tigers which then has eighteen months in which to open its own operation. Only if FTL fails to open the facility within eighteen months can the competing organization do so. It was not until after the war that FTL expanded and opened a store, restaurant, and bar. This was done by moving most of the hotel out of the original "H" building and into another building containing 14 rooms, as well as into several trailers divided into separate rooms. The original "H" building became a store, bar, restaurant, and also served as housing for several employees. Married employees are housed in five double wide trailers across and down the street from the main complex. The Tigers lease runs for twenty-five years, and comes up for reconsideration in 1985. Flying Tigers has the right to renew, but the local head of FTL stated that he did not think FTL could get an exclusive extension, but would have to permit competition under the terms of a new lease. In the time since the summer of 1982 several communications with individuals in Cold Bay have indicated, however, that it is unlikely that Flying Tigers will renew the lease at all.

Another event of importance in the early sixties was the establishment in 1960 by Public Land Order of the Izembek National Wildlife Refuge. This is an area of 415,300 acres forming a semicircle around the town to the east, north, and west. The refuge, consisting of one large and several smaller lagoons and surrounding marshes, lakes, and tundra, is critical to the survival of hundreds of thousands of migrating birds because of its vast beds of eelgrass. In 1963 the Fish and Wildlife Service inaugurated operation of a biological and oceanographic research station at Grant Point on the Air Force site (this station would continue to operate to the present, but operation of the facility was taken over by the University of Alaska in 1979). These events led to an increased presence of the Fish and Wildlife Service in town and contributed to the increasing "civilianization" of the town. However, they also removed a large amount of land from the possibility of private purchase.

During this first half of the decade Cold Bay saw an increasing civilian presence in, and the laying of the foundations of, the current town. This increasing civilian population, however, was offset by the reduction in military presence. At the beginning of the decade the town's population was only 86, and it stayed fairly steady, according to informants, until the mid-sixties, though the proportional contributions of military and civilian changed. The increasing civilian, and by now family, presence in town was acknowledged in 1961 with the opening of the Cold Bay School which offered, at the time, instruction in grades 1 through 9. However, this process of community formation was interrupted for nearly a decade, from the mid-sixties to the early seventies, by the

ascendance of Cold Bay to renewed strategic military importance during the Viet Nam War.

1.2.7 The Viet Nam War Era

The second half of the sixties was a period of rapid expansion, particularly militarily, as Cold Bay became a support facility for the Viet Nam War. Cold Bay was advantageously located on the great circle route between North America and the Southeast Asian Theater, and the widespread use of DC-8s and similar aircraft during this period called for a refueling stop before continuing.

During this period Flying Tigers continued to expand retail operations in town, and greatly increased the amount of air transport moving through Cold Bay, reaching a peak of more than 30 flights a month at the height of the war. FTL stationed ten mechanics in Cold Bay permanently, and these men serviced both FTL aircraft as well as others that flew into the airport. The town was inundated with military once again, as well as airport support personnel, and by 1970, the peak of American involvement in Viet Nam, the population of the town had tripled to 256. The sixties ended with a massive military presence in town, swelling the population to its highest post-World War Two level. However, as population increased community cohesion decreased as Cold Bay again came to resemble a military support facility rather than a town. The growth in population forced the construction and expansion of certain community facilities which are essentially those in use today in Cold Bay.

One important distinction between the military buildup of World War Two and that of the Viet Nam War concerned the nature of the personnel working in Cold Bay. During World War Two almost all the personnel were military. During the Viet Nam War the process of transfer of responsibility for airport and communications facilities from military to civilian authorities had progressed too far to allow the military to merely replace the civilian employees. The result was the expansion of the presence of the FAA, the National Weather Service, and other, particularly federal civilian and state, employers in town. This is one reason there was, as we will see below, a less drastic drop in population following Viet Nam than there had been following World War Two.

Another, seemingly minor, event of the time, but one which foreshadowed a central problem in Cold Bay, was the opening by the BLM of a small tract of land to homesteading in 1967/68. This was a tract across Trout Creek to the north of Cold Bay on the road to the Grant Point Air Force installation, and it was the only land available to private individuals in the entire region. Cold Bay has always been controlled, particularly with reference to land ownership, from outside. Ownership of the land had passed from the federal military to the federal civilian sector in the 1950s, and from the federal civilian sector to the State of Alaska in the 1960s. None of the land in Cold Bay was privately held, nor was any available for purchase. This encourages transience, just as transience contributes to a continued lack of available land. Two individuals did take advantage of the opening of the BLM land in 1968 and homesteaded on land across Trout Creek. This would be the only opportunity for acquiring land in Cold Bay until 1979, and would eventually

contribute to a major local controversy over land in the late 1970s and early 1980s, about which we will speak below.

1.2.8 The 1970s

The seventies can be seen as two distinct phases of development for Cold Bay. During the first half of the decade the VietNam war continued to monopolize Cold Bay activity and the military reigned supreme. This was followed by a steady, and eventually nearly complete, replacement of military by federal civilian and private corporations as the major local employers. Throughout the decade the problem of a lack of land availability continued to plague the community.

The 1970s began as an extension of the last half of the sixties. During the first half of the seventies the community was nearly completely militarized. The airport was a crucial link in the supply route to Southeast Asia, and served as a conduit for supplies and personnel. Cold Bay was crucial because the aircraft being used at that time were mostly DC-8s and CL-44s, with some 707s, all of which required a refueling stop along the great circle route from North America to Asia. This was a period of intense military air traffic, which included Flying Tiger activity, itself a major military cargo carrier during the war.

As the war continued unabated, some speculate that population continued to rise until it peaked at approximately 280 to 290 people in 1972 or 1973. Thereafter, with the winding down of the VietNam War, population began to decline and the military presence was reduced considerably. However, this reduction in the strategic importance of Cold Bay did not result in as drastic a loss of population following VietNam as it had following World War Two. Total population declined from 256 in 1970 to 236 in 1980 (U.S. Census, 1970 and 1980), and during this period the private and non-military governmental sector came to totally dominate the social and economic structure of the community at the expense of the military sector.

With the decline of the military in Cold Bay, private companies assumed an increasing role in the economy of the town. Reeve Aleutian Airways continued to operate out of Cold Bay and considerably expanded their operations as air traffic increased between the Aleutians and the rest of the state and country. Other airlines continued to use Cold Bay intermittently, including particularly World Airlines which operated through Cold Bay during the late sixties and early seventies. Eventually, however, Cold Bay became almost exclusively a Reeve town. This was the result of technological advances of the seventies which led to the development of wide bodied aircraft and the 747. These new generation aircraft had a much greater range than the DC-8s and similar aircraft which had been the workhorses of the previous generation. This increased range obviated the necessity of stopping for refueling in Cold Bay, and led to the abandonment of the airport by international flights, leaving Reeve as the sole major user. Cold Bay's position as a major transportation link had received two blows: the ending of the war and military traffic, and the introduction of new aircraft which needed no refueling stop.

The 1970s also saw the gradual expansion of the Flying Tigers Lines

(FTL) operations in the retail sector, as well as a decline in FTL activity in transportation. At the beginning of the decade FTL was a major user of the airport, but as the war wound down they used the facility less and less, as their major contracts had been with the military. For a certain period after the war the Flying Tigers transported cattle by air. The cattle came by and large from the Moses Lake area of Washington State, and were shipped live to Japan. At first FTL used DC-8s, and during this time Cold Bay was a major entrepot for the operation. However, later they shifted to 747s which did not require the intermediate stop, and Cold Bay was no longer important to the operation. By the middle of the decade Flying Tigers was flying into Cold Bay only rarely, and had expanded their retail complex until it was their major operation in town.

The federal civilian and state government sectors of Cold Bay were also growing during this period. The Federal Aviation Administration was enlarged to twenty employees, the National Weather Service was expanded to eight, and the Fish and Wildlife Service added men gradually throughout the period. There were some major changes in Fish and Wildlife jurisdictions in the early seventies. In 1972 the Aleutian Wildlife Refuge headquarters, which had been in Cold Bay, were moved to Adak Island, and the Cold Bay office retained control only of the Unimak Island Unit of the Aleutian Island Wildlife Refuge. Within a year or so of this change the Cold Bay office came into control of the Pavlof Unit of the Alaskan Peninsula National Wildlife Refuge. The State of Alaska Department of Transportation grew gradually as did the Department of Fish and Game. A major project undertaken by the state was the construction, in 1979, of a modern dock to replace the old community dock. The dock is 1,824 feet long, 12 feet wide, with a wharf area at the end 40 feet by 100 feet and is run by the state.

The distinctiveness of Cold Bay in the region is clear in the lack of local impact of several important pieces of government legislation passed in the early seventies. The two most important pieces of legislation were the introduction of Limited Entry and the passage of the Alaska Native Claims Settlement Act, both of which had deep region-wide social, economic, and political effects. Limited Entry had essentially no impact on Cold Bay because everyone there was employed by a major outside agency or corporation involved in transportation or communications. No one in Cold Bay fished for a living, and the fish processing sector remained underdeveloped, so no one was able to gain a limited entry permit. ANCSA also had relatively little effect. There was no native sector of the Cold Bay population to speak of, and ANCSA did not lead to the formation of a local native corporation or association. The major impact of ANCSA on Cold Bay was in the claims by the King Cove Native Corporation of a large tract of land extending from Russell Creek east and south to Mortensen's Lagoon, effectively removing this land from the possibility of future commercial or private development by the residents of Cold Bay.

The last half of the seventies saw the final dominance of the private and civilian sector of the population over the military. Most of the operations of the military at the Grant Point DEW station were relinquished to a private contractor, RCA, and this led to the stationing of approximately 30 civilian employees at the base. By the

end of the decade the military had been replaced by private communications and transportation companies as the major local employers, with federal and state civilian employees forming the next largest group of employees. The major federal employers were the Federal Aviation Administration, the Fish and Wildlife Service, the National Weather Service, and the Post Office. State employers included the Department of Transportation, the Department of Fish and Game, and the magistrate. Major private employers were Reeve Aleutian Airways, Flying Tiger Lines (primarily retail by this time), RCA (which had taken over operation of the DEW site following the VietNam War), and Peninsula Airlines (which opened a Cold Bay office in 1972 with two planes and two pilots and carrying primarily mail). Even with this final dominance of the non-military sector, however, Cold Bay remained firmly under the sway of major outside agencies and corporations. Their dominance, particularly of land, stunted the development of local business, and local entrepreneurial activity was limited to a single truck rental company begun in the late seventies.

If the key events of the first half of the seventies were the war and its winding down, the most important of the second half revolved around land and the struggle for its acquisition by private individuals. At this point we will consider the issue of land in detail, which will entail a discussion of events beginning with the founding of the town and continuing to the present.

1.2.9 History of Land Use and Ownership in Cold Bay

In a fundamental way the issue of land underlies and informs all other aspects of Cold Bay structure. It is the difficulty of getting land, and the patterns of land ownership which have lent Cold Bay its distinctive social and economic profile. By the same token the resolution of the difficulties surrounding the issue of land in the community is the most crucial priority facing Cold Bay over the next decade. If the community is to become a community in fact as well as in name this issue must be addressed. The failure to do so thus far has resulted in the kinds of structures which we will detail below. Economically Cold Bay is controlled by outside forces and is poorly integrated internally, a fact which is a clear reflection of patterns of land ownership. Socially the community is fragmented and centrifugal, again attributable at least in part to the pattern of land ownership. Politically the ostensible political power, the city council, is in actuality relatively weak thus far, and the true political power resides in that agency which has control of the vast majority of Cold Bay land.

In this section we will examine the problem of land use and ownership. In order to do so it will be necessary to review several important historical periods and events which will help illustrate the ongoing seriousness of the problem. We will then conclude with an overview of the current situation.

Cold Bay is in an unusual position from the standpoint of land use and ownership, just as we have seen it is unique from several other perspectives when compared with other communities in the region and the state. This unusual position is a result of several factors, including the

impetus to the founding of the community initially, the strength of outside agencies in the local arena (particularly the federal and later, with statehood, the state government), the absence of a Native population and resultant inability to take advantage of Native conveyances of land under the provisions of ANCSA, and the transience of the population itself. In order to understand the current situation with respect to land use and ownership in Cold Bay we should review some of the background of the community itself, with particular emphasis on the development of land rights and usage.

Historically Cold Bay has been under the almost complete control of agencies and companies, both governmental and private, which are basically external to the community. The town originated as a military encampment under federal control; the federal government constructed the airport there in World War Two and it is that facility which has been the lifeblood of the community ever since. Since Cold Bay had been unoccupied, or at best only occupied seasonally on occasion, by the Native population before the federal government came into the area there were no preexisting Native communities in the area which could claim the land as theirs, with the result that it all came under federal jurisdiction (although, in fact, as we will see below, this condition of the absence of Native claims in the area has now changed, though the claims are not by inhabitants of Cold Bay but, instead, by Natives from outside the community). A second result of the nature of Cold Bay's genesis was the fact that the community came to be, uniquely for this region of Alaska, a predominantly Anglo community, made up of western oriented technicians and professional workers imported from outside the region. A third result of this historical style of development was that the majority of the inhabitants of Cold Bay came to be transients. They worked for the major governmental or private organizations which hired them for "tours of duty" and after they had completed their tours most left the area for another area or to return to the region from which they had come.

The presence of the airport, and the corresponding emergence of Cold Bay as the transportation and communications hub of the peninsular-insular region surrounding it, insured that the community would remain essentially transient through the fifties, sixties, and seventies. However, there still emerged over the years a small cadre of people who came to see Cold Bay as home and who wanted, if possible, to establish permanent residence there. However, the events of the last few decades, and particularly of the seventies, have conspired to first keep the land in Cold Bay out of the hands of private individuals who might desire to build and live on it and, second, to make Cold Bay yet more attractive, paradoxically, to those who desired to live in the area. A brief recapitulation of the events of the last two decades will clarify these processes.

Once the federal government lost interest in Cold Bay, as it was no longer a crucial military installation once the war was over, a process began which eventuated in the relinquishment of most of the land in the area to the state government. In the sixties, with the emergence of Alaska as a state of the United States, the transfer of most of the land in the area from federal to state hands was effected. At first the airport was transferred from the federal military to the federal civil-

ian branch, and for a time the Federal Aviation Administration took responsibility for the operation of the airport and surrounding lands. Indeed, for a brief period during the nineteen fifties Reeve Aleutian Airways took responsibility for the operation of the facility. Later the FAA transferred most of that responsibility to the new State of Alaska. Thus, the state, operating through the Department of Transportation and Public Facilities, took over the bulk of the operation of the airport. The federal government, through the FAA, retained responsibility for the operation of the control tower, provided the air controllers, and maintained the navigational equipment, but everything else, including the maintenance of the runways, operation of the fire equipment, and responsibility for the roads surrounding the airport was transferred to the Department of Transportation of the State of Alaska.

From the standpoint of the residents of Cold Bay the most important aspect of this transfer of power was not the change in responsibility for the airport per se, but rather the transfer of land which accompanied this change. The federal government had had jurisdiction over essentially all the land in and surrounding Cold Bay. When they shifted power to the State of Alaska they also shifted jurisdiction over that land. Thus the State of Alaska came to control all the land in the town of Cold Bay itself, as well as all the land surrounding the community from as far as Mortensen Lagoon in the southeast to several miles beyond Trout Creek in the northwest, and including all the land surrounding the airport runways themselves. The federal government retained control of a vast amount of land to the north and west of the town proper, which eventually came to constitute the Izembek National Wildlife Refuge. During this period the town of Cold Bay remained unincorporated, so there was little local input into these decisions, and no corporate local entity which could exert pressure toward gaining local control of the land.

The decade of the seventies saw the intensification of the problem through the emergence of several new factors. The underlying theme during this decade was the emergence of the Native population of Alaska as an articulate and, to some extent at least, unified force tendering demands that they be granted control over their land and livelihoods. Thus the seventies saw several attempts on the part of both the federal and, more especially, the state governments to transfer control of land and economic activities to the Native population of the state. The two most important aspects of this process for this part of the State of Alaska were the introduction of Limited Entry for salmon fishing and the passage of the Alaska Native Claims Settlement Act both of which occurred in the early seventies. Limited Entry, at least in theory (this is not the place to go into the detailed problems of implementation and operation of the program), gave the Native population greater control over their main source of economic activity, salmon fishing, and in most cases completely transformed the economic standing of the Native population (though primarily a consequence of the coincidental increase in the economic value and high resource level of salmon).

However, the more important act from the standpoint of land, and Cold Bay in particular, proved to be ANCSA. With ANCSA the Native population

was allowed to establish village and regional corporations which then selected land in the areas surrounding the villages which would, on the incorporation of the village, be transferred to the Natives of the village who had selected the land. The result was that, as the villages incorporated through the seventies and early eighties, a massive transferral of land occurred from the state to the Native population.

The effect of this process on Cold Bay was twofold. First, it meant that most of the land in this region of Alaska was removed from any possibility of ownership by non-Natives. Once the Native population of the Native corporation had control of the land they were not eager, as a rule, to alienate it. Although land can be sold or leased, stock in the corporation itself cannot be alienated until 1991 (or twenty years after the conveyance of land, whichever comes first) when the corporations will go public. Thus, the amount of land which was realistically available for private purchase by non-Natives was greatly reduced.

The second effect was more directly felt by Cold Bay itself. The Native corporation of King Cove, a Native village located some twenty-five miles or so from Cold Bay on the Pacific side of the peninsula, selected a large tract of land just outside the town of Cold Bay as part of the land due the village under the provisions of ANCSA. This land stretches approximately from Russell Creek to the east of town to Mortensen Lagoon, several miles down the shore of the bay itself toward the village of King Cove. This is among the most desirable land in the area, and it was removed, at least in the short term, from the likelihood of ownership by private individuals in Cold Bay by its control by the Natives of King Cove. Thus, the events of the seventies had the twin results of restricting available land outside of Cold Bay at the same time that the land directly adjacent to Cold Bay came under the control of the village of King Cove thereby restricting the land available in the immediate vicinity. The amount of available land was constantly being reduced, making it increasingly difficult for those who desired to purchase land, and who were non-Native, to do so.

Thus, by the mid-seventies the land situation in Cold Bay was becoming increasingly difficult for those who would have liked to purchase some land of their own, build on it, and become permanent residents. At the same time, the restriction of land availability in other areas of the region, due to the claims of the Native corporations and the difficulty of outsiders becoming involved in the major economic activity of fishing, made Cold Bay one of the few areas in which it was even possible for an outsider, particularly a non-Native outsider, to contemplate getting some land and establishing permanent residency. And even though Cold Bay was at no time, and continues not to be, a Native community, we have seen that what most people consider to be the most suitable land for building a home was in fact claimed under the provisions of ANCSA by the Native corporation of King Cove. This meant that the only land one could even potentially conceive of owning was the land which had been transferred from the federal government to the State of Alaska. All the land which remained under federal jurisdiction, or virtually all of it, had been likewise removed from the marketplace through its incorporation in 1960 through a Public Land Order into the Izembek National Wildlife Refuge covering an area of more than 415,000 acres (actually, only approximately 320,000 acres is actually controlled by federal government

since the Statehood Act by which Alaska joined the union guaranteed all tidal lands from mean high tide down would be controlled by the state. This means that the lagoons themselves, which form over 90,000 acres of the Izembek Refuge and are the raison d'etre of the Refuge since the eelgrass in them is the major food source for the migratory birds which utilize the Refuge, are not actually part of the Refuge itself).

The only land, then, realistically available was land controlled by the state (with one exception which we will cover extensively below), and it is this land which became the focus of attempts on the part of that minority of the Cold Bay population which entertained hopes of permanent residency in Cold Bay. Eventually the state relented to this pressure and agreed to hold a land auction in 1979 in which a portion of state owned land would be put up for sale. However, for several reasons, this land sale did not finally solve the problems which it was ostensibly designed to address. Partly this was a result of poor communication between the local populace and the state. This, in turn, was a result of the fact that the town at that time was unincorporated, and thus had no single legally-established entity which could present the local case to the state officials. Partly it was also a result of the fact that the state simply didn't seem interested in addressing the concerns of that minority of local residents who wanted to get land of their own. The fact that the town remained unincorporated for so long can also be partly attributed to the fact that the town was composed primarily of transients, people who had no long term commitment to the town and who were unconcerned with planning for a future when they, after all, would no longer be resident in the community.

In this context, then, the State of Alaska decided in 1979 to open up a portion of its holdings in Cold Bay to public auction. The land under question was a total of 143 acres in 46 parcels on the east side of town between the built up portion of Cold Bay and the bay itself. It is important to note that this land sale took place in the midst of a rapidly changing social and economic context. That is, it is just at this time that it was becoming widely recognized that the next logical step in the exploration and exploitation of Alaskan mineral wealth would probably be the search for oil in the North Aleutian Shelf and Bering Sea regions of Alaska. Lease areas had been tentatively defined and it was clear to many, both within and outside of Alaska, that the potential existed for major finds and major development of oil reserves in the region. There was also a good deal of activity concerning the potential development of a seafood or commercial processing industry in Cold Bay, and this meant that any land available would attract a good many investors. This is the context in which the sale took place.

The sale itself took little account of local desires for relatively cheap land on which to build a home and on which to establish permanent residency. The state seemed to recognize early the potential profit to be made from the sale of land in an area in which rumors were rife of possible oil development. This was clear in the initial phases of the sale as well as in the sale itself. Before the sale even occurred the state established appraised values of all the parcels which would be put up for sale. The appraised value on a one acre piece of land was \$13,500, far beyond what local citizens had thought the value of the land would be and clearly a recognition by the state that this land was

probably seen as potentially very valuable should oil and oil-related development or fisheries development come to the area. The land under question was completely unimproved tundra; it lacked water, electricity, and sewage systems. Unless it was recognized that the land might have potential future value far above that which it had at the time of the sale there would have been no reason for the appraised value to be set at such a high level. Indeed, from the way in which the sale progressed this appears to have been an accurate assessment. The vast majority of the land was sold, and at prices which exceeded even the appraised values which the state had established. A gentleman from Seattle actually purchased a ten acre lot for the price of \$3 million, a cost of \$300,000 per acre. The Thirteenth Regional Corporation purchased several lots, totalling over 45 acres, for prices far above the appraised value. A major processor also bought a number of parcels. In the entire sale only six people who were actually residents of Cold Bay were able to purchase land, and these were small parcels of under three acres in every case. Several things about this land sale upset local residents and continue to be sources of anger and upset to this day.

First, the entire land sale appeared to be tailored to speculators. This was clear from several perspectives. First, the appraised value of the land was far beyond what the local populace had expected, and clearly recognized the potential speculative value of the land. An appraised value of \$13,500 per acre on unimproved tundra land is not what one would expect unless there were some obvious potential to the land. This was clearly a case of the state recognizing that the land had potential value as a result of the possibility of oil or other commercial development. Second, the state did nothing to attempt to insure that local inhabitants would get a chance to gain some land at a reasonable price on which to build and establish permanent residency. In talking to the residents of Cold Bay several ideas repeatedly emerged as ways in which the state might have, had they so concerned, insured that local residents would be able to get some land.

First, the state could have set the appraised values much lower than they did. When those values were established the state mandated that no opening bid would be accepted which was below the appraised value of the parcel, thus effectively freezing much of the local populace out of the bidding before it even began. Second, the state could have mandated that any land purchased would have to be developed within a set period of time, perhaps two or three years, or it would revert to the state for resale (although this was frequently suggested to the researcher, it would be a step of questionable legality, as this is not land grant or homestead land, but land which has been purchased for a price—the most which could be done in this area is probably the stipulation that tax breaks would accompany development but would not be granted if the land were undeveloped). Nothing like this was done, however, with the result that almost all the land purchased during that sale remains devoid of development. With only minor exceptions, which we will note below, there has been absolutely no activity of any kind on the land sold at that auction, further evidence that the majority of the land is being held by land speculators waiting to see if oil development inflates the value of their land in the future. A third step the state might have taken had they been concerned to encourage local occupation and building on the land concerns zoning. If all or most of the land was zoned as

residential it would have allowed for more local participation in the bidding. In fact this was done for only a very small portion of the total land being sold, and the vast majority of the land was sold as commercial, again clearly in recognition of the potential future use of such land in oil related activity.

The final aspect of the sale which upset people in Cold Bay was more explicit and had to do with violations by the state of at least the spirit of their own groundrules. In the description of the land to be sold and the conditions of sale which the state distributed prior to the sale itself it was stated explicitly that no individual or corporation would be allowed to purchase more than a single parcel, and that once an individual or corporation had successfully bid on any parcel they were thereafter debarred from bidding on any subsequent parcels of land. However, when the auction was actually held both the 13th Regional Corporation and a major seafood processor developed a strategy which allowed them to circumvent those restrictions. Essentially what happened was that a number of representatives of each organization went to the auction and bid ostensibly as individuals and were able to get a total of some ten to twelve parcels. After the auction was over these parcels were evidently conveyed by these individuals to the corporations themselves, or to a holding company acting for them, enabling them to gain control of a substantial amount of land, by far the largest parcels purchased in the auction. This is a point of considerable controversy even today in the community. Though strictly legal, the ploy had the effect of further freezing locals out of the auction. Between the speculators who were bidding on the land and the 13th Regional Corporation the small individual who lived in Cold Bay and simply wanted a parcel of land on which to build a home was squeezed out of the bidding. This is clear in a look at the list of buyers of the land - the list contains only six individuals from Cold Bay, while it is dominated by individuals and corporations from Anchorage, Seattle, Vancouver, Washington, Portland, San Francisco, and so on, not to mention the two major corporations.

This land sale, then, merely aggravated the preexistent situation. Since very few people in town were able to gain land through the sale, and since the bulk of the land which was sold was sold to outsiders, primarily speculators, both oil and processing, the situation was little different from that which had obtained previous to the sale - there was still very little land actually owned by members of the community, that land which had been sold lay idle and undeveloped, and there was now even less land than there had been before which might, at some time, come into the open market and be available for local individuals to purchase. This brings up a final point about the land sale. The fact is that the state, in deciding which land under its control was to be put up for sale, did not make available any land which the local inhabitants would have preferred to see available, but rather decided to sell that land which would clearly have the highest commercial value. The researcher was told by several people that they are much more interested in the possibility of getting some land a bit more removed from the developed portion of Cold Bay, but that the state insisted that the land to be put up for sale would be that land which was directly adjacent to the developed section of town. Even though the state had much more extensive holdings than those which were put up for sale they seemed

intent on selling only that portion of their holdings which would appear to be a good speculative investment based on the assessment of future development in the area.

By 1979, then, the situation was as follows. The best land, in the judgement of those who have lived in Cold Bay for some years, had been claimed by the King Cove Native Corporation, that is, the land located between Russell Creek and Mortensen's Lagoon. This land was essentially, at least in the short term, out of the local real estate market. The land to the north, east (across the bay), and west of town had been incorporated into the Izembek National Wildlife Refuge and was thus equally unattainable by private individuals. The land between the developed portion of town and the dock had been sold at auction in the 1979 land sale, and the vast majority of that land had gone to the 13th Regional Corporation and to outside speculators anticipating future oil and processing development in the area, with only a few local residents who had a good deal of ready capital on hand able to buy even small parcels of land. All the remaining land in the area was still in the hands of the State of Alaska, which showed little inclination to part with any of it. It should be remembered that the entire developed area of Cold Bay, and considerable land beyond that surrounding the airport, is officially part of the Cold Bay Airport which is, of course, controlled by the state through the Department of Transportation.

At this time the options for those who desired to get some land of their own and establish permanent residency in Cold Bay were rapidly dwindling. However, there was still one area which held out promise. When the Izembek National Wildlife Refuge had been instituted in 1960 it came to within about five miles of the northern side of town, then slanted sharply down on the western side of town to parallel the longer of the two Cold Bay Airport runways. These two sides of the Range, the northern and the western (from the standpoint of the town), along with the shoreline of the bay itself formed a rough triangle within which sat the city of Cold Bay along with a major plot of undeveloped land to the north of Cold Bay stretching from across Trout Creek to Blinn Lake on the road to the Air Force Station. All of this land was controlled by the Bureau of Land Management of the Department of the Interior. This was, literally, the only land left in the area which would be suitable for residential development. It was not a part of the Wildlife Range, it had not been sold at auction to speculators, and it had not been claimed by any Native corporation under the provisions of the Native Claims Settlement Act. It was inevitable that this land would become the focus of interest on the part of locals who wanted to own a piece of land of their own. It had the additional advantage of being located far enough out of town so that, in the words of one of the local residents, "you aren't living on the airport" at the same time that it had an excellent road, gravel, but well maintained, which ran through the middle of it providing good access and egress. It had the additional advantage, at least from the standpoint of the local residents, of being far enough removed from the developed portion of town and the new state-built and operated pier that it might not arouse the interest of speculators to the extent that the land sold in 1979 had. In order to understand the succeeding events it is necessary first to go back fifteen years and explain some of the history of this particular parcel of land.

The land in question has been BLM land for as long as anybody can remember around Cold Bay, according to the local head of the Fish and Wildlife Service. At one time, over fifteen years ago, the land had actually been opened for homesteading, and at that time two residents of Cold Bay did indeed homestead and register claims with the BLM. They were the only two people to do so at the time, and shortly thereafter homesteading was closed off--this was in 1968 according to the head of the Fish and Wildlife Service. The land continued to be BLM land for the subsequent twelve years or so, until 1980. At that time the land was conveyed by Congress to the Alaska Peninsula Wildlife Refuge, which is managed by the Fish and Wildlife Service. Homesteading had not been sanctioned by the BLM since 1968. Nonetheless, in the hopes that they would be successful two people from Cold Bay went to the area and established homesteads. Once they had done so they registered their claims with the Bureau of Land Management. This occurred (the first two since the two individuals in 1968) in December of 1978, before the land was conveyed from BLM to the refuge. The head of the Fish and Wildlife Service explained that every six months or so the BLM publishes what is known as a "status map" on which all land claims or changes in land status are registered. However, this status map includes all claims to land, whether they are legal or not. The BLM simply does not have the staff or time to immediately research all claims and determine rapidly whether they are legal or not. Thus, the status map has absolutely no bearing on the legality of a claim, it simply registers the fact that a claim has been made on BLM land. The head of the Fish and Wildlife Service, who has been in town for eight years and was intimately involved with all aspects of this misunderstanding, actually called BLM and asked them about the legality of the claims and was told that they were strictly illegal--there had been no possibility of homesteading in that area since 1968 or 1969. He then told this to the two people who were on the land, but they either refused or did not want to believe him. The Fish and Wildlife manager was aware that the land was scheduled to be transferred into refuge land and he sought to have the BLM resolve the problem before it was, literally, "dumped in his lap" since with the transfer to the refuge the jurisdiction of the land would also be transferred, in this case from the BLM to the Fish and Wildlife Service for whom this individual is the local representative. Understandably, however, the BLM was unable to alter its schedule to fit with the needs of the local representative of the Fish and Wildlife Service, and events conspired to put this representative in the middle of the controversy when in actuality he attempted to resolve the situation and avoid the inevitable animosity.

The major problem revolved around the status map published by the BLM and the misunderstanding of its importance by the two individuals who established claims in the area in December of 1978. When these two saw the status map, which came out in February of 1979, they saw their claims recorded on it and they immediately assumed that this meant that their claim had been warranted and that this was official recognition that their claim had been legal and of their right to title of the land. More than this, everyone to whom they showed the map in town, and the map was freely circulated, assumed the same thing. The result was a sudden rush of people to get out to the area, select a homesite, and establish a claim before the land was transferred to the refuge. This

was all based on a massive misunderstanding of the meaning of the BLM status map. This researcher saw a map on which no less than nineteen claims were registered, none of which were actually legal claims. The fact that these claims did eventually appear on subsequent status maps led these individuals to feel that they, as well, would be successful in gaining title to the land.

In the midst of this rush for land the parcels under question were finally transferred from the BLM to the Alaska Peninsula Refuge, which meant that it came under the jurisdiction of the local Fish and Wildlife Service manager and he was suddenly stuck with the headache which had been the result of a lack of understanding on the part of the residents of Cold Bay. In the time since then the Wildlife manager has explained several times, at City Council meetings and in other venues, that the claims lack any legal force, and that the only two claims which do have legal force are the two which were made fifteen years ago, but this has resulted in a good deal of animosity and bad feelings on the part of those who felt their claims should have been honored.

From this point it is difficult to establish exactly what events transpired because feelings have run very high throughout the development of this issue. In the meantime the manager of the Fish and Wildlife Service has been placed reluctantly in the middle of the controversy, and has attempted to mediate it as well as possible. He told the researcher that his primary concern is the wildlife in the region. However, since his major concern is wildlife he points out that the land in question is really not well suited for the cultivation of wildlife. It is fairly high land, with several hills and knolls and, for the area in which it is located, relatively little water. It is thus not particularly suitable for, in particular, migratory waterfowl, which are the main reason for the original establishment of the Izembek and much of the Alaska Peninsula Wildlife Refuges. He would therefore be more than amenable to trading that parcel of land for another which would be more suitable for the wildlife in which he is interested. He has several suggestions of land he would much prefer to have, and pointed in particular to a tract which is currently held by the state in the Cathedral Lakes area to the northeast of the Izembek Refuge which he says is very well suited to migratory avian wildlife. The problem from the standpoint of the municipality of Cold Bay, however, remains the same. They have no land with which to trade.

Even with the incorporation of the city of Cold Bay as a Second Class City in January of 1982 and the establishment of city limits in July of 1982 (which limits stretch all the way from Grant Point, site of the Air Force Station, in the northwest, to Mortensen's Lagoon in the southeast and includes the land we have been discussing as well as all the Department of Transportation land and the land claimed by the Native corporation of King Cove) the simple fact is that none of the land within the city limits of Cold Bay is actually owned by the city. The vast majority is either claimed by the Native corporation of King Cove (from Russell Creek all the way to Mortensen's Lagoon) or owned by the State of Alaska. What remains is the land sold at auction in 1979, none of which is held by the City (the largest owner of which is the 13th Regional Corporation), and the land now held by the Fish and Wildlife Service. Thus, even though Fish and Wildlife is willing to trade that

piece of land for another more suitable to the use of wildlife the city literally has, in the words of the manager of the Fish and Wildlife Service, "no chips to play the game".

The alternative is to negotiate with the State of Alaska. The Fish and Wildlife Service has several parcels of land in mind which they would like to have in lieu of the parcel in question, but all these pieces are owned by the state. It might be possible for the state and the Fish and Wildlife Service to work out a trade of land, and it would then be up to the City to arrange to get the land from the state in some way. This is exactly what the City is attempting to do with some land held by the state which stretches from the northwest side of the developed portion of the town out to Trout Creek. A brief word about this land is in order.

The state, as the largest landholder in Cold Bay, is the natural target of interest on the part of the people in town when it comes to the attempt to gain additional land for private development. There is a stretch of state-held land which people in Cold Bay, and the City Council in particular, feel would be suitable for building private homes on which runs from outside of town to Trout Creek - essentially to the boundary of the federal land about which we have been speaking. The City Council has drafted an official resolution and sent it to the state capitol requesting that the state turn that land over to the city. In the attempt to gain control of this land the city has enlisted the support of the State Senator for this region. The Senator was at the first City Council meeting attended by the researcher in July of 1982 and there he gave every indication that he thought such a transfer was likely if given enough time. He said that he expected it might take a year or so for the transfer to be effected but that he saw "no major hurdles". At the same City Council meeting the Senator was asked his opinion of the likelihood of getting the federal government to "swap" some land for the land across Trout Creek which is now under the control of the Fish and Wildlife Service. The senator replied that he thought that it should be possible, but that it would take considerably longer than the state transfer since it would have to go through many more levels of bureaucracy. It is possible that the ultimate idea is to swap the state land, should the city gain it, for the federal land which they seem to prefer.

Complicating the situation for the City is the fact that the laws of the state concerning incorporated cities have been changed in the last few years. The old Municipal Lands Entitlement statute guaranteed that each incorporated city should get at least 1320 acres of land. However, this statute has since been superceded, and there is currently no guarantee of land to incorporated cities. The City Council, with the encouragement and aid of the Aleutians East Coastal Management and Regional Planning Program, is currently seeking to gain some land in spite of these legislative changes.

One way in which this could happen is outlined by the Bristol Bay Cooperative Management Plan study group. That group projects that approximately one thousand acres of land will be disposed by the state for community use in Cold Bay. The state will acquire the land from refuge land (such as Izembek) or through land trades for Native lands.

This latter would be some of the land held by the King Cove Native Corporation in the Cold Bay city limits. According to this scenario the land disposal would be drawn out over a thirteen year period from 1987 to 2002. This would mean an average yearly disposal of about seventy-five acres.

Nonetheless, even if this BBCMP timetable is adhered to exactly, it will not be until 1987 that even a minor amount of land becomes available. Immediate resolution of these difficulties appears to be problematic at best. The Fish and Wildlife Service is interested in gaining land which is more suitable for wildlife than the land they currently hold, and it seems doubtful that the land which the council may get will fill that bill. If anything it appears even less suitable than the land which the Fish and Wildlife Service currently holds. Again, the essential point at the current time is that the city has no land at all, and therefore has little bargaining power.

There is a final note to the problem of land use and acquisition in Cold Bay which may be of some importance. In talking to several people, among them the Fish and Wildlife Service manager, it has been suggested that even if land was available, and at a price people could afford, there would still not be that many people who would actually build on it and establish permanent residence. They note that several of the people who were in Cold Bay at the time of the 1979 auction and were among the few who were able to get land have since sold the land and left the community. The implication, and it should be given consideration, is that the people who are attempting to get the land across Trout Creek are responding more to the possibility of getting free land than to the allure of Cold Bay as a permanent residence, and that what in all likelihood would occur if they were able to get title is that the majority of them would not stay in Cold Bay and establish permanent residence, but would instead sell their land in short order, pocket the profit, and leave town as they had planned all along. According to this scenario the majority of the people involved in this mass level movement onto the land are in actuality speculators every bit as much as were those who spent outrageous sums to purchase land in the 1979 land sale.

Whatever the case, this controversy points up the one dominant factor about land in Cold Bay. There is no land available for private purchase, and what land there is is in the hands of external agencies. Just as in the case of economic structure, or social structure, Cold Bay is a town which is oriented externally and in which strategies are played out with their primary referents defined externally to the community. In all of this Cold Bay remains, as the Refuge manager put it, a player with no chips.

With the state and federal government the major landowners in the municipality, any other businesses or agencies must of necessity lease land from those government concerns if they wish to operate an office or business in Cold Bay. This is in fact the situation which currently obtains in the community. Since the state is by far the largest holder of land in the community, and holds all the land encompassing the built up section of the town, it is naturally the major landlord in town. Thus the Flying Tigers lease their land from the State of Alaska. This is a twenty-five year lease which gives the Tigers, as noted earlier,

exclusive rights to operate a store, a restaurant, a bar, a hotel, a package store, a bowling alley, and a movie house. In fact Tigers thus far operate only the first five of these and have yet to build or operate a bowling alley or a movie house, nor do they have plans to do so. Nonetheless, they have exclusive rights to do so and if another outside firm wishes to operate either a bowling alley or a movie house they must first announce their intentions and then allow the Flying Tigers eighteen months to initiate such an operation on their own before they are allowed to build. If Tigers does initiate such an operation within the time limit then the other firm will not be allowed to do so. As for those operations, such as the hotel and store, which Flying Tigers is in fact already operating, no outside concern can open a competing operation without the explicit permission of Flying Tigers. In fact at least one company has come forward in the last five years proposing to build a hotel and restaurant complex but this idea was rejected by Flying Tigers and the company had no choice but to abandon the idea.

This review of the history of land ownership and usage in Cold Bay demonstrates the overwhelming influence of external agencies on patterns of land usage. The most important agency, of course, is currently the State of Alaska, although at times in the past the federal government has been equally important. Now, however, the monopolization of land by the state means that any corporations or agencies which wish to do business in Cold Bay must deal with the fact of state ownership of most available land. In essence this means that almost every operation in Cold Bay is located on land which is leased from the state. A brief examination of the location and status of the major businesses and agencies in Cold Bay will clarify this fact.

1.2.10 Current Patterns of Land Use

There are three major areas of development in Cold Bay. The first is on the perimeter of the airport itself and consists of businesses or agencies which are either instrumental in the operation of the airport or which depend particularly on air transport in the pursuit of their business. The second area is the "downtown" section, located just to the north and east of the main airport buildings and the location of the major service facilities for the town. The third area is that around the outer perimeter of the built up section of town and consists of some offices for state and federal agencies and most of the residential area of town.

The first area is that surrounding the airport itself and consists primarily of agencies and buildings concerned directly with the airport itself. The first of these is located on the airport apron near the intersection of the main and cross-wind airstrips. This is Reeve Aleutian Airways, and the Reeve complex consists of a large quonset building which contains the terminal itself, the offices, and, upstairs, several rooms which are used by Reeve employees (primarily by the single male employees). Reeve also operates, along with Chevron, a fuel dispensing service which is housed in a separate building directly to the east of the terminal. All of these buildings are leased from the state. Next to Reeve to the west is the main north-south apron which runs along the

main runway. The first building on this apron is a two story combination hangar and office building run by Peninsula Airlines and the second building is a slightly smaller one devoted almost entirely to hangar space which is also run by Peninsula. Next to Peninsula to the north (and slightly west) is the hangar of the Fish and Wildlife Service. The next building north is the warehouse and living space of the Northern Peninsula Fisheries which is also a two story building. Additionally, between the Reeve terminal and the first of the Peninsula hangars is a space in which two new buildings are either planned or being built. Closest to the Reeve terminal is a new clinic which was completed in September, 1982. Between the clinic and the Peninsula hangar a space has been cleared for the construction of an additional hangar which will be operated by a local resident in partnership with another individual with substantial interests in the community. All of these buildings are located on land which is leased from the State of Alaska. In fact the state itself maintains Department of Transportation and Public Facilities offices in the space between the new clinic and the proposed hangar discussed above.

The second major area of development in Cold Bay is in the center of town itself. This is an area to the northeast of the Reeve terminal and is roughly bounded by the two airstrips (the main one to the west and the crosswind strip to the south) and the bay itself to the north. Within this area is the Flying Tigers complex, which has already been described and is located on land leased from the state. Also located here is the Reeve bunkhouse and the Reeve messhall, both of which are also on land leased from the state. Also in this area are several storehouses and warehouses for various agencies located in Cold Bay. The Northern Power Company maintains a power station in this area, and the one local business enterprise, Cold Bay Truck Rentals, also has a two building facility nearby, and both of these concerns also lease land from the state.

The final area of intensive land usage in Cold Bay is on the perimeter of the downtown area and consists primarily of housing for those who work in the community. Each of the major corporations and agencies which operate in the town provide their employees with housing in the community. The Federal Aviation Administration has eleven houses located to the north of the main hangar area along the longest runway. Eight of these are duplexes and three of them are single family homes. They are located on land leased from the state. Adjacent to the FAA housing, immediately to the east, is housing for the National Weather Service consisting of six houses, each of which is a single family home. These are also on land leased from the state. To the north of these two complexes of homes are two more complexes of state housing. The first consists of nine homes and is occupied by employees of the Department of Transportation. The second consists of three homes and the offices of the Department of Fish and Game. The major remaining residential area is removed from the state housing by approximately a quarter of a mile to the east and consists of four houses and a bunkhouse, in addition to a shop and office area, occupied by employees of the federal Fish and Wildlife Service. This land is unique in that it is not owned by the State of Alaska but is instead owned by the Department of the Interior,

so the Fish and Wildlife Service is the only non-state entity in town which is located on its own land.

The final area on the perimeter of the built up section is even more removed from downtown than the areas discussed in the previous paragraph. This is the area which was the focus of the land sale of 1979. This land is located to the north and east of the built up portion of town, between the latter and the state dock on the bay itself. There are two types of development in this area, residential and business. The residential buildings are still few and consist of one house, the magistrate's, one cabin between the magistrate's house and the dock, and two trailers, one directly across the street to the south of the magistrate's house and one between the magistrate's house and the center of town. These homes are on property which is either owned by the individuals living on it or, in the case of the cabin, by a friend of the individual living on it.

The only commercial operation in this area is the ARCO staging area just to the east of the dock on the shore of Cold Bay itself. This complex is used exclusively as a support and supply facility for the ARCO off-shore oil rig located to the north in the Bering Sea. This facility is on land which was purchased by the Thirteenth Regional Corporation in the 1979 land sale and is leased from them by ARCO. Only one individual is actually stationed in Cold Bay and resides at the staging area itself. Two helicopter crews, contracted to ARCO, are stationed in Cold Bay as well and live at this facility. Cold Bay, to this date, has only been used as a transportation entrepot through which the crews of the COST well are moved en route to Anchorage and the lower-48. Their facilities in Cold Bay are completely self-contained including two generators (one of 75 KW and one of 50 KW), recreational, dining, and sleeping facilities. They draw their water, in fact, from their own well which is the deepest and best (producing the highest quality and quantity) in the community. These oil-related employees have made a concerted effort, according to most residents, to avoid possible detrimental effects on the social organization of the community. They very rarely visit the Weathered Inn, the Tiger's store or cafeteria, or engage in other public activity. It may be that the ARCO facilities are seen by these individuals as totally adequate to their physical and social needs or that their activities are somehow circumscribed by the implicit or explicit directive of ARCO authorities. Due to the fact that these individuals do not in any way interact with other community members we will not discuss their presence further in this report. However, for purposes of later analysis their behavior will be used as indicative of ways in which future representatives (if their numbers are small) of petrochemical firms are likely to interact with the community.

This completes the description of land ownership and use in Cold Bay. Again, the most important fact is the virtual monopoly exercised by the State of Alaska on land ownership, and the subsequent necessity for other businesses and agencies to lease land from the state in order to operate in town. This factor will continue to be important in the future, and the municipality itself will be concerned with the issue for some time to come. Until it is resolved in a way which will lead to increased availability of private land the likelihood of the development of a sense of community in Cold Bay will continue to be low.

1.2.11 1980s: Incorporation and Retrenchment

Cold Bay has been pulled in two different directions in the eighties. On the one hand there is the hint of oil-related development and the possibility that this may signal a resurgence of local growth. On the other hand is the reality of plans on the part of several major local employers to cut back their operations in Cold Bay, and the possible impacts these plans might have on the local economy.

Though the decade is only in its third year, the eighties have already seen an abortive attempt at the establishment of a fish processing capability, a final successful move toward incorporation, and increased concern about the future directions of change, particularly with reference to potential oil-related development. Cold Bay itself continues its slow march toward becoming a true community, but remains hamstrung by the lack of available local private land.

The decade opened with some promising developments in the fisheries area. In 1980 the Alaska Department of Fish and Game opened a salmon hatchery on Russell Creek, just a few miles east of town. The hatchery has functioned smoothly since, but, as we will note below, now faces the possibility of being closed by the state. In another fisheries related development the 13th Regional Corporation unveiled and began to pursue plans for a major fish processing operation on land purchased in the 1979 land sale. The 13th purchased a floating processor, reportedly for between eleven and thirteen million dollars, renamed it the Al-Ind-Esk-A-Sea, and docked it at the end of the state-owned dock to process fish. The operation only continued sporadically for about a year before it became clear it would not be profitable. Some of the problem arose from the lack of adequate water supply, and the Al-Ind-Esk-A-Sea had to actually leave the dock every few days to go to King Cove to get fresh water. Part of the problem was also bad management on the part of the 13th Corporation, and management of the corporation has since been assumed by several of the banks which forwarded the original loans. Part of the problem was also the lack of adequate small harbor facilities in Cold Bay, thus discouraging fishermen from coming all the way into the bay at the risk of being caught unprotected by bad weather. Since that operation closed down the Al-Ind-Esk-A-Sea has burned and is no longer in commission.

For a brief period the 13th Regional Corporation had an agreement with Flying Tiger Lines to deliver live crab to FTL who would then fly them to Japan (Narita airport). Several problems developed, however. First, the crab had to be flown to Anchorage and only then, on a 747, to Japan. This meant the crab was out of the water for sometimes twelve hours, and the rate of live delivery was too low to be profitable. Second, the transfer between aircraft in Anchorage often took longer than it should have, as the crab were not given priority by the Anchorage freight handlers. There was also a problem with getting landing and unloading reservations at Narita, as it proved impossible to make advance reservations and this slowed the offloading in Japan. Finally, the delivery of crab from the 13th Corporation was too unreliable from

day to day.

All these difficulties eventually led to the abandonment of the idea of a fish processing sector in Cold Bay, and the financial difficulties of the 13th Regional Corporation forced them to liquidate their operations. The floating processor was reportedly leased to SeaLand, which used it as a processor in Dutch Harbor, according to the local reports. The processor has since burned and is no longer in use. A part of the land owned by the Corporation in Cold Bay has been leased to ARCO (discussed above), which is using it as the staging area for support and maintenance of their exploratory offshore oil rig in the Bering Sea. Thus, what began as a promise of possible fisheries development has ended as a hint of the possible future impact of oil-related development.

The events of the late seventies and early eighties convinced many in Cold Bay that local residents were impotent in their ability to deal with the state, the federal government and, in general, outside forces. The combination of concerns over land availability, the possible future impacts of oil development, the effects of such oil development already in the form of land speculation during the 1979 land sale and the presence of ARCO, and related issues led to the emergence of a strong movement for the incorporation of Cold Bay. It was thought that such incorporation would, at the least, establish a legal entity representing local interests with which outside agencies and companies would have to deal before they became involved in local land purchases or development.

The movement for incorporation failed several times before it was finally passed by the electorate in January of 1982. The immediate motivation to incorporation was the widespread belief that in order to have a clinic constructed in town it was necessary to incorporate. In fact, it appears that the construction of the clinic had been approved by the state prior to the successful vote on incorporation, and that a negative vote would not have precluded such construction. Nonetheless, with the clinic as the immediate issue, and the other factors noted above as long term causes, the city was incorporated as a Second Class City in January of 1982.

Since incorporation the city has been concerned with several basic issues. All these issues, however, revolve around the central fact of Cold Bay's municipal existence: the City of Cold Bay has absolutely no land holdings, and all land within the city limits is owned either by private or governmental outsiders. Though the municipal government is, de jure, the ruling body in Cold Bay, de facto power remains in the hands of the Department of Transportation which still owns nearly all the land within the city limits. This means that the municipal government has very little bargaining power in dealing with the state or other outside agencies or corporations.

There are several important local issues which have concerned the newly incorporated city thus far. First, there has been the task of defining the official city limits of the new entity and of establishing a working budget. The city limits were approved by the state and officially accepted by the city council in July of 1982. They stretch roughly from Russell Creek in the southeast to about a mile beyond Trout Creek in the

northwest, and run from Trout Creek out to include the Air Force Base and the shores of Izembek Lagoon. The new budget totals approximately \$26,000 revenue and \$24,000 expenditures leaving a total surplus of about \$2,000 for fiscal year 1982. All city revenues at present come from state revenue sharing and the federal government.

A second task has been the attempt to once again free some land held by the state and/or federal governments for private purchase, particularly to allow prospective permanent residents to build homes. The city has drafted official resolutions to the state government, particularly the Department of Transportation which holds a virtual monopoly on land in the developed part of town, requesting that a section of land from the town center approximately out to Trout Creek be ceded to the city. At present this process is in the early stage of negotiation. The city has also drafted an official resolution to Secretary Watt of the Department of the Interior asking for a similar cession of land held by the Department of Fish and Wildlife on the other side of Trout Creek (the land on which squatters attempted to establish homesteads). There has thus far been no reply from the Secretary. For the last six months the City has been aided in this process, and in the definition of other local needs, by the Aleutians East Coastal Management and Regional Planning Program. If the City is successful in gaining control of this land there is a good deal of sentiment that the City should take steps to avoid the wholesale entry of speculative interests such as occurred during the 1979 sale. How to achieve this is currently a topic of debate in town.

In fact, it is possible that the city may ultimately benefit from the 1979 land sale. This is because the inflated prices for which the parcels were sold in 1979 have begun to exercise their toll on some of the purchasers. The parcels purchased in 1979 were bought for ten percent down and nine percent of the purchase price due September first of each of the next ten years. However, several parcels are now in default, including some of the largest purchased. The individual from Seattle who purchased ten acres for \$3,000,000 has defaulted on his payment for each of the last three years (this September (1982) is his third default). At the City Council meeting in August, 1982, it was revealed that this individual has now declared bankruptcy, and it is possible that the land he purchased may return to the state. The city is anxiously pursuing the possibility that this land might, ultimately, be turned over to the municipality. The wife of this individual from Seattle, who purchased a parcel of just under three acres, has also declared bankruptcy. Finally, a woman from Kodiak who purchased a parcel of approximately three acres is also apparently in the process of bankruptcy. The high speculative prices paid by outsiders in the 1979 land sale may ultimately redound to the city's benefit.

A third focus of interest on the part of the newly incorporated city has been the realization that eventually the city must take responsibility for the provision of basic utilities and services which are now either provided by other agencies or under the control of outside agencies. Again, the dominant force here is the Department of Transportation, and secondarily the Federal Aviation Administration. The DOT currently operates both the airport and the dock. Early in 1982, when the city approached the state about the transfer of some state land to city control the state agreed on the condition that the transfer include all

the land under DOT control, including the airport and the dock. The city was unprepared to assume responsibility, particularly for the airport, as the expenses involved are substantial and beyond the current capacity of the city. Once the state became aware of the concerns of the City, the offer was quickly withdrawn. However, the city responded with a proposal that they accept most of the land with the exception of the airport and the dock and then gradually come into control of those two facilities over the next four to eight years. Or, alternatively, they would take the airport and dock immediately with the other land, but would then be forced to turn to the state and remind them that Cold Bay, as an officially designated international airport, is the alternative landing site for Anchorage International and that the city would be unable to keep it open without state aid. Again, this is an important process of essentially informal negotiation which is ongoing. At any rate it seems that within the decade Cold Bay will take responsibility for the airport and the dock as municipal operations.

The DOT, as owner of the land on which Cold Bay is situated, also has current responsibility for the upkeep of roads, signs, and safety equipment throughout the town. This is another area in which the city will have to assume increasing responsibility, particularly if they are successful in gaining control of what is currently DOT land. A final aspect of DOT involvement in the community which is undergoing scrutiny currently is responsibility for firefighting. Currently the DOT has the only firefighting equipment in town, and though they are not legally bound to aid in the case of fires to other than airport or DOT property they have in fact acted as the unofficial providers of firefighting capability for the city. Volunteer firemen were allowed, for instance, to use DOT equipment in fighting the largest fire in recent history, the Easter (1982) fire which destroyed most of the power house. Currently, however, there are plans for the DOT to sell off two of their firetrucks (actually one go-trak, an all-terrain vehicle designed to allow access over tundra, and one jeep which has been converted to carry 500 pounds of dry chem). They anticipate that the city will take them at nominal cost, thus giving the city a firefighting capability for the first time.

The issue of city responsibility for the provision of services and utilities to its citizens has also been important in relations with the Federal Aviation Administration. Currently the FAA takes responsibility for the water and sewer systems, both of which were built by the FAA in 1959. However, with the incorporation of the city and the concurrent retrenchment plans of the FAA (discussed below) there has been a push to get the city to accept responsibility for water and sewer service. Water is provided from two wells owned by the FAA, and these and the sewage lagoon, which aerates and chlorinates the sewage for eventual outfall into Cold Bay, are maintained by FAA personnel who the FAA is anxious to remove from the payroll. An additional roadblock in the transfer of the sewage system is the fact that the system currently does not meet Environmental Protection Agency minimum standards, and there is resistance on the part of the FAA to bringing it up to standard while the city is hesitant to accept responsibility until this is done.

A basic aspect of these problems of jurisdiction has to do with a fourth concern of the city: municipal revenue generation. We noted that Cold Bay operates on a budget of just \$26,000 per year at the present. All

this money is generated from state revenue sharing, to which Cold Bay is entitled as a second class city, and from the federal government. The city will have to face the issue soon of managing utilities and services, and if they assume this burden they will be forced into several changes in the current system if they are to generate revenue and not operate at a loss. For example, the possibility of revision of water rates has been a recent topic of discussion in city council meetings, on the premise that the city may soon have to operate the water system. The issue of municipal taxation has also been raised, but there has generally been very strong resistance since this was one of the principal arguments obstructing incorporation in prior attempts. Under Alaska law Cold Bay, as a second class city, has the right to levy a three percent sales tax as well as a property tax.

Connected with this issue of revenue generation, and an issue in its own right, is the attempt to get a small boat harbor or dock constructed in the bay. Many local residents feel that the fish processing sector would be greatly encouraged if there was a sheltered area for boats to dock or anchor, and if a fish processing sector ever is established it will generate income through a municipal share of the state fish tax. Even a breakwater would be a considerable improvement over the current total lack of such facilities. However, any realistic hope that this could be achieved was given a mortal blow by the findings of the Army Corps of Engineers feasibility study of some two score Alaskan coastal communities directed toward small boat harbor construction, breakwater construction, and navigational improvements. Cold Bay was one of the communities in the study, but in the final report no improvements were recommended for the community. Thus it appears that at least the foreseeable future holds little promise of fisheries development in Cold Bay.

A final push of the municipal government has been much more successful than those discussed above. This has to do with the provision of adequate medical care to the citizens of Cold Bay. Cold Bay has never had a clinic or a hospital, and this was in fact one of the proximal rationalizations for incorporation; that is, so that the city could get state funds to aid in the construction of a clinic. In fact, as we noted, it turned out that the state had already approved the building of a clinic before incorporation. At any rate, the city has been very successful in getting the clinic constructed. The bulk of the work was done in the summer of 1982, and the finished clinic includes three examination rooms, an emergency room, a laboratory, a pharmacy, and a kitchen.

There is one further issue which will prove to be very important for the future of Cold Bay, though it is only now becoming a topic for discussion in town. There are signs of serious future changes in the Cold Bay employment picture. The Federal Aviation Administration has plans to convert the Cold Bay airport to solid state technology and "remote" all operations out of another "hub" airport, probably Bethel or King Salmon. This will result in a manpower reduction over the next decade from the current 16 to 2. RCA is currently involved in a similar process of "remoting" operations of the DEW station out of another facility, probably King Salmon, which will reduce its workforce at the site from 26 or 28 to 14 or 15. The Air Force is expected to end its presence in Cold Bay for the first time since the creation of that arm of the service,

and within a year to two years the seventeen military personnel at the base will be reduced to zero and only RCA technicians will be left behind to operate the site. Cutbacks by these three agencies alone will total at least forty-five jobs, out of a total community employment estimated at 149. These positions alone represent one third of all jobs in Cold Bay. This will call for some serious adjustments on the part of local structures, particularly the municipal government.

The seventies saw the final fulfillment of the promise of the fifties, and Cold Bay became a town dominated by long term civilian transients, many of whom brought their families with them. Over the last half of the seventies the Cold Bay population changed composition to reflect increases in women, nearly all of whom are married to men working for a major local concern, and children, even though the population is still inordinately weighted toward single males. The Cold Bay School has experienced gradually increasing enrollments, and was expanded in the late seventies from K through 9 to K through 12, so a high school education became possible while living in Cold Bay. This encouraged families located in Cold Bay to remain longer than before when it was impossible for their high school age children to get a local education.

This is where Cold Bay finds itself today. The community has incorporated as a legal entity, but still is relatively powerless vis-a-vis major outside agencies and corporations on which it depends for its livelihood. The residents are still predominantly transient, and have relatively shallow connections to the community itself, though the proportion of families and children has continued to rise gradually. Much of the transience results from the fact that there continues to be a dearth of land available for private purchase and development. The next decade will see Cold Bay forced to resolve some serious and pressing problems, including the takeover and operation of utilities and services now provided by outside agencies, the continuing quest for private land and for the permanency and sense of community which would accompany it, and coping with the possibility of expanded oil-related or fisheries-related developments in the region. At the same time there are serious problems to be confronted economically with the scheduled retrenchment of several of the major employers in town. We will consider the most likely scenarios for the future at the conclusion of this ethnographic report.

1.3 Extrasocietal Forces

Extrasocietal forces are those sociocultural elements located outside Cold Bay itself which play a significant role in local community life. Cold Bay is remarkable in the degree to which it is implicated with such external forces; extrasocietal forces play an unusually large role in Cold Bay.

There are three kinds of extrasocietal influence on the community. First is the presence of large state and federal government contingents. Second is the presence of a large external commercial sector. Third is the influence of an external sociocultural system, including outside values, technology, and behavioral patterns. The community, as a transportation and communications center for the entire peninsula/insular region surrounding it, is dominated by external agencies and companies

at the expense of local entrepreneurial activity. In this section we will briefly note these external forces, and in the following section on Cold Bay structure we will detail their operation at the local level.

1.3.1 External Governmental Agencies

External governmental agencies are prominent in Cold Bay. The community originated as a federal military site, and the federal government has continued to maintain a major presence in the town, both civilian and military. State government, since the entrance of Alaska into the union, has also played a major role locally. Currently total governmental employment has been outstripped by private employment, but both the federal and state governments remain major employers and play a large role in local life.

The federal government represents two-thirds of the governmental sector in Cold Bay, with twice as many employees as the state (a situation which, as we will see in our discussion of Cold Bay Structure, is currently changing). Several federal agencies are represented in Cold Bay. The Federal Aviation Administration, which has been in town from the 1950s is concerned particularly with the operation of the control tower and navigational facilities of the Cold Bay Airport. The Fish and Wildlife Service of the Department of the Interior has been in town from 1948 and is concerned with the management of the Izembek National Wildlife Refuge and portions of two other refuges (the Unimak Island Unit of the Aleutian Islands National Wildlife Refuge and the Pavlof Unit of the Alaskan Peninsula Refuge). Other federal agencies represented in town are the Post Office, and the Air Force. Air Force personnel are located at the Cold Bay Air Force Station approximately eleven miles northwest of town on Grant Point on the edge of Izembek Lagoon and the Bering Sea.

There is no other federal presence in Cold Bay. There are no local BIA representatives as the Cold Bay population is almost exclusively non-Native. With the transfer in 1980 of a tract of land across Trout Creek from the BLM to the Fish and Wildlife Service the BLM relinquished control of any major portions of land in the immediate vicinity of Cold Bay, so there is no longer any BLM involvement in the community. Finally, since there is no unemployment in Cold Bay (for reasons discussed in detail below) there is no activity on the part of federal welfare or job training programs such as AFDC, Old Age Assistance, Aid to the Permanently Disabled or CETA (Public Assistance Recipient and Expenditures Study, 1981).

The State of Alaska is the second major governmental presence in Cold Bay. It is spearheaded by the Department of Transportation and Public Facilities which is in control of the vast majority of land in the town. The town is quite literally the airport, and the DOT, as the agent responsible for the airport, is responsible for most of the town as well. Also included under state organizations are the Department of Fish and Game. Fish and Game is responsible for overseeing commercial and subsistence fishery resources, notably salmon and crab. A final state representative in town is the single magistrate.

Although Cold Bay is heavily influenced by outside governmental agen-

cies, many of the legislative impacts felt by the rest of the region have gone almost unnoticed in Cold Bay. This is because the population of Cold Bay is non-Native and almost exclusively transient, consisting of people from outside the region who are not permanent residents. The Alaska Native Claims Settlement Act, which radically altered the political and economic power structure of most of the region through putting a huge amount of land into the hands of Natives, had little effect in Cold Bay. None of the residents of Cold Bay have claimed land under the provisions of ANCSA, and there is no Cold Bay Native Corporation. However, ANCSA has had impact as a result of the claims of the King Cove Native Corporation of a significant portion of land within the Cold Bay city limits (see the history section for a full discussion of this).

A second legislative act with major region-wide impact has been the Limited Entry Act of 1973 which restricted salmon fishing to those able to qualify for a limited entry permit. The absence of a fishing sector in the Cold Bay economy means that entry limitation has had no direct impact on the local economy or lifestyle. No one in Cold Bay has a limited entry permit. Nor does Cold Bay have docking or protected anchorage facilities, further retarding development of a fishing sector (again, see the history section for a full discussion of this situation).

Cold Bay is also relatively uninvolved with regional level political organizations. Again, this is a result of the lack of a Native sector in the Cold Bay population, as most of the regional political organizations are Native-oriented and sprang from the legislative acts of the early seventies noted above. Just as there is no local Native corporation or association, there is no involvement on the part of Cold Bay residents in region-wide Native corporations or associations. The only local impact of regional Native corporations has been the intermittent presence of the 13th Regional Corporation, a major local landowner. The 13th Regional Corporation attempted to inaugurate a fish processing sector in Cold Bay, but was unsuccessful (this attempt is discussed at length in the history section).

1.3.2 External Commercial Influences

Though the governmental presence has dwindled in Cold Bay over the last decade, the community remains firmly in the grip of outside forces. Outside commercial corporations have usurped the role once filled by governmental employment. Currently these private corporations account for nearly two-thirds of Cold Bay employment, and they exert a tremendous amount of influence locally (especially given the near total absence of a local entrepreneurial sector). These private corporations have undermined the position held by external governmental agencies in the first two decades of the town's existence and are now the dominant forces in the Cold Bay economy. The structure of the private sector of the Cold Bay economy is very different from that of the surrounding communities.

1.3.2.1 Fisheries

Cold Bay, unlike almost every other village or town in the region, has an underdeveloped fisheries sector. There have been attempts in the past to develop this part of the economy, but thus far they have been unsuccessful. The only forms of fisheries activity in Cold Bay are modest. Seawest runs a small operation in which salmon eggs are shipped to Cold Bay from Nelson Lagoon (from the processor the Western Sea, which processes salmon for Seawest). Once the eggs are in Cold Bay Seawest packages and distributes them to Japan, Anchorage, or Seattle. The only other fisheries-related operation in town is the Northern Peninsula Fisheries (Winky's), which operates in a building on the parking apron of the longer of the two runways. Northern Peninsula also transships salmon from the northern side of the peninsula. The salmon is processed in Cold Bay and shipped out to Seattle or Anchorage. Both of these operations are small scale in comparison with fisheries activity in other villages or towns in the region.

1.3.2.2 Cash Economy

The Cold Bay economy is unusual in its total dependence on a cash economy at the expense of subsistence activity. It is also unusual in that this cash economy is totally dependent on outside sources, with very little local entrepreneurial activity. Since there is no local economic activity, and the town is under the control of major outside firms and agencies, all consumer goods and services come into the town via air and/or sea and are carried by outside-based carriers. Also some individuals gain needed subsistence items through a government or company catalogue. Unlike other communities in the area, Cold Bay is totally dependent on links to the outside for survival. The residents of other communities on the peninsula and in the Aleutian Islands are more accustomed to exploiting the environment for some, much if needed, of their needs, but this is not the case in Cold Bay.

A part of the cash economy is the tax structure to which local inhabitants are subject. Cold Bay residents, as all Alaskans, pay no state taxes. They do pay federal taxes, the most important of which is income tax. The city (as a result of incorporation in January 1982) has the right to levy both property and sales taxes. At present sentiment is running strongly against such a move, but it is possible, as we will see in our discussion of Cold Bay economic and political structure, that the city may ultimately be forced into such a move as a means of revenue generation.

1.3.2.3 Transportation and Communications

The transportation and communications sectors of the Cold Bay economy are central to the economic structure of the community. Cold Bay is both the transportation and communications hub of the entire region and is dominated in those sectors by major outside firms. The raison d'etre for these sectors is the Cold Bay airport, the only IFR (Instrument Flight Rules) facility in the entire region.

The major private transportation firms in town are Reeve Aleutian Airways and Peninsula Airlines. Both are outside-based corporations.

Reeve is by far the larger, and operates the air terminal as well as flights into and out of Cold Bay six days a week (every day except Sunday). Peninsula serves as a feeder route for Reeve and takes Reeve passengers from Cold Bay to the smaller villages and towns in the area. Peninsula and Reeve also transport the U.S. mail for the entire region, with much the same route allocations as for passengers. Reeve flies routes among Cold Bay, Anchorage, Seattle, the Pribilofs as well as along the Aleutian chain.

The major communications firms are RCA, Alascom, and the Interior Telephone Company. RCA is by far the largest of the three, accounting for approximately 90% of all communications jobs. RCA operates at the Grant Point Air Force Base and maintains and operates the Distant Early Warning Station there. At one time RCA owned Alascom, which is responsible for bringing satellite television broadcasts into the community, but two years ago the subsidiary was sold to a Washington State-based utility. Alascom operates a satellite receiving dish and maintains transmission cables within the community. The Interior Telephone Company has only one local representative (a part time worker) and provides telephone service, including satellite service, to the residents of Cold Bay.

1.3.2.4 Private Development

Although there are several large, privately owned external firms in Cold Bay, particularly transportation and communications firms, the amount of private development in town is restricted. Much of this can be ascribed to the monopolization of land by the State of Alaska. Since the state owns nearly all the land in town (since the town is located on airport property) most property is leased and there is little incentive for major development, since it is impossible for a private citizen or a corporation to gain title.

This lack of private development has not been complete. There have been incipient oil-related developments already, and ARCO has a support facility designed to backup the exploratory oil rig in the Bering Sea. This is on land leased from the Thirteenth Regional Corporation, (discussed above) following their abortive attempt to establish a fish processing capability in Cold Bay. As of the latest report Exxon is also interested in establishing such a support facility in Cold Bay. Cold Bay has been a staging area for many companies involved in the initial phases of exploration such as mapping and the setting up of navigational aids (companies such as Marinav, NSI, Western Geophysical and others). However, despite these indications of possible future impact from oil-related development, the town has seen little real economic or social impact from these activities.

Much of the reason for the lack of private development, as we have frequently noted, is the lack of available private land. We have covered the history of land utilization in detail in the history section, and noted that the situation remained critical even following the 1979 land sale. Paradoxically the 1979 land sale, which "should" have opened up some of Cold Bay to private development, worked against commercial development. This is because most of the land was purchased as a specu-

lative investment, rather than for immediate commercial development. Thus, the only privately held land in the entire community is being held out of the commercial sector in anticipation of returns in the more distant future.

Though private development has been stunted in Cold Bay through the lack of private land, there has been some development. The most substantial investment has been by the Flying Tigers Lines (FTL), which holds an exclusive twenty-five year lease from the State of Alaska for the operation of, among other things, a hotel, bar, restaurant, and store. FTL also has a substantial investment in trailers and living quarters for its employees. This latter, living quarters for employees, is one investment shared by all major Cold Bay employers. However, beyond these living quarters most employers have only modest investments at best. The other exception to this, along with FTL, is Reeve Aleutian which has a substantial investment in aircraft and ground support facilities. Nonetheless, Reeve, just as FTL and all other private corporations in town, does not own land but leases it from the State of Alaska. This lack of substantial local investment by outside firms which, nonetheless, control the local economy means it is possible for these corporations to leave town if necessary without being concerned over major losses in local investments. This may, in some instances, be seen as a weakness in the Cold Bay economic structure.

This lack of available private land, and the resultant low level of private investment is reflected in a low level of local construction activity. Cold Bay changes slowly, and there has rarely been a period of major construction which has not resulted from military necessity, and most such construction has been temporary in nature. However, though construction is usually inactive, it does seem to have accelerated somewhat in the last year. The powerhouse, destroyed in a fire on Easter Day 1982, is being reconstructed, and will consist, on completion, of three small, separate buildings, each of which will house a single generator. The clinic has just been constructed (September, 1982) at an estimated cost of \$297,000, which included an attached generator room and septic system (RoyCo cost statement, 1982). This was a major construction project, carried out by RoyCo, Incorporated, of Anchorage, and at times employed as many as ten or twelve men at the site, and probably double that through the entire period of construction. ARCO has carried out some construction in providing facilities for its workers, though this consisted mainly of moving trailers onto the land for living space and construction of a large garage and recreational building.

Finally, there are plans for a new multi-purpose room which will be added onto the school, and we have noted the plans of two residents to construct a new hangar on the airport apron. Construction of the multi-purpose room is scheduled for the spring of 1983 and should be completed by fall of 1983. The implications of this new community facility are significant as far as social cohesion and interaction are concerned and are discussed in the scenarios following this ethnography.

1.3.3 Cold Bay and the Larger Sociocultural System

A third aspect of extrasocietal forces is the encompassing sociocultural system and the relationship of the local system to it. Cold Bay is a centrifugal community. That is, the residents of Cold Bay are much more interconnected with the larger sociocultural system of Alaska, the United States, and the western world than are residents in other towns in the region. The transience of the residents in the community ensures that these connections will remain strong and, in most cases, dominant considerations. This means that the members of the community share the value and cultural system of the Euro-American population of the lower-48 states which sets them apart from the rest of the communities in this region of Alaska.

1.3.3.1 Values

The value system of Cold Bay residents results from the familiarity of the residents with the larger Euro-American value system as well as from the somewhat difficult circumstances of life in rural Alaska. There are six major aspects which constitute the value system of Cold Bay residents. The first follows from the fact that the community is made up of Anglos rather than Aleuts or Eskimos, with attendant implications for the nature of the value system. Second, there is an emphasis on a cash economy in which worth is measured instrumentally with emphasis on achieved rather than ascribed position. Third, there is an element of what might be called the "frontier ethic" in which an admittedly difficult and remote environment is challenged by the individual in the belief that there is a possibility of future gain sufficient to justify current privations. Fourth, this period of privation is only temporary—that is, most of the people in Cold Bay are transient so there is a distinct lack of an intense "moral community" which we are accustomed to associating with small towns or villages ("moral community" is used here in the sense of a dense overlapping of social, economic, political and religious roles characteristic of multiplex societies as opposed to the instrumentality of many relations in a simplex or complex industrial society, e.g., and is certainly not intended to imply that the residents of Cold Bay are not "moral" — they are, but they are not controlled by the strictures of an intensely integrated community). Fifth, and connected to point four, the community is oriented externally, which is to say that, for several reasons, social networks and value systems tend to be centrifugal rather than centripetal. Cold Bay is a means to an end and not an end in itself, and the inhabitants move through the community with startling rapidity when compared to what has been seen as the archetype of the small town. Sixth, the domination of the community by males, particularly single males, has led to the extreme development of a male-centered ethic, with an emphasis on what are seen, within the Euro-American culture, as fundamentally masculine values.

The first point is the domination of the community by Euro-Americans, that is by members of the dominant group of the larger national community of which Cold Bay is a part. This has led to the development of an essentially imported value system in the community which owes more to modern American standards and values than to traditional Aleut values

which inform most communities in the region. The sociocultural system of the larger state and national systems is shared by Cold Bay. Thus there is an emphasis on individualism at the expense of group goals and action, the desire for individual control and acquisition of property and goods, and a commitment to "success" as measured through essentially instrumental means.

Connected with this imported value system is a commitment to the free enterprise cash economic system. It is through this system that the instrumental success of the individual is measured. The central belief here is the assumption that for a given amount of labor the individual has the right to expect an agreed on financial return, and connected with this is the belief that the inhospitable environment of Cold Bay demands a higher return than would similar work in a less removed and more benign environment. Reciprocity is not generalized or based on primarily moral considerations, but is balanced and explicitly instrumental. As a result of these factors the emphasis is on achieved position rather than ascribed or inherited position, and on bettering that position in ways which are measured more materially than morally.

Third, Cold Bay inhabitants share certain aspects of a frontier ethic. The town is overwhelmingly male. Virtually all the inhabitants of the community come from outside the area and are in Cold Bay for only a relatively brief and fixed period of time. There is a strong sense of independence and self-reliance. There is a feeling of challenging a difficult environment which is fundamentally different from the modern, often urban, environment which has been left behind. Connected with this is an emphasis on physical prowess and self-sufficiency rather than dependence on others for the provision of services in particular. Almost everyone in Cold Bay maintains and repairs their housing, vehicles, and other technological devices rather than depend on often non-existent technicians or repairmen.

Connected with this frontier ethic is the belief on the part of the vast bulk of the population that their sojourn in Cold Bay is only temporary, and that they are not committed to a permanent stay in the community. Most people are sent to Cold Bay by their employers, and most see it as an opportunity to make and save substantial sums of money for the future. Moreover, the benefits of a stay in Cold Bay are expected to be enjoyed not in Cold Bay but somewhere else in Alaska or, more often, in the lower forty-eight. The most important result of this is the lack of commitment to Cold Bay itself, with the result that there is little civic spirit or sense of community. Again, the community shares little of the sense of an intense moral community which we are used to associating with small towns.

Also connected to the fact that the members of the Cold Bay community are essentially transient and lack commitment to Cold Bay per se is the external orientation of the community (again, the lack of commitment to the community should not be interpreted as a complete lack of concern about what goes on in the community. Cold Bay residents are concerned about their community, nonetheless, they see their stay primarily as temporary and are therefore understandably less concerned about long term development in the community than would be the case if they were permanent residents). Cold Bay is a quintessentially centrifugal comm-

unity. It is made up of people who as often as not have more intense, long-lasting, and strong social connections to people outside the community than they do to those within the community. This is also a result of the transient nature of the community which has resulted in an unusual situation in which there are no kinship relations among the members of the community. Kinship is traditionally the informing matrix through which social relations in small scale communities are ordered, but in Cold Bay there are no operative kinship relations beyond the nuclear family. Any kinship relations which exist link members of the community and people outside the community, again serving to weaken the multiplex nature of social relations and, by extension, the sense of community itself.

Finally, most of the factors noted above are also influenced by the male orientation of the community. Adult men outnumber adult women by a ratio of almost three to one (2.85 to 1, and for adults aged 20 to 44 the ratio is a very high 3.57 to 1). This heightens the emphasis on physical prowess and reinforces the sense of a frontier ethic in which the individual submits to a difficult and trying environment in the hopes of future returns which are to be enjoyed outside of Cold Bay—when the individual returns "home."

1.3.3.2 Technology

The outer-directedness of Cold Bay is a two way process. The people of the town are intimately connected to areas greatly removed from the region and the state, but at the same time they have all the conveniences and technology of that wider society. The town is technologically remarkably sophisticated. Cold Bay has a highly developed technological infrastructure which owes its origin to the connections of the community with the western-oriented external environment.

The community is in close transportation and communication touch with the rest of the state and nation. The airport assures rapid connection with Anchorage, Seattle, California and points even further removed. Its status as a major communications center assures instantaneous contact with much of the world, and its citizens almost universally have televisions and telephones with satellite hookups, modern videotape equipment, automobiles, and so on. Technology extends to the workplace as well, and the latest electronic and navigational equipment is used by many of the town's workers. RCA workers maintain sophisticated radar and other electronic equipment. RCA and the FAA are both in the process of converting all their operations to solid state equipment which will allow the remote control of nearly all functions at their respective facilities. Technologically, Cold Bay is much more advanced than most towns of comparable size in the lower forty eight.

Cold Bay owes this advanced technological position to its domination by outside corporations and government agencies. This externally imposed economic system, based on a wage labor capitalist structure, is very different from the traditional subsistence system which is still strong in many of the surrounding villages. The economic forces in the community are national or international in scope, with little ultimate concern for Cold Bay itself. Cold Bay is economically viable only as long as

the return from activities there aids in the achievement of goals defined apart from the community itself.

Thus the economic position of Cold Bay is one of total dependence. The city has no control over these large outside organizations, and there is no commercial sector committed to Cold Bay as a home base. There is no local entrepreneurial sector, primarily because there is no land available which can be purchased and developed.

The intimacy of the connections between Cold Bay and the outside nation and world, not the least of which is the rapid turnover in residents and company personnel, means that the town can depend on outside sources for consumer goods to an unusual extent. The airport, and the visits by Alaska state ferries, gives access to a great variety of consumer goods. The single retail outlet in town, on which most people depend for the majority of their consumer goods, is stocked with the same items one would find in the corner store in a large city. Unlike other communities in the region, there is little exploitation of subsistence resources, making the residents that much more dependent on consumer goods.

1.4 Intrasocietal Forces

The environment of the residents of Cold Bay is not restricted to ecological and extrasocietal influences. Environment should be seen as those aspects of existence which must be taken, at least in the medium term, as given. This includes external agencies, the physical environment, and other outside forces, but also includes those aspects of Cold Bay itself which constrain and direct local activity. Intrasocietal forces are these local aspects, including community facilities and capabilities, private development, and demographic characteristics, which establish limits within which local action takes place.

Cold Bay is interesting from the standpoint of intrasocietal forces for several reasons. First, it has some difficult problems to be worked out concerning capacities and jurisdictions of several of the community facilities and utilities. Second, there is remarkably little private development, largely because of the paucity of available private land. Finally, the community presents a unique picture demographically with a very young population, heavily slanted toward single males, and with an absence of a significant Native population.

1.4.1 Facilities and Capacities

The facilities and capacities, or infrastructure, of a community form the basic template of capabilities at any one time. The infrastructure does not direct the future development of an area, but it constrains the direction and speed of change. In Cold Bay the infrastructure has developed unevenly. There are some capacities adequate for current needs and future growth in demand, but there are more which promise difficulty in the future, even some which are inadequate at present.

In Cold Bay, since the town was unincorporated until January 1982, the

historical pattern has been for major outside employers, notably the governmental sector, to provide the bulk of the utilities and maintenance for the road and communications networks. This remains the case today despite incorporation, but it is a situation which the providers of the services would like to see end. The future of Cold Bay will entail a choice. If growth comes to the community either the basic publicly maintained infrastructure will have to be expanded, the corporations and agencies which move into Cold Bay will have to provide their own services and utilities, or the city will have to take responsibility itself.

Cold Bay is at a crossroads with respect to community facilities. The electrical and telephone systems appear adequate for future growth while the water and sewage systems are in need of expansion. The area is well situated with respect to air transport, but lacks a significant water transport capacity. There are five major areas of community facilities/capacities which we will address here. These are the electricity system, the sewage system, the water system, the telephone system, fuel cost and transport, and transportation. At the conclusion of this section we will make a brief needs assessment for Cold Bay.

The electrical system is one area in which Cold Bay appears well situated for the future, due to a disastrous fire which led to the replacement of the old system with a new one of greater capacity. This fire, on Easter morning of 1982, completely destroyed four generators and has led to the total replacement of the power plant.

Cold Bay's electrical needs are filled by a powerplant operated by a private company, the Northern Power Company. The company operates generators which run on diesel fuel in a central location in the built up section of town. The fire destroyed all but an emergency generator and left the town with only emergency power. Before the fire the community was served by four generators, two of 600 kilowatts each, one of 400 kw, and one of 100 kw, for a total generating capacity of 1700 kw (although, in fact, since the company does not have the equipment to parallel generators of unequal capacity, the most power which could have been delivered simultaneously was 1200 kilowatts from the two 600 kw generators operating together). Since the fire the town has survived on an emergency generator with a capacity of 550 kw, which is sufficient for all the town's needs (as a rule summer demand rarely exceeds 350 kw, and even during peak winter periods demand is only 600 kw, only slightly more than the single generator can deliver.)

The company is currently involved in construction of a new powerplant. This will consist of three separate small buildings, each of which will contain a generator. Two will be rated at 800 kw each, and one will be rated at 600 kw, for a total capacity of 2200 kw (again, since it has no capacity for paralleling generators of unequal capacities, the company can only deliver 1600 kw, so actual power which can be delivered has increased from 1200 kw to 1600 kw, or by 33%). This is far beyond the current needs of the community and should be adequate for future needs, even in the event of significant growth. However, even though the power capacity of the system has been, and promises again to be, in excess of demand, there have been frequent interruptions of service varying from a few minutes to several hours. This has been particularly frequent since

the fire reduced capacity drastically. Local citizens have attempted to communicate their dissatisfaction to the Northern Power Company, but with, according to them, little success. The situation is currently under investigation by the Alaska Public Utility Commission.

There are several private generators in town, most rated at only a few kilowatts. One exception is the ARCO electrical system, which is completely self-contained and is located on the property leased by ARCO from the Thirteenth Regional Corporation. ARCO has two generators, one rated at 50 kilowatts and one at 75 kilowatts. Other private generators are owned by individuals, and the FAA has an emergency generator to take over operation of most of the crucial aspects of the airport in the event of power failure. Plans also call for the new clinic to have an emergency generator.

The electrical system is a fairly bright spot for Cold Bay. Interestingly, it is one major utility operated with private capital and it is in the best shape to cope with future demand, if the company can eliminate the problems of service interruption. We will see that those community facilities operated by government agencies pose the greatest problems for the future, while those run by private companies (such as the electrical and telephone systems) are in the best position to accommodate future demand. An example of the former is the sewage system.

The sewage system has already generated concern in Cold Bay. Both because of questions over who should operate it and problems of capacity this system will demand serious attention in the near future. The sewage system which serves almost all of Cold Bay is owned and operated by the Federal Aviation Administration. At some time in the future the city will be forced to take over its operation. The system consists of a town-wide pipe system which delivers sewage to a 22,500 gallon holding tank where the sewage is aerated and chlorinated preparatory to its expulsion into Cold Bay itself.

The system is already overloaded, with the facility asked to process 30,000 or more gallons per day when its capacity is only 22,500 gallons. Thus, the system is in need of expansion now, and will need further expansion if moderate growth occurs. A second problem is that the system is operated by the FAA, which is currently undergoing cutbacks in Cold Bay and hopes to divest itself of responsibility for sewer service. This has been given impetus by the recent incorporation of the town as a second class city. There is now an alternative legal entity which can take responsibility for provision of basic services in Cold Bay.

Part of the problem in transferring the system from FAA to municipal control is that it currently falls short of Environmental Protection Agency standards, largely due to the overdemand on the system. The city and the FAA are currently involved in a discussion as to responsibility for bringing the system up to standard with the city wanting the FAA to do it before they transfer control and the FAA unclear as yet as to what its responsibilities are.

There are several privately owned cesspools in Cold Bay, including a large one at Winky's (Northern Peninsula Fisheries), one of a thousand gallons planned for the clinic currently under construction, and one at

the ARCO facility, as well as at least two built by people on land purchased in the 1979 land sale.

The water system exhibits the same problems as the sewage system. The Cold Bay community water system is owned and operated by the Federal Aviation Administration. It consists of two wells which pump water to four storage tanks. Two of the tanks, with a capacity of 15,000 gallons each, are used for drinking water and two, with a capacity of 25,000 gallons each, are held in reserve for fire fighting. The FAA also maintains a delivery system consisting of a pipeline serving the whole of the built-up portion of Cold Bay as well as much of the outlying area.

The water system is now operating at capacity, and is often strained beyond capacity. It needs to be expanded, and at the same time the FAA would like to relinquish responsibility to the city. The incorporation of Cold Bay in conjunction with the scheduled FAA cutbacks, encouraged the FAA to begin negotiations with the city to switch control. As yet none of these negotiations are formal, but all concerned are aware of the process which is now underway.

There has been, in the last year, a sudden growth in the number of private wells in Cold Bay. The most significant reason has been the presence of a well digger for that period. He came originally in 1981 to dig a well for the 13th Regional Corporation on land which later became the ARCO property where the well is still in use. With the land sale of 1979 the digger found ample work, and in the last year he has dug at least ten wells, about half for private individuals and half for companies. He is now digging one for a projected hangar on the airport apron and has already contracted to dig one for the clinic after that. In some ways, then, the community seems to have recognized the handwriting on the wall and begun to prepare for the future on an individual basis rather than trusting to the abilities of the central system.

Contrasting with the water and sewage systems is the telephone and communications system. Given the small size of the town and the fact that many villages and small towns in this, and other, regions of Alaska are dependent on a single village telephone the communications system in Cold Bay is surprisingly modern. The telephone system is adequate for present needs and has capacity for expansion. This system, as well as the electrical system, is run by a private company and is in better condition than the government-run utilities.

Cold Bay has a telephone system which provides service to individual homes in the community. It is operated by the Interior Telephone Company. There are currently approximately 125 subscribers to the service in town. The system has the capacity for satellite hookup for long distance calls. The system has room for expansion and can handle approximately 400 lines, so it can accommodate at least three to four times as many users as it has currently. One problem, however, is service. Locals complain of loud noises on the lines at times, and have difficulty in getting repairs. The only local individual working for the company quit recently and for a time there has been no representative of the company in town.

There are two pay telephones in Cold Bay. One is in the Flying Tigers Lounge, and one in the Reeve Aleutian Airways terminal. Both are connected to the Alascom satellite system and can be used for both local and long distance calls.

Fuel supply and transport are crucial aspects of community capabilities. Fuel is readily available in Cold Bay, since it is a major transportation link for the region. Cold Bay has two kinds of fuel available, gasoline and diesel. Gasoline is used predominantly for automobiles and other motor vehicles, while diesel is used for generators, including the power plant, and heating systems. Both gasoline and diesel are provided by the Chevron facility located on the edge of the airstrip near the Reeve terminal. At the time of the fieldwork in the summer of 1982 the cost of fuel was approximately \$1.35 a gallon for diesel and \$1.46 a gallon for gasoline.

Fuel is brought into Cold Bay by both air and water, although the former is a relatively expensive means of transport. Once in town the fuel is stored in several large tanks. The largest complex of storage tanks is across the street from the Reeve Terminal which includes one tank with a capacity of more than 2 1/2 million gallons, owned by Chevron, one with a capacity of 500,000 gallons, and several with capacities ranging from 40,000 to 167,000 gallons, all owned by Reeve. Each of the major companies in town also has storage facilities for their own supplies which are usually purchased from Reeve. The largest of these private complexes is near the ARCO property and includes eleven 25,000 gallon tanks and two which hold approximately 300,000 gallons each.

Fuel is delivered in town by tanker trucks owned by Reeve. One truck is used to deliver gasoline and one is used exclusively for diesel. Individuals contract with Reeve to have diesel delivered, particularly for their furnaces, almost all of which run on diesel fuel.

Transportation is an area of community facilities in which Cold Bay is both well and poorly situated. The town has a population of under 250, yet it has an international class airport with sophisticated electronic navigational and control equipment. This region of Alaska depends particularly on air transport, as well as on boat transport. Cold Bay is very well situated with respect to the former, and poorly situated with respect to the latter.

Cold Bay has the largest and most modern airport in the region. It consists of two strips. The main strip is 10,400 feet long and the crosswind strip is approximately 5,200 feet long. Both are asphalt and concrete paved. It was originally constructed in World War Two as a part of Fort Randall, a strategic base in the battle with the Japanese for control of the Aleutians (see the history section). The airport itself is the only truly instrument controlled airfield in the region (almost every other airport in the region is dirt and operates on visual flight rules). It is rated at 200 feet at half a mile (that is, the pilot can depend on instruments until he is only 200 feet high and a half mile from the airport, and only if he is unable to see the airstrip then does he have to abort the landing), and is almost never closed by weather. In 1981 the facility was open, despite at times brutal Alaskan winter weather, every day of the year but one. The one day when the

facility was forced to close was not a result of the inability of aircraft to land, but resulted from a powerful wind which kept blowing snow into the nozzles of the fuel hoses, preventing refueling and necessitating the cancellation of scheduled landings.

The airport is adequate to meet any increased demands in the future. Indeed, it is the quintessential strength of Cold Bay. It is the reason for the community's existence, it is the reason the community is being considered as a staging point for oil development, and it will in all probability be the reason for the community's continued existence. Even though certain employers are cutting back operations in Cold Bay the presence of the airport will insure the continuation of at least a minimal community.

One problem the airport faces concerns jurisdiction. The facility is run by the Department of Transportation, which maintains the airstrips and does most of the repair work. Recently the Cold Bay City Council asked the state for a conveyance of some state land and the state replied it would be happy to do so, but it was all or nothing. This meant the City would have been left with responsibility for the airport and dock (see below) as well, an intolerable burden for a town of just over 200 people. Once the City made its concerns known, the state withdrew its offer. The City is considering a counter offer in which they agree to take some land now, the airport in two to three years, and, later, the dock, also run by the state. In this way the city could come gradually to control the major transportation facilities in town without attempting to assume the burden of all of them at once.

The major air transporter serving Cold Bay is Reeve Aleutian Airways with flights into town six days a week (every day but Sunday). Peninsula Airlines also flies out of Cold Bay serving the smaller villages in the region not served by Reeve. In fact Peninsula has a contract to carry passengers from Reeve flights who wish to continue on to towns not served by Reeve, as well as contracts to carry U.S. mail to those towns. Occasionally an Alaska Airlines or United States Air Force flight uses Cold Bay as a refueling stop.

The airport is maintained jointly by the Federal Aviation Administration and the State of Alaska Department of Transportation. The FAA is responsible for the operation of the navigation equipment, navigation aids, and the control tower. The DOT has responsibility for the maintenance of the airstrip itself and the apron areas adjacent to the air-strip.

Another aspect of transportation is land transport, which is dependent on a system of roads. As in most of rural Alaska, the regional road system is totally undeveloped, and roads exist only within the community and for a few miles out of town. Cold Bay has no road links to any other community in the region. There are approximately forty miles of unpaved road in and around town. The roads in town are gravel, as are most of those surrounding town. The major stretches of road are a section running from town eleven miles to the Air Force Station at Grant Point, and another of approximately seven miles running to Mortenson's Lagoon, a spur of which goes up Russell Creek to the Department of Fish and Game fish hatchery. This road is currently closed as a result of

the collapse of the Russell Creek Bridge. Nonetheless, intrepid local souls still are able to get to Mortenson's Lagoon by crossing a shallow section of the stream just to the south of the ruined bridge. This is generally done only with four wheel drive vehicles or pickup trucks, although with the latter in particular there is a good chance of becoming stuck in the Creek (this was almost a daily occurrence in the summer of 1982 during the red and, later, silver salmon runs). There is also a road running several miles in the direction of Mount Frosty. The only paved section of road in the community is an approximately one mile section running around the eastern perimeter of the airport linking the Reeve Terminal, the hangars, and some businesses and agencies located on the edge of the airstrip itself.

The road system in Cold Bay is maintained by the State of Alaska Department of Transportation which owns the vast majority of land in the community. The federal government maintains the roads in the Izembek Refuge and the military reservation.

A final aspect of community facilities revolves around water transport and harbor facilities. This is an area of weakness for Cold Bay, due to the lack of harbor or small boat anchorage facilities. The lack of any protected anchorage has meant that fishermen from King Cove and more distant points are reluctant to come into the bay and risk being caught by bad weather (particularly high winds which are frequent). This has stunted any possibility of the development of a fisheries sector in the Cold Bay economy.

There is a state owned dock in Cold Bay which was built in 1979. It is 1,824 feet long and 12 feet wide and is operated by the Department of Transportation. The dock has a "T"-section at the end which serves as a docking area for ships calling at Cold Bay, particularly the barges, or replenishment vessels, and ferries which call four or five times a year with supplies. There are also several dolphins along the side of the dock which serve as docking sites for smaller ships, although in general docking facilities are inadequate for a fishing fleet or for use as a major point for shipping. The dock was designed primarily as a fuel unloading pier and is unsatisfactory for general cargo or industrial use. Major upgrading, or an entirely new dock, would be required for such uses. The state charges a docking fee of fifty dollars a day for the first three days and two hundred dollars a day for each day thereafter. The facility has pipeline hookups for the delivery of fuel and water to docked ships.

In general the marine facilities in Cold Bay are sparse and have constrained the development of fisheries-related economic activity. There is no small boat harbor, a necessity if Cold Bay is to attract fishermen to a local processor. As it stands now the nearest safe haven is King Cove, over twenty miles by water. A small boat harbor has been a subject of long-term discussion in the community, and the Army Corps of Engineers considered the feasibility of navigational improvements and the construction of small boat harbors for locations throughout coastal Alaska, one of which was Cold Bay, during the summer of 1982. However, as we noted, the findings with respect to Cold Bay were negative (Army Corps of Engineers, 1982).

Some have suggested that a good compromise would be a breakwater, which Cold Bay also lacks. At least a breakwater would provide a place for boats to anchor sheltered from bad weather. Though this has also been a major topic of discussion it has not progressed beyond discussion. At any event the development of a viable groundfish, crab, or salmon industry in Cold Bay will have to await the construction of some form of haven for fishing boats as well as for the installation of equipment with which to offload the product, neither of which can be projected for the next decade.

This concludes our discussion of community facilities and capabilities. This discussion clarifies some of the needs which Cold Bay has in this area. Cold Bay has only recently become a municipality, and this has meant an increased awareness on the part of residents of the needs and problems of the future. According to conversations with residents in Cold Bay there are several areas of concern.

First, a point we have noted several times, most residents would like to see a small boat harbor constructed in the bay. This would create a sheltered anchorage for boats, particularly fishing boats, and would encourage fishermen from the region to use Cold Bay as an offloading point, encouraging the development of a fish processing industry in the community. The presence of the airport is a strong incentive for such an industry, as it gives local processors the capability to rapidly deliver fresh or fresh frozen salmon or live crab. Alternatively, local residents express an interest in the construction of a breakwater which, while not providing a dock, would at least provide shelter for boats in the case of bad weather. However, as we noted earlier, the negative finding of the Army Corps of Engineers concerning Cold Bay's viability for harbor or navigational improvements has eliminated these possibilities for at least the foreseeable future.

Second, there is a need for expansion of several of the utilities in the community. Most important are the sewage and water systems. Both systems are currently being forced beyond capacity, and have to be expanded considerably in the near future. In addition to expansion, the sewage system must be brought up to Environmental Protection Agency standards.

Finally, there is the problem of jurisdiction. Both the water and sewage systems are under the jurisdiction of the Federal Aviation Administration which is eager to divest itself of responsibility for their operation. The city and the FAA are currently involved in the first, informal stages of discussions aimed at determining who should accept responsibility for both the system and its upgrading. The problem of jurisdiction also involves the state, which operates the airport, the dock, and maintains the roads and provides a firefighting capability.

These three areas together, the need for adequate docking and harbor facilities, the need for expansion/renovation of several community systems, and the problems involved in switching jurisdictions, will be the major problems faced by the municipality in the near future with regard to community facilities/capacities. Their successful resolution would go a long way toward assuring a viable future for Cold Bay, while failure to resolve them could doom the city to stagnation.

Once again, underlying many of these problems is the issue of land and land ownership. Many of these problems would be more amenable to solution if the municipality had some control over land in the city limits. This, too, must be seen as a major need for the immediate future of the community.

1.4.2 Private Development

One of the effects of near total external control of the Cold Bay economy is a lack of private development. Private development is unusual in Cold Bay. The difficulty of getting private land restricts such growth, as does the difficulty of getting housing if not employed by a major local company. Most private development is at the instigation of those outside agencies and is designed for the use of their employees. In this section we will consider several aspects of private development, including housing, private investment, land purchase, and construction.

Almost all housing in Cold Bay is provided by the companies or agencies which operate in the town. Housing can be divided into that provided by the federal government, state government, private companies, and private individuals. Though the housing provided by the government may not be strictly private development, we include it here so an overall picture of local development can be presented.

There are three federal agencies which have constructed housing in Cold Bay: the Federal Aviation Administration, the National Weather Service, and the Fish and Wildlife Service. FAA housing consists of eleven homes located on St. Louis Road to the north of town and on the eastern edge of the longer of the two runways. These are modern woodframe homes with aluminum siding. The National Weather Service housing consists of six homes located to the immediate east of the FAA housing. The Fish and Wildlife Service has five houses (four homes and a bunkhouse) located on a hill apart from the rest of town to the northwest across Baranov Road. Federal military employees, members of the Air Force, are housed together at the Air Force Base eleven miles northwest of town on Grant Point in apartment-like buildings.

There are two state agencies which have constructed housing in Cold Bay: the Department of Transportation and the Department of Fish and Game. The DOT housing is located to the northwest of the NWS and FAA housing, across Baranov Road, and consists of nine homes on Veniaminov Circle. The Fish and Game housing consists of three homes located to the immediate north of the DOT housing near the shore of Cold Bay. All these homes are of modern woodframe construction.

The major private corporations which have constructed housing in Cold Bay are Reeve Aleutian Airways and the Flying Tigers Lines. RAA maintains housing for its employees in two areas. First, there are half a dozen apartments on the second floor of the Reeve Terminal in which predominantly single employees live. Second, there is a Reeve bunkhouse (as well as a separate Reeve mess hall) located across the street from the Flying Tigers Lounge. Most of these individuals are also single. Those of Reeve's employees who are married are, by and large, local

hires which means that they are able to live with their spouses in housing provided by their spouses employer. The Flying Tigers maintain housing as well for their employees in two areas. First, there are several apartments in the Flying Tigers complex which includes the store, bar, and restaurant. Second, there are six trailers, five of which are double-wide mobile homes, in which married couples working for FTL live. These latter are located across the street from the main FTL complex itself. Finally, RCA also has a major contingent in town, but they are located in apartments on the Air Force Base at Grant Point.

There are also several private residences in Cold Bay, although the general absence of private land has restricted the number of these considerably. One permanent resident has constructed a home to the east of town on Baranov Road, and another has moved two trailers onto his land which he has connected and converted into a single building. One other person has moved a trailer onto land directly across Baranov Rd. from the house noted above, and one person has moved an older cabin onto land between this area and the state dock to the east. All of these houses or trailers are on land which was purchased by private individuals in the 1979 land sale.

Finally, there is housing available for those who are merely passing through or who are extremely short term transients (such as construction workers working on the clinic in the summer of 1982). This lodging is run by Flying Tigers and is known as the Flying Tigers Hotel. This consists primarily of two complexes made up of trailers which have been divided into several one room apartments each.

There are no accurate figures concerning the number of residents per housing unit in Cold Bay. However, from an impressionistic standpoint there are several interesting factors which make the community unique for the region. First, there is a disproportionate number of single member households, a result of the nearly three to one male to female ratio in the population, itself a result of the transient and externally-oriented nature of the community. There are correspondingly few children in the community, which also tends to reduce the number of residents per household. It is the researcher's impression that the average number of people per housing unit probably does not exceed two.

Overall, especially given the isolated locale of the community, the construction characteristics of the homes in Cold Bay are good. The vast majority of the housing constructed by government agencies in Cold Bay is woodframe with aluminum siding and central heating which is run on diesel fuel. The trailers used by Flying Tigers, both for company housing and as the hotel, are standard mobile homes with insulated aluminum walls. Most of the housing in Cold Bay is therefore extremely modern and comparable to that to be found in any lower forty-eight suburban housing development or mobile home park. The housing provided by Reeve is old and small, but is still reasonably comfortable. The housing at the Air Force Base is modern and similar to apartments in a major urban area.

Though the housing in Cold Bay is generally of good quality, it is very difficult to find unless it is provided. There is effectively no housing available in Cold Bay unless one is sent there by a government

agency or private corporation. All housing with the exception of the few private dwellings (at present there are only four private homes in all of Cold Bay) is allocated to individuals who work for an employer in town. This means it is impossible for an individual to come into town without a job and find housing. The situation is compounded by the general lack of available private land, which means that the individual is unable to get land on which to build even if he should be interested in doing so. The only place available for an "outsider" to stay is the Flying Tigers Hotel, which consists of several single rooms in some older buildings and some single rooms in a trailers, which rent for the somewhat high rate of forty dollars a night. Even these rooms are generally taken by people who are in town for a short period for a specific task and who have the rooms paid for by their employer, or they are taken by passengers on flights which have been weathered in, usually at the expense of Reeve Aleutian Airways.

All of these factors--the domination of the community from outside, the general lack of available private land, and the occupational control of housing--result in a relatively low level of private investment overall in Cold Bay. Almost all private investment in Cold Bay is in terms of equipment or housing/buildings, rather than land. Since the land is controlled by the state the major private enterprises in town must lease the land on which they operate from the State of Alaska. Thus, Reeve, Flying Tigers, Peninsula, and all other private companies in town are operating on land leased for varying periods of time from the state.

This situation has retarded the development of local entrepreneurial efforts, and the only local business of any consequence is Cold Bay Truck Rentals which, like all other private agencies in town, operates on property leased from the state. There is currently one other local business which is in the process of being formed. This is an airplane hangar which two local residents are constructing and in which they intend to rent out space. If successful, these two should be in business by the summer of 1983.

As we have noted several times, private investment in Cold Bay rarely involves land. The vast majority of the land in Cold Bay remains in state hands. The only exceptions to this are the land on which the Fish and Wildlife offices and houses are located, which is owned by the federal government (the Department of the Interior), and the land sold in the land sale of 1979. The sale in 1979 is the only opportunity the residents of Cold Bay have had to purchase land in the last fifteen years, and resulted in only some half dozen residents actually gaining land, primarily as a result of the inflation of sales prices as a result of outside speculators coming into the community to purchase land on the assumption that it would skyrocket in value if oil development came to the region. The major purchasers in that sale was the Thirteenth Regional Corporation, which had plans for development of the land but has since run into extreme financial difficulties. A portion of their land is now being leased to ARCO, and the rest remains essentially undeveloped.

The fact that the state owns virtually all the land in the developed area of town, and that the majority of the land alienated in the land sale of 1979 was purchased by outside interests with speculative pur-

poses in mind has meant that very little construction or development of that land has occurred. Cold Bay is, to a large extent, on "hold" from the standpoint of construction until it becomes more clear the extent to which oil development will impact on the area.

Nonetheless, there has been some recent construction in town, and there is some planned for the near future. The most important new structure is the clinic which will provide Cold Bay with modern medical care for the first time. This building is now completed (in the Fall of 1982). A few individuals have also recently started or completed private dwellings, among them the magistrate and city council member noted above. Funding from the state has recently been approved for a \$1.3 million multi-purpose room addition to the Cold Bay School, and construction will probably begin on this in the Spring. Finally, as noted above, two residents may soon begin construction of an airplane hangar on the apron to the north of the control tower.

1.4.3 Demographic Structure

The structure of the population of a community should also be seen as part of the input to the system under consideration. This is because the nature of the age, sex, and ethnic distributions in the population must be accepted as a given by the members of the local system in their social, political, and economic activities. In discussing demography we will first come to an appraisal of the current structure of the community. This entails estimates based on 1970 statistics and on the changes which have occurred since then, as that is the most recent complete census of Cold Bay. This will give us a picture of the current demographic structure of Cold Bay. Following this we will discuss the dynamic aspects of demography, particularly the processes of in-migration and out-migration, which are interesting, from a structural standpoint, in the Cold Bay case. In this second section we will be concerned with the processes by which recruitment and replacement of Cold Bay residents occurs in a process of repetitive change.

1.4.3.1 Current Demographic Structure

There has not been a recent complete census of Cold Bay from which we can take the current demographic structure of the community. The 1980 national census provides only a gross estimate of the total aggregate population of Cold Bay. The most recent complete census is that of 1970. The demographic organization of this community is highly significant as far as our present ethnographic study of the community is concerned and will be essential to any future analyst wishing to determine the course of social change in this community. We have therefore gone to considerable effort to determine, by indirect methods, since surveys were prohibited under this contract, this demographic composition. By taking the 1970 census as a starting point and extrapolating on the basis of observations made during the summer of 1982, conversations with residents of the community during that same period, and trends which have been well established during the last decade, we have come to a very close approximation of the current demographic structure of the community. At each step of the way we will be careful to point out the

rationale for making certain assumptions which inform the current estimates.

As noted, the most recent complete census data available are those from 1970. In that census the following general figures emerged:

Table 1

Cold Bay 1970 Population by Sex and Native/Non-Native

Male:	193	Native:	33
Female:	63	Non-Native:	223
Total:		256	

Source: United States Census, 1970.

Several factors should be taken into consideration when assessing these figures. First, nineteen seventy was in the midst of the Viet Nam War and the conflict had swollen the Cold Bay population figures to one of their highest levels ever. In fact, some estimates put the population as high as 280 during the first half of the seventies, just before the war began to deescalate. When we make our own estimates they will be lower than these figures to take into account the drop in population following the cessation of the war and the reduction of activity in Cold Bay which accompanied it.

Second, even the modest number of Natives enumerated in the census of 1970 (33 out of a total of 256, or 12.9% of the total, leaving 87.1% non-native) is now far out of line with reality. In Cold Bay there has never been a large Native population, and even the small number in 1970 were there primarily as a result of the war effort and, from what we gathered through discussions there, most left following the war. Today, as we shall see, there are even fewer Natives.

Third, there have also been changes in the female/male ratio since 1970. In 1970 the majority of the temporary population which swelled those figures to post-World War Two highs were single males, the bulk of whom left following the end of the war. In 1970, 63 of 256 inhabitants were female, or 24.6%, while 193, or 75.4%, were male. Today those figures are much less disparate and females, while a long way from parity, are making a move in that direction.

Following are the 1970 Census figures by sex and age groups:

Table 2

Cold Bay: 1970 Census by Age and Sex

Age:	0-5	5-19	20-44	45-64	65 & Up	Total
Sex:						
Male	8	26	141	18	0	193
Female	10	16	25	12	0	63
Total	18	42	166	30	0	256

Source: United States Census, 1970.

The best and most recent estimates we have for the population of Cold Bay come from the current mayor of the town who estimates the total population at 226. He does not have any further demographic breakdowns of the figures, so we have had to make estimates of our own based on criteria which we will discuss as we present those estimates. We will do this by taking the 1970 figures above as a starting point and estimating the changes which have occurred since then in light of the final 1982 figure of 226 at which we wish to arrive.

The first point to note is that the category which has declined the most, indeed, which has represented without a doubt the vast majority of the decline, has been the male group aged 20 to 44. This is the group of single males who were in Cold Bay in 1970 for the war effort but who subsequently left town following the conclusion of that conflict. Since we are dealing with a decline of thirty people from 1970 to 1982 we suspect that this group alone can account for the bulk of the decline. This is based on the assumption that actually somewhat more than thirty probably left town following the war, perhaps as many as fifty or more, but that some others (some of whom were undoubtedly married, as we will note below) have moved in since, particularly with the opening by the State of Alaska Department of Fish and Game of a fish hatchery on Russell Creek and a modest expansion of the Fish and Wildlife Service overseeing Izembek National Wildlife Refuge. At the same time basic employment, that is the state and federal government and the major private companies, has remained steady (although, as we will see below, this is a situation which has recently begun to change and will change more rapidly in the future). This means, even though individuals and families may have been replaced by other individuals and families, that the number of married couples probably has remained fairly steady or undergone a slight increase, since it is among the long-term transient groups (such as governmental or large corporate employees who serve "tours of duty" in Cold Bay) that we find more married couples actually resident than among the short-term transients or military personnel.

Finally, the permanent population has undergone a slight increase as well, and this argues for a slow increase in the cohort of married couples.

All of this means that the number of females in town is likely to have remained more steady than the number of males, a fact born out in conversations with local residents, particularly with those who have been in Cold Bay for five years or more. Another fact which bears out this observation is the number of children of school age. According to all observers we spoke to in Cold Bay this number has been slowly increasing throughout the last five to ten years. There are currently approximately fifty children who regularly attend the Cold Bay School. Since the Cold Bay School has recently been expanded through twelfth grade, the cohort aged 5 to 19 must number at least fifty, and probably somewhat in excess since most graduate at eighteen, thus eliminating at least the nineteen year olds from consideration. If we assume that these figures are somewhat high (we have been given enrollment figures which vary between forty-five and fifty-two students--in fact the number does vary slightly from season to season) and assign a conservative number of 50 total to the 5-19 year old cohort, then we will have somewhere around 45 children of school age. Of course, this is clearly indicative as well of an increase in the number of families, at least proportionately, in the population, and most likely absolutely as well. If this is so we should also ascribe a proportionately equal increase to the number of children between 0 and 5 years of age, perhaps a few less if we assume that a young infant might be reason to avoid a move to as inhospitable a climate as Cold Bay. Nonetheless, a modest increase would seem to be in order, roughly equal between the sexes as there appears no reason why a family moving there is more likely to bring a female than a male child with them. If we accept these provisional assumptions, then the lower end of our age scale is altered as follows.

Table 3
1970 and 1982 Cold Bay Population Under 19 by Sex

Age:	0-5	5-19	Total
1970			
Male	8	26	34
Female	10	16	26
Total	18	42	60
1982			
Male	10	28	38
Female	12	22	34
Total	22	50	72

Source: United States Census, 1970, and field estimates, 1982

It will be noted that we have allowed for a proportionately greater increase among females aged 5-19 than among males of that age group. The reason for this is that we assume a certain proportion of the males in this age group (particularly the seventeen to nineteen year olds) were not children of families located in Cold Bay, but were directly involved in the work force engaged in the war effort. It makes sense, then, that some of these would have left and that the resultant increase as a result of families moving into Cold Bay for the male group in this cohort would have been slightly less than the increase among females in this age group. It should be noted that these are fairly modest increases in both age groups in absolute numbers, though somewhat greater in percentage terms, and we feel comfortable that these figures are very close to accurate.

If these increases among the younger age groups are accurate, then we must not only account for the absolute drop of thirty people in the population between 1970 and 1982 from among the older age groups, but we must account for the additional increase in the younger groups as well. The two younger cohorts totalled 60 people in 1970, and our revised total for 1982 is 72, or an increase of 12. Thus, we must account for a decrease of at least 42 people from among the upper three age groups, and since there were no people enumerated in the oldest age group (65 and over) in 1970 effectively this means there has been a decline of 42 people from among the two middle age groups, those aged 20 to 44 and those aged 45 to 64.

It is clear for two reasons that the bulk, perhaps all, of the drop in population must have occurred among the males in these two age groups. First, it was the single male group, primarily those aged 20 to 44, but certainly several individuals between the ages of 45 and 64, which would have swollen the population during the VietNam War, the period on which the 1970 Census was based. Second, it is unlikely that the ratio between the number of women between the ages of 20 and 64 and the number of children under 19 has changed appreciably--another way of saying this is that we are unlikely to get an increase in the number of school age and younger children at the same time we get a decrease in the female cohort which would logically contain the mothers of these children. Indeed, it would seem likely that this number would undergo a slight increase, though perhaps not as rapid an increase as that experienced by the cohorts of children. In 1970 the ratio of children (taking of necessity those aged 0 to 19 as the cohort of children) and females between 20 and 64 years of age was 60 to 37, or 1.62 children per female. If we keep this ratio constant for our 1982 estimates we find that for 72 children we should have approximately 44 adult females (44.4). If we are conservative and figure that a greater percentage of women are actually mothers today than in 1970, when at least a small number would have been connected with the war effort, we can say that today we would expect approximately forty adult women in the population of Cold Bay. From what people in the community say we would place this increase of three women exclusively in the 20 to 44 cohort and assume that in- and outmigration have been close to equal in the older, 45 to 64, female cohort, leaving it at a total of 12.

This further increase of three in the female population leaves us with a total decline in population from 1970 to 1982 of 30 people, plus an

increase in the younger age groups of 12, plus an increase in the older female cohort of 3, for a total of 45 less people to account for from among the males in the age groups between 20 and 64. At first this may sound unrealistic, but there are several reasons why we believe it is accurate. First, the figures outlined above for the younger cohorts and the older females are certainly very close to the actual figures - we are convinced of this both by logic and by written and personal reports received in the field. Second, there is no doubt in our minds, or in the minds of those who have been in Cold Bay for longer than most, that there has been a decline in population since 1970 and that the current population is, indeed, extremely close to the figure of 226 which we have been utilizing here. Third, the single male population was almost certainly greatly inflated during the war years, and very few of those individuals have remained in town - in fact the researcher met only two people who were in Cold Bay originally as a result of the war effort and who remain there today, and one of these was a woman. Fourth, the Native population has shrunk drastically since 1970 and is now probably approximately ten people or less. The bulk of these, too, were in all probability males involved either in the war effort or in the fish processing industry, both of which are essentially no longer factors today. Fifth, with the absence of a major military effort the dominant employers in Cold Bay are governmental and private agencies which encourage their workers to be long term transients, provide them housing, aid them in moving both themselves and their families, and so on, leading to the conclusion that the proportion of coresident married couples with children should be a much higher proportion of the total population than was the case in 1970.

For these reasons, surprising as it may seem at first glance, we are inclined to ascribe all of the loss in population from 1970 to 1982, as well as the increases noted for other segments of the population, to the male cohorts aged 20 to 44 and 45 to 64. Sheer numbers demand that the majority of this decrease must have occurred among the younger of these two cohorts. This younger cohort should also have experienced a slightly greater percentage decrease than the older cohort, because there are a couple of people in the older age group who are permanent residents and it is more likely that an individual in the younger cohort would have been connected with the war effort than an individual in the older cohort. For these reasons we have decreased the older cohort from 18 in 1970 to 14 in 1980, a decrease of 22%, and we have assumed a decrease in the younger of the two cohorts from 141 to 100, a decline of 29%.

With these calculations, then, the figures from 1970 and the estimates from 1982 compare as follows:

Table 4

Cold Bay: 1970 and 1982 Population by Age and Sex

Age:	0-5	5-19	20-44	45-64	65-	Total
Sex & Year						
Male						
1970	8	26	141	18	0	193
1982	10	28	100	14	0	152
Female						
1970	10	16	25	12	0	63
1982	12	22	28	12	0	74

Source: United States Census, 1970 and field estimates, 1982

These figures illustrate some interesting demographic trends between 1970 and 1982, trends which, with certain qualifications, are continuing in the current decade. First, the percentage of the population represented by children aged 19 and under has risen from 23.4% of the total to 32% of the total, illustrating the growth of families as an important aspect of Cold Bay society. Women, of course, have also made a dramatic leap forward in the time since 1970. In 1970 they accounted for 63 out of 256 people, or only 24.6% of the total. Today, according to these estimates, they represent 74 out of 226 people, or almost 32% of the total - this is the total for all females. If we consider women over 19, that is adult women, we find the increase has been from 14.4% of the total (37 out of 256) to 17.7% (40 out of 226).

The most significant decline, of course, has been among males in general, and among the cohort aged 20 to 44 in particular. Overall males declined from 75.4% of the total population (193 out of 256) to 67.3% (152 out of 226), or from just over three-quarters of the population to just over two-thirds. The overall sex ratio (expressed as number of males per female) has been altered in favor of females from 3.06 in 1970 to 2.05 in 1982, a dramatic shift though there are still over two males for every female in Cold Bay. Among adult males and females the disparity was, and remains, much greater. In 1970 the ratio of males to females was (for those aged 20 and above) 159 to 37, or 4.30, while this had dropped by 1982 to 114 to 40, or 2.85, still nearly three adult men for every adult woman. Finally, in the crucial category for families, the age cohort between 20 and 44, women made the greatest advances (as a result of the fact that this was the location of the greatest declines

on the part of the males). In 1970 the ratio of men to women stood at 141 to 25, or 5.64 men for every woman, an extremely high figure. By 1982 this had shifted to 100 to 28, or 3.57, a strong advance but still an extreme ratio.

A final point should be made about the changes in the makeup of the population since 1970, a point which has already been touched on but which deserves emphasis. The Native sector of the population has surely declined precipitously. The researcher only encountered five or six Natives in the time he was in the field, and the total is probably not over ten. We note as well that these individuals for the most part do not consider Cold Bay their permanent "home." In discussions with people in the community the researcher never received an estimate of more than a dozen Natives, and usually less than that. Even allowing for the higher of the estimates, this means a decline from 33 in 1970 to approximately 10 in 1982, or a percentage drop of 69.7%. As we explained earlier, it is our belief that most of the Native population in Cold Bay in 1970 was connected with the military and, to a lesser extent, with the fish processing and harvesting sector, and that most of these have left in the intervening period, the bulk of them at the end of the Viet Nam War. The Native population of Cold Bay today is negligible, and those the researcher met are either married to Euro-Americans or appear to have become essentially assimilated to Euro-American culture, so that effectively, from a cultural standpoint, there is no Native population in Cold Bay.

These figures, approximate though they are, clarify some of the important aspects of Cold Bay from a demographic standpoint. There are four points in particular which should be emphasized.

First, a point just made above, is the absence of any noteworthy population of Natives. The Native sector of Cold Bay constitutes, at the most, only 4% of the population (10 out of 226), perhaps less than that (and is not recognized as a distinct social category). This is a result of the origin and growth of Cold Bay as a transportation and communications center dominated by external agencies, in particular external governmental agencies, which have turned the town into a "multi-company town". They have imported their workers, the town was established in an area in which there had been no recorded Native settlement, and the land was arrogated by government agencies at an early point in the town's development. This has also meant that the turmoil of the seventies which has swirled throughout the peninsular-insular region surrounding Cold Bay as a result of such acts as Limited Entry and the Alaska Native Claims Settlement Act has left Cold Bay relatively untouched (although, as we have noted, an outside village has made local claims). Cold Bay has literally been the eye of the hurricane.

Second, the nature of Cold Bay as a government town, and where not government, as a transient town, is clearly illustrated in the sex ratios which still obtain there. The overall sex ratio of men to women of 2.05 is high in itself, but the ratio of adult men to adult women of 2.85 is very high, and the ratio of 3.57 between men and women aged 20 to 44 is extremely high. Clearly Cold Bay is still predominantly a single male town. Largely this is a reflection of the transience of the bulk of the population, as well as of its youth. Although the number of

males, both proportionately and absolutely, has declined considerably between 1970 and 1982 the male cohort aged 20 to 44 still constitutes 100 out of a total of 226 in the population, or 44.2%, a very high figure, and this compared to women in the same age group who constitute only 28 out of 226, or 12.4%. Again, this is very rare for both this region and the state as a whole, even though it is frequently the case that men slightly outnumber women in native villages.

Third, and connected to this second point, there is a very low percentage of families in Cold Bay. Even if we assume that most of the women aged 20 to 64 are married to men living in the community, a guess which is certainly not far off the mark, we find that at best only half the adult population is married (since there are 40 females aged 20 to 64, this would make a total of 80 married people out of a total adult population of 154—in fact, probably slightly less than this number are married). Even if this is the case it means that only one third of the adult males are married. It is true that the ratio of married to unmarried, and the ratio of families to total population, has risen considerably from 1970, but a large part of this increase has to be seen as artificial since the high number of single males in Cold Bay during the Viet Nam War was destined to be purely temporary. However, it is clear that the "stable state" of Cold Bay is still one in which there is a very low percentage of married people.

Finally, all of the above points indicate a more general fact. Cold Bay is, above all, a very young town in terms of the composition of its population. This is in line with the transience of the population, the low percentage of married couples, and the high ratio of males to females. There is no one in town, to the best of the researcher's knowledge, over 65, although there are a couple of permanent residents approaching that age who, if they indeed stay for another five to ten years, will change that picture somewhat. However, even in the age group from 45 to 64 we find surprisingly few people. Of the total population of 226 only 26 are over 45 years of age, a percentage of 11.5%. Among males only 14, or 9.2%, are over 45, an extremely small number. Again, this illustrates that Cold Bay is a working man's town, and that once the work is completed the individual does not stay around for retirement but goes somewhere else to work or, if he is of retirement age, goes somewhere else to retire. Cold Bay is a town of full employment. One does not go there unless a job is already guaranteed, nor does one, at least thus far, retire there.

1.4.3.2 Demographic Dynamics

We have now completed an essentially static picture of Cold Bay demography and have a good idea of the age, sex, ethnic, and social range of the community. This survey of the demographic makeup of the community clarifies the effects on Cold Bay of being a major transportation and communications center. However, there is also a dynamic side to demography, and this is particularly interesting in Cold Bay. In this section we will concentrate on the process of recruitment and replacement which is a hallmark of the community. Cold Bay is in a state of constant flux, but the kind of change which results is repetitive. That is, there is a constant change in personnel, but the structure of occu-

pational and social relationships remains essentially unaltered. In order to understand the way in which this occurs in this section we will detail the processes of in and out-migration. We will also try to set Cold Bay in the context of relations with the surrounding area and more removed parts of the state and country.

Cold Bay has a consistent and steady rate of in-migration. This alone is distinctive for this region of Alaska. Most of the villages and communities in this area of Alaska experience seasonal variations in population, with many residents practicing an essentially transhumant pattern of presence in the village during fishing season and removal to Anchorage or other west coast urban areas during a major portion of the off season. However, in Cold Bay an individual migrates to the town, remains there with only short absences for two to five years, then leaves town, but for good rather than seasonally. One pattern is cyclical, the other lineal.

This pattern of immigration, residence, emigration is a result of the fact that the town is dominated by outside employers, particularly large governmental agencies and private transportation and communications corporations. Most of the companies and agencies therefore send people to Cold Bay for a specific tour of duty, and very few of these people ultimately become permanent residents, preferring rather to leave at the end of their tour than to stay. Other factors, such as seniority, open bidding of positions, promotions, and fixed contracts, also promote frequent turnover. This is further encouraged by the fact that there is simply no private land currently, or, for the most part, historically, available in the community. Thus, even if an individual did desire to stay in Cold Bay he/she would be unable to do so unless they continued to work for an outside agency which provided them with housing. The result is that there is a gradual and steady turnover in population such that the vast bulk of the residents are replaced every five to ten years, with almost no one becoming a truly permanent resident. Another result of this is that though there is a steady in-migration it is almost exactly offset by an equally steady out-migration, so that the size of the town remains relatively unchanged over long periods of time.

The demographic characteristics of Cold Bay in-migration include an unusually young, male, and single population, which is primarily Euro-American. Since Cold Bay is dominated by large outside employers almost everyone in town is brought from areas widely removed from Cold Bay. The result is that virtually all those coming into the community are white and non-Native. Those coming into Cold Bay do not come from the region immediately surrounding the town, but from such areas as Anchorage, Seattle, San Francisco, and other areas widely dispersed throughout the United States. Clearly the corporations and agencies which employ the people of Cold Bay recruit people to live there who are of working age, and just as clearly they are forced to leave should they no longer be of working age. Thus, literally all the men there are of working age and this inclines the mean age toward the younger end of the scale.

The other side of the coin of constant recruitment, and therefore constant immigration, is constant termination of residence in Cold Bay, or emigration. Emigration has historically more or less equalled immigra-

tion, since it is closely keyed to tours of duty served by individuals working for major outside agencies or corporations. Even during time of war when the town was more military site than community, the residents were serving tours of duty and would ultimately leave town for somewhere else.

Those leaving Cold Bay are generally somewhat older than those arriving in town, only because they have, in general, served two to five more years on the job than have those coming into town. Cold Bay is also often one of the first stops for a young man on his way up the management ladder, a place where he can be seasoned for the future. Nonetheless, these are generally young people involved in a process of recruitment, service, and transfer to another area.

As in the case of immigration, the nature of Cold Bay as an outside-dominated transient town means that most of those leaving, as well as those arriving, are Euro-American, with very few Natives or non-Euro-Americans represented. One interesting sidelight of this is the fact that the small Filipino population of Cold Bay has been remarkably steady in residence. Several members of this group have been in town for five years or more, and one has been in town for twelve years and has no intention of leaving.

Most of those leaving Cold Bay, by at least a two to one ratio, are male. In fact, the proportion is probably somewhat higher than this because those who are married tend to have somewhat longer tours of duty in town than do those who are single. This is for several reasons, including the fact that very short term transients tend to be either single or, if married, tend to not have their spouses coresident, those who are married and coresident tend to stay longer because of the additional effort involved in moving a whole family, and so on. As we noted above, many local residents voiced the feeling that even more single men are leaving town while more families are coming into town, thus increasing the ratio of males to females leaving and decreasing the ratio arriving. This should not, however, be overemphasized. Cold Bay has been and remains a strongly male town, both in terms of immigration and emigration.

This pattern of constant recruitment and replacement of the population of Cold Bay, and the distinctive pattern of in and out migration which it produces, is one aspect of Cold Bay structure which gives the community its centrifugal flavor. One result of this centrifugality is an unusual degree of interconnection with the world outside the community itself. Interestingly, Cold Bay residents have closer ties with people in much removed areas than they do with people in the immediate region in which the town is located.

The area surrounding Cold Bay is dominated by ethnic Aleuts and, to a lesser extent, by Eskimos (Supiaq Eskimo). Cold Bay itself is almost totally Euro-American; literally a stronghold of whites in the midst of a nearly totally Native area. These ethnic differences have contributed to the pattern of relations between Cold Bay and the outside world.

Cold Bay residents are very knowledgeable concerning, and experienced in, the wider world. Since they are almost exclusively workers for major

outside corporations or agencies and are hired prior to their arrival in Cold Bay the residents of Cold Bay by definition have extensive experience in the western-dominated society and economy of twentieth century America. For most of the residents of the town the major social networks are oriented outside, both to Alaska and to the rest of the United States. Additionally, most of these people will ultimately return to an area of the state or country widely removed from the area. In a sense the people of Cold Bay are surprisingly cosmopolitan given the size of the community. The fact that they are from such widely removed areas of the state and country means that they are not as intensely implicated in the social networks of the immediate vicinity as are the members of other villages and communities in the region.

In addition to social experience, virtually every person in Cold Bay has worked elsewhere. Almost every person working in Cold Bay was working for the same company before arrival in town, and Cold Bay represents simply another stop in an occupational career which will take the individual to several different locales. Thus, most of the people in Cold Bay have worked in other areas of the state and country, most with some experience in major urban areas as well. This experience is generally of a technical, professional, or white collar nature. Relatively few of those working in Cold Bay will, after leaving town, ever work in another locale in this region of Alaska again.

Visiting and vacation patterns also illustrate the external orientation of most Cold Bay residents. Most of those living in Cold Bay, as noted above, have strong social ties outside the community. This is one of the distinctive features of the Cold Bay social structure, and results largely from the essential transience of the population. This means that vacations and visiting are heavily slanted toward these outside social relations. Additionally, many Cold Bay residents take advantage of the relative proximity of the town to Hawaii to take vacations there, or in even further removed areas of the South Pacific. Visiting with residents of nearby communities, such as King Cove or Unalaska, is much less frequent than is the case among most peninsular/insular communities, a result of both the transience and ethnic composition of the respective populations.

Cold Bay is not keyed to the fishing season as are most other communities in the region. Migration, for Cold Bay, is a product of corporate and governmental objectives, not seasonal variation. Since Cold Bay is much less implicated in the fishing season/off-season pattern which is the lifeblood of the surrounding communities there is less dual residence than might otherwise be expected (see Payne and Braund, 1983, or OCS Technical Report #68: 86ff. for a discussion of the seasonality of fishing communities). Some Cold Bay residents do maintain homes outside Cold Bay, but these are rarely used during the tenure of their stay in town and are used only when they finally remove from Cold Bay for good.

Very few Cold Bay residents maintain dual residences within the sub-region. Largely this is a result of the lack of commitment to the region as a whole, since most are in town for only a few years, have never been in the region before, and have little intention of returning to the area or making the area their permanent home.

The fertility level in Cold Bay is very low. This is for several reasons. First, the high ratio of males to females means that there are relatively few families which means that the birthrate is correspondingly depressed. Second, the area is home for most residents only temporarily and they have little intention of starting a family and raising children in the community. Those who find that they are to have children, in fact, often leave the community in anticipation of the event, particularly as the level of medical attention available is not as good as outside.

The mortality rate is also very low in Cold Bay. This is largely a result of the combination of worker transience, the correspondingly young age of the population, the relative absence of physical occupational risks (e.g., fishing or processing), the relatively more effective social controls on severe alcohol abuse. Since there is virtually no private land available in town it is almost impossible for an individual to retire in Cold Bay in that, upon retirement, his access to company housing would have to be terminated. The total absence in the population of people over the age of 65 supports this contention.

2. STRUCTURE

Structure is the rules and understandings according to which the community functions. Structure is the dependent variable in a systems analysis, that on which the environment impacts and in which adaptations and changes are provoked (Bailey, 1969; Easton, 1965).

In this section we will detail the structure of Cold Bay. This structure involves several components. First, we will discuss the value system of the residents of Cold Bay. Next we will discuss the organization of the basic subsystems of Cold Bay social structure, including economic structure, social networks, political structure, religious structure, education, health care and social services, and recreational activities. At most points we will find the local inhabitants remarkably outer-directed in their concern with status and prestige and in their actions in the various social subsystems. In many ways Cold Bay is secondary as an arena in which residents, as transients, are interested in competing or interacting.

2.1 Value System - System of Rules

The value system is that group of rules, generally arranged hierarchically, which govern social action. The value system includes general definitions of proper and desirable goals and definitions of the means which are appropriate to achieve those goals. We will consider the means of measurement of status, the belief system, world view, and reciprocity and redistribution mechanisms. We have already discussed the encompassing sociocultural system, so we will not repeat that discussion here, restricting ourselves to the value system of the residents of Cold Bay themselves.

Status in Cold Bay is very much an individualistic measure. The relatively low proportion of families, along with the transience of the residents, means that status is not measured in terms of family prestige or lineage depth, but in very pragmatic and relatively instrumental terms. The fact that recruitment and replacement occurs so readily and involves nearly all residents means there is little time for individuals to institutionalize a status hierarchy.

The family or lineage is often the focus of status in a community. This is certainly the case in most surrounding villages where three or four lineages usually dominate social, political, and economic life. But family prestige is minimal in Cold Bay. The fact that most of the people in Cold Bay have been in town for less than five years means that there is little sense of family prestige. There is, in essence, no local generational depth to the families in Cold Bay. Second, the vast majority of people in Cold Bay are single or they are in town as short term transients and do not have their families present with them. This means there is not only little prestige attached to specific families, but there is little knowledge of the families of the people living in town.

This situation is slightly mitigated by the fact that there are two or three people/families who are recognized as having been associated with the town or region for some time. However, the permanent and transient

residents actually tend to operate in different status networks. The majority of Cold Bay residents see these old timers as "sourdoughs", that is not as prestigious but as somehow slightly eccentric and odd. Conversely, these permanent residents are not interested in establishing status vis-a-vis the "sojourners". The status network in which the permanent residents are involved is a region-wide network relatively unknown to the transients (as we will see in detail below). Prestige, for most of the other Cold Bay residents, is associated more with moving "up and out" of Cold Bay than with staying in town for long periods of time.

Another means of distinguishing status is wealth. But since there are no old and/or established families in Cold Bay there is little sense of wealth distinctions. Those who are in Cold Bay are all roughly on a par from the standpoint of social class and income. There is no one in Cold Bay who can be called wealthy, with the exception of one or two people who are in town only occasionally. Ultimately, no one is particularly interested in displaying their wealth in the context of Cold Bay. If an individual becomes wealthy it is displayed in other venues, such as Anchorage or Seattle. Another factor is the tendency, in bush Alaska, for those who have become at least moderately wealthy to continue to act and live as they did before they came into money. It is often cited as a source of pride by bush Alaskans that one can walk into a bar and not tell the paupers from the millionaires. The latter still wear blue-jeans, may have a somewhat unkempt appearance, and, in general, do little overtly to call attention to the fact of their wealth.

There is a sense in which those who are known to be making very good salaries are envied and accorded a certain prestige. However, this is relative. No one in town is making princely sums, but by the same token no one is working for a pittance, so the social implications of income levels are not as consequential as in most small towns. There is no owner class in the community since all local employers are outside agencies and companies. Thus the occupational and social scale is collapsed to encompass only the middle ranges. Almost everyone in town is in the middle class. They are middle and lower level management and white collar employees or skilled blue collar employees.

The belief system of most Cold Bay residents is consonant with the basically practical approach to status and prestige. The residents of Cold Bay are, above all, pragmatists. Their belief system is one which includes a desire for the amenities of modern, twentieth century American life, while not expecting to become wildly rich. The residents are realists, and the one church in town is only modestly subscribed. They are willing to work hard for what they get, but they expect to be properly remunerated for their labor. Cold Bay residents, by and large, have more faith in science and technology than religion. There is a respect for religious beliefs, but most do not feel bound by a particular set of denominational canons. This, of course, is variable and is not meant to imply that there are no deeply religious people in the community, only that most do not fall into that category.

There are, in effect, no operative ethnic relations in Cold Bay. This is a result of the fact that the community is nearly 100% Euro-American, with very few Native residents. There is, therefore, no situation in

which ethnic identity comes into play in social relations. There is some latent sense of ethnic relations in that a few locals feel the Alaskan Native is gaining an undue advantage over them in general as a result of legislation in the last several years. However, this is not a widespread perception in the community.

One of the consequences of the lack of a Native sector of the population is a lack of acculturative stress which has characterized much of the rest of the region (see, e.g., OCS Technical Report #92, Unalaska Socioeconomic Study Impact Analysis, for a discussion of these stresses). There are no serious questions of identity among the Cold Bay residents. There is no sense of culture "shock" and there has been no radical transformation of their lives. These people were already firmly within the modern, western-oriented society and culture before they arrived in Cold Bay, and they will remain in it when they leave.

A final aspect of the value system revolves around reciprocity and redistribution. Small communities are often characterized by intense reciprocal and redistributive networks. Once again, however, though Cold Bay is a town of only slightly over 200, its structure is very different from most towns of that size.

By redistribution we mean the circulation of economic or social items by a flow of resources to central places or people, from where they are redistributed among the society's members (see, e.g., Swartz and Jordan, 1976: 497). Several factors work against extensive redistribution in Cold Bay. First, redistribution is often an economic reflection of social status or political power, with goods flowing to a central, powerful figure who then redistributes them to the population. The rough equivalence of economic position of all members of Cold Bay society means there is no individual who is able to assume this position. Second, the strength of links between residents of Cold Bay and the external world, in terms of economic and social networks, means that there is little redistribution which occurs within the community itself because the local arena is not the most important one for the residents. Much of the money earned by individuals in Cold Bay is used for aims defined external to the community. Since the establishment of prestige within the community is relatively unimportant to the residents, there is little incentive to build up a network of obligation through the establishment of a redistributive system.

By reciprocity we mean an exchange of economic items between roughly equivalent social units (Swartz and Jordan, 1976: 495). Where redistribution reflects a social and/or political hierarchy, reciprocity is an expression of social equality. Reciprocity does exist within the Cold Bay system. As in much of bush Alaska individuals feel a certain kinship simply as a result of sharing the burden of facing an objectively challenging and difficult environment. Meals are often shared, with individuals establishing a rough balance between giving and receiving over time. Aid is generally quickly forthcoming for home improvements, repairs, or construction, and it is generally recognized that the individual calling for such help has incurred a debt which can be called due when needed by those who rendered the aid. Again, however, the transience of the community means that only those who have been in town for a certain minimum period of time are really involved in such networks.

2.2 Organization - Structure

This section of our report will examine the social structure of Cold Bay. It will, in general, follow the outline of dependent variables presented in our table of analytic categories (see attached). We include here all aspects of Cold Bay social structure, including economic structure, social networks, political structure, religious structure, education, health care, social services, and recreational activities.

Though Cold Bay has a population of only 226 (according to the latest, 1982, estimates) it lacks the insularity we are accustomed to finding in small communities. It is a cosmopolitan, open society--that is, the people who make it up are cosmopolitan and have experience far beyond the confines of Cold Bay itself.

The central facility of Cold Bay is the Cold Bay Airport, the raison d'être for the town's existence. The economic structure, as we will see below, is dominated by the transportation and communications sectors and by the federal and state government (although, as we will note below, this latter is due to undergo a significant change in the next decade); it is above all a transient community, and this presents problems of coordinated, long-term planning as well as problems of community integration. Socially the community is characterized by the unusual extent to which kinship beyond the family is inoperative as a principle of social organization, by the overriding importance of friendship as the locus of social activity, and, finally, by the central role played by occupation in determining friendship and associational networks. Politically the community is fragmented. Political relations are, as are all other social relations, transitory and dominated by transients. The town has recently incorporated, insuring more control than would otherwise be possible over the future course of events in the community. Nonetheless, those who are there to witness those changes are likely to be very different from those currently planning for them, with attendant problems in preparation and outcome. Religious activity is relatively low. The one chapel in town is ostensibly interdenominational, but in fact, in terms of liturgy and ritual tends to be Baptist. Health care is an area in which Cold Bay is currently upgrading itself considerably through the construction of a modern clinic/hospital which will provide well for the health needs of the community, although there are currently no plans for the stationing of a medical doctor permanently in the community. Social services are an area in which Cold Bay is sadly lacking, unless we count the services provided by the individual employers in the community. The fact that Cold Bay is a full employment, transient (and therefore extremely young) community obviates the need for many social services which are required in other small towns of comparable size. Recreational activities revolve around two kinds of activity--the one a single bar located in the Flying Tigers complex (plus, to a certain extent, a bar which is operated at the Air Force Base), and the second outdoor activities such as fishing and hunting. Families do get together and have fish fries, and the like, but the social interaction is not as intense as one would expect in a small town.

We will see throughout this report that the dominant considerations explaining the nature of Cold Bay social structure have to do with,

first, the fact that the town is dominated by a few outside employers, both private and governmental; second, that the result of this form of employment is the transience of the population such that individuals rarely remain in town more than a few years and thus have little time for the establishment of social ties; third, that another result of this is the youth and single-male-orientation of the community; and finally, that the community is almost completely devoted to airport related activities, transportation, and/or communications sectors being particularly prominent in the local economic environment with very little local entrepreneurial activity. All these factors encourage strong intercommunity (i.e., regional) networks and weak intracommunity (i.e., local) networks. Cold Bay is extremely centrifugal--directed outward rather than inward.

2.2.1 Economic Structure

We will begin, appropriately, with a discussion of the economic structure of the community because it is around this structure that social relations are organized. There are five particular characteristics which distinguish Cold Bay.

First, Cold Bay is one of the few communities in the Aleutian Chain and Alaska Peninsula region not directly dependent on marine resources, particularly salmon and/or crab, for its economic survival. In Cold Bay the fisheries related sector is extremely small as a proportion of total economic activity, and indeed has undergone contraction in recent years. There is the potential for considerable development in this area, and this is a crucial sector bearing on the future economic vitality of the town, but at present fisheries activity is a minor consideration in the town's economic life.

The weakness of the fisheries sector is a result of several factors. First, the airport has dominated the economic life of the town and led it away from large-scale participation in the fisheries. Second, the town was literally founded on the basis of the airport, and this has meant that it originated as an Euro-American settlement. Thus, when the early seventies saw the introduction of Limited Entry salmon fishing, Cold Bay had extremely few residents who were interested in or able to gain permits, with the result that the development of an indigenous fishing community was foregone. Although this does not preclude fish processing, the few attempts at this have so far been ill-planned or relatively small-scale. Finally, virtually every resident of Cold Bay arrived in the community by means of some form of "assignment." Directed, by one or another government agency, to the community for a specified purpose, specified wages and, most importantly, for a specified period of time. Thus, the early history of the "community" directly follows the course of need for such assignments--beginning with the Second World War, then Korea, then Vietnam, more recently as a transport entrepot for fish processors to the even more recent oil-related development in the Bering Sea. The "fixed" nature of residence periods in this community has provided, and continues to provide, the greatest obstacle to successful community integration and continuity.

The second economic generalization that can be made about Cold Bay

concerns the kind of economic activity which characterizes and dominates the community. Cold Bay is dominated by three sectors in particular; transportation, communications, and government. The major transportation firms are Reeve Aleutian Airways, Peninsula Airlines, and Cold Bay Truck Rental, with the former two dwarfing the latter. The major communications firms are RCA, Alascom (which has recently been purchased from RCA), and the Interior Telephone Company, with the first accounting for the great bulk of employment. The major governmental employers are the federal government, including the Federal Aviation Administration, the National Weather Service, the Fish and Wildlife Service, and the Post Office, and the State of Alaska, including the Department of Transportation/Public Facilities, the Department of Fish and Game, the R.E.A.A., and the Magistrate. Federal employees have traditionally outnumbered state employees by at least two to one, though this is a situation which is expected to reach parity, as we will see below, within the next 8-10 years. The nature of these employers is, again, largely attributable to the central position assumed by Cold Bay in transportation, communication, and government activity as a result of the Cold Bay Airport.

A third economic characteristic of Cold Bay revolves around the nature of the workers. The majority of Cold Bay employees are semi- or fixed-transient, remaining in Cold Bay for a period running from six months to between three and five years. This is because most workers are not hired in Cold Bay but are already work for a company outside Cold Bay and are sent there for tours of duty of varying lengths. This means there is a tremendous turnover of employees every few years, as well as a large turnover in population as a whole since the economy is dominated by a few employers, almost all of whom practice some form of the tour of duty. This, again, is largely because Cold Bay is an aviation enclave and not an indigenous Native community.

The fourth characteristic of Cold Bay is closely related to the three preceding characteristics and is a partial explanation for them. Cold Bay's economy is not only dominated by a handful of employers, almost every one of these employers, and all the major ones, are corporations or government agencies which are external to Cold Bay itself. There is little local entrepreneurial activity, and that which is present is, at least so far, on a very modest scale. This means the aims of these firms are defined externally to Cold Bay, and that major economic fluctuations and changes in Cold Bay are responses to aims and goals outside Cold Bay itself. Much of this is again the result of the strategic importance of Cold Bay, initially to a national government perceiving a threat to its integrity, and subsequently to both governmental and private organizations with interests and aims promoted by the strategic location of Cold Bay as a transportation and communications center.

The fifth economic characteristic of Cold Bay has to do with land tenure. The process by which Cold Bay originated suddenly and fully developed as a transportation center of strategic national importance guaranteed property would be under the control of the national government. This was facilitated by the lack, currently or historically, of a permanent indigenous settlement in the area. Subsequent to the national emergency (WW II) the federal government no longer felt the need to maintain control, but they nevertheless did so until 1959 when, with the

entrance of Alaska as a state in the union, control of much of the property in town was transferred from the federal to the state structure. The state now owns virtually all land in Cold Bay, with the exception of small holdings of the federal government and a handful of private individuals. Thus, the dominant factor of land tenure in Cold Bay is the near-total lack of private land or land available for private development (with the exception of a small amount alienated by the State Department of Natural Resources in the 1979 land sale). The lack of an indigenous population has meant that Cold Bay residents were unable to lay claim to land in their community. The one major exception to this lack of private land ownership paradoxically involves Cold Bay land but does not involve Cold Bay residents. The Native Corporation of King Cove has selected, as part of its conveyance of land under the provisions of ANCSA, a stretch of prime residential land between Russell Creek and Mortensen's Lagoon, a tract occupying nearly a third of the total city limits on the southeast side. (These issues are dealt with more extensively in the history section).

Cold Bay, then, is economically influenced by a combination of a lack of a preexistent Native community in the area, the subsequent development of a major airport by external powers, and the resultant lack of available private land. A closer examination of the economic structure of the town will verify this. We examine, in turn, the cash economy of Cold Bay, the subsistence resource utilization pattern, the non-labor force, and patterns of land ownership.

2.2.1.1 Cash Economy

2.2.1.1.1 Commercial Harvesting

As noted above, the commercial harvesting and processing sectors are minor in Cold Bay, at least at present. There was an attempt on the part of the 13th Regional Corporation to develop a harvesting and processing capability, revolving around salmon, groundfish, and crab, but this was short lived as the 13th Corporation ran into financial difficulties and was forced to retrench--the Cold Bay operation was one of several victims of this retrenchment. Currently there is almost no commercial harvesting occurring in Cold Bay. The town lacks a small boat harbor or breakwater, so there are no fishing boats which identify Cold Bay as their home port. Though there is a state constructed, owned, and maintained dock in town (over 1,800 feet long) it is ill-equipped to efficiently off-load large quantities of product, and has not attracted widespread use by fishermen from other towns and villages (as, for example, from King Cove, the nearest village and a major fishing and processing center).

There is, however, considerable potential for commercial harvesting in the area, as evidenced by the success of fishermen out of King Cove, only twenty-five miles away. The area is in the center of a vast crab fishery; the groundfishery is characterized as one of the most abundant in the world, though it is essentially unexploited by domestic fishermen, and the area sits astride one of the most productive salmon fisheries in the world (including reds, chum, silvers, and, to a lesser extent, pinks and kings)--but none of these options are currently, or likely in the near future to be, utilized. The recent (summer of 1982)

Army Corps of Engineers study which considered the possibility of navigational, small harbor, or breakwater construction and/or improvement in scores of Alaskan coastal towns and villages did not recommend Cold Bay for any improvements, so the development of a harvesting capability will clearly not be a state priority in the near future. Cold Bay cannot count on the development of a harvesting capability over the next few decades.

2.2.1.1.2 Processing Sector

The processing sector would seem to hold more promise for Cold Bay, as it is not necessary to establish a resident source of fishermen. Nonetheless, the only real processing activity in Cold Bay is the operation of the Northern Pacific Fisheries (locally known as Winky's, after the owner). This firm processes salmon and sometimes crab and other marine resources. However, the total employment is usually approximately five people, though it fluctuates between as few as two and as many as fifteen. During most of the summer there were only two to four people working at Winky's. However, for the silver run Winky had up to twelve people working for a period of between three weeks and a month during the last part of August and the first part of September. Winky's has only been in town for a couple of years, and it is still too early to be certain whether it will prove to be a long-term operation or not.

The only other processing activity in town is a local representative of Seawest Corporation. This individual daily, during season, takes delivery of salmon eggs flown into Winky's by Seawest from Nelson Lagoon where the corporation has a floating salmon processor (the Western Sea) which extracts the eggs. This year (1982) was not a good one for salmon eggs, with shipments averaging between 500 and 1,000 pounds per day when 1,500 to 2,000 pounds a day is considered good. Several times for a week at a time deliveries averaged under five hundred pounds a day and frequently there were no deliveries at all. However, for a period of two weeks or so during the silver runs of late August and early September daily averages of 1,500 to 2,000 pounds were achieved. This lasted until the first week of September, when shipments were finally stopped for the season.

Seawest has an agreement with the Tokyo Overseas Trading Company of Japan to deliver salmon eggs for export to Japan, and earlier in the year there were two Japanese workers who lived at Winky's and took delivery of the salmon eggs, packaged them, and sent them to Japan. However, the rate of delivery was so slow that by the end of July they had been instructed by their company to move their operation to Pilot Point and take delivery of eggs from that area. Currently there are no representatives of the Trading Company in Cold Bay.

2.2.1.1.3 Entrepreneurial Activity

Entrepreneurial activity of local origin is very limited in Cold Bay. Few individuals remain in Cold Bay long enough to initiate such activity, as most are with large, externally controlled firms and are in Cold Bay only for a set period of time. This lack of a significant sector of

truly permanent residents (though locals consider many permanent who have been here only a few years and will probably leave within a few more) has stunted the development of a genuinely local economic sector. There are only two, possibly three if we stretch the definition, local entrepreneurial activities which can even be considered small scale.

The largest local business is Cold Bay Truck Rental. This business is owned and operated by two local residents who consider themselves to be permanent residents (though in point of fact it is possible that neither will actually end up being permanent). The two owners are also the only two employees of the business. They have between fifteen and twenty vehicles which they rent out to both locals and short-term transients who are in Cold Bay doing maintenance or working on short-term projects (the number of vehicles varies, as local conditions are very hard on vehicles and a good number are in a constant state of disrepair). Vehicles are rented at a rate of forty dollars a day—there are no weekly rates, although several local residents have been allowed to rent vehicles by the month at a considerably reduced rate. The business is operated out of two buildings, one a large quonset hut which serves as the repair and maintenance facility with room for two vehicles at a time, and a smaller building which serves as storage and a small office. This is the most ambitious and successful local entrepreneurial effort currently operating in Cold Bay. However, neither of the individuals operating the business depend on it for their sole source of income and both hold other jobs in the community as well.

The second local entrepreneurial effort is only now being established. This involves two individuals who are attempting to build an airplane hangar on the parking apron of Cold Bay Airport between Peninsula Airlines and the Federal Aviation Administration facility. Their intent is to rent out hangar space to local pilots and, possibly, initiate an air taxi service, similar to, but smaller in scope than, that run by Peninsula Airlines. They have currently contracted for the final surveying of the property on which they will build the hangar, after which they will be free to begin construction. They are also currently having a well dug on the property which should be completed by the end of September (1982). In talking to them they anticipate that construction will be completed by fall of 1982 (the hangar will be built of pre-fit sheet metal sections which are relatively easy to erect). As of this writing it is difficult to be certain that this operation will succeed, and it appears that construction will probably be put off until spring of 1983, but the two men involved seem confident they will be in business within a year.

These are the only licensed, or soon to be licensed, local businesses in town, and they account for a total employment of only four people (three if we count the individual involved in both as a single person), or less than three percent of total Cold Bay employment. The only other local operation which generates income is a single backhoe owned by a local citizen which he rents out to those who need to use it. However, most residents know this individual well enough that they are able to gain use of the backhoe for little or no payment. As often as not the use of the backhoe is based on reciprocity, that is the return of the favor in another form at a later date, rather than on a cash basis.

2.2.1.1.4 Alternative Employment

Alternative forms of employment constitute the vast majority of all economic activity in Cold Bay. No more than an average of twelve people are involved in employment in the processing, harvesting, and local entrepreneurial activity sectors together. Thus, considerably more than 90% of all jobs in Cold Bay fall under the state government, federal government, or external commercial agencies. This is what gives Cold Bay its distinctive economic profile. It is dominated by employers predominantly external to the community, and therefore the economic fluctuations and stability of the town are determined by goals and aims defined in terms of corporations and agencies far removed from Cold Bay itself.

The federal sector has historically been the dominant economic force in Cold Bay. Although this is no longer the case, and the sector continues to undergo contraction, it is still an economic force in the community. The federal agencies which operate in Cold Bay are, in order of size of labor force, the Federal Aviation Administration, the National Weather Service, the Fish and Wildlife Service, and the Post Office.

The Federal Aviation Administration has a long history of involvement in Cold Bay, and at one time had sole responsibility for the operation of the Cold Bay Airport. It has since relinquished most of this responsibility to the State of Alaska Department of Transportation (see below under state employment), although it retains responsibility for the operation of the control tower and air controllers, and for maintenance of the navigation aids and other equipment associated with the tower. The FAA currently employs sixteen people, although it is in the midst of a retrenchment program which has already seen the workforce reduced by about four positions since 1980 and which will eventuate, according to current plans, in a work force of only two by 1990. The long term plan is to "remote" all airport operations at Cold Bay through the King Salmon air controllers facility so that all landings and takeoffs from Cold Bay, as well as the smaller surrounding airports, will be controlled from King Salmon thereby reducing manpower requirements at Cold Bay to a couple of technicians. The FAA has a control tower, several storage areas, and eleven houses which are reserved for its employees.

The FAA is currently the largest single government employer in Cold Bay, outranking all other federal and state employers, although if current plans proceed according to schedule this will soon change. The FAA has further economic impact in the community as a result of the fact that it owns and operates the two largest wells in town, the source of water for most of the businesses and residents of Cold Bay, the storage tanks for holding the water (two 15,000 gallon tanks for consumption; two 25,000 gallon tanks held in reserve for fighting fires), and the city sewage plant, an aerated lagoon with chlorinated outfall to the bay with a daily capacity of 22,500 gallons. This is an issue of importance to the future of Cold Bay, as the municipality itself has not accepted responsibility for the operation of these facilities (this is discussed fully above in the section on community facilities and capabilities).

The National Weather Service is the second largest federal employer in Cold Bay with a workforce of five. The Weather Service is responsible for augmenting the FAA in the operation of the control tower through the provision of updated weather forecasts and for the monitoring of conditions at the airport itself. The NWS in Cold Bay is also an "upper atmosphere station" and releases weather balloons daily which transmit data from the upper atmosphere to a Rawinsonde Dome. These data are then fed into the national offices in Kansas City and Washington, D.C. The NWS also maintains housing for its employees, a total of six houses located just to the east of the FAA housing. Both the FAA housing and the NWS housing are located on state land which is leased to the federal government.

The last two federal civilian employers are the Fish and Wildlife Service of the Department of the Interior, and the Post Office. The Fish and Wildlife Service is located to the northeast of the built up section of Cold Bay, across Baranov Road. There they have a shop/office complex in which the business of the Service is conducted--as well as five houses. Four of these houses are occupied by Fish and Wildlife employees and their families, while one is a bunkhouse reserved for visiting members of the Service or guests. The Fish and Wildlife Service is unique among federal employers in Cold Bay in that it occupies land which is actually owned by the federal government (the Department of the Interior) rather than leased from the State of Alaska. The Service's primary responsibilities include management of the 415,000 acre Izembek National Wildlife Refuge, as well as the Unimak Island Unit of the Aleutian Island National Wildlife Refuge, and the Pavlof Unit of the Alaskan Peninsula National Wildlife Refuge. The Service currently employs four people in Cold Bay.

The Post Office is located in the northeast corner of the Reeve Aleutian Airways Terminal. It provides post office boxes for local residents and serves as a clearinghouse for mail from all over the region which is transferred from small carriers (such as Peninsula Airlines) to Reeve Aleutian Airways, or vice versa, as it moves through Cold Bay. The Post Office employs two people who are "local hire" (that is, were hired from Cold Bay rather than having been brought into town from outside) and who therefore live with their spouses in housing provided by their spouses' employers.

The final federal employer in Cold Bay is the Air Force. There is a contingent of approximately sixteen men located at the Air Force Base on Grant Point. They both work and live on the base. As we will see below this number is scheduled to be cut back rapidly in the next few years.

The state is the other governmental employer in Cold Bay. Historically this sector has represented a minority of government employees, far outnumbered by federal employees. However, during the last decade state employment has slowly increased while federal employment has dropped. Currently federal employees still outnumber state employees by approximately two to one, but the gap continues to narrow and if federal retrenchment plans are realized state employees may come to equal or surpass federal by the end of the decade. There are four state employers: the Alaska Department of Transportation and Public Facilities (the DOT), the Alaska Department of Fish and Game, the R.E.A.A. (Rural Educa-

tion Attendance Area), and the Magistrate.

The central state employer in Cold Bay, from the standpoint of economic impact on the community, is the Department of Transportation. Currently the DOT employs six people in Cold Bay. The DOT takes primary responsibility for the maintenance of the airport and the area surrounding it. The DOT keeps the runway in repair, keeps the lights and ground signals in repair, and takes responsibility for emergency and safety procedures at the airport. This latter includes the maintenance and operation of the airport firefighting equipment which includes six vehicles (1 Go-Track, 1 attack vehicle, two standard trucks, one tanker, and one converted jeep). The state DOT employs a total of six people. Its facilities include a central office/firehouse building of two stories, several storage areas around town, and two large quonset huts used for equipment storage and as a holding area for sand and gravel. They also have several storage sheds at various small airports in the region for which they are also responsible for maintenance.

The DOT is central to Cold Bay's economic life for reasons going beyond its role as a major employer. When the federal government divested itself of most of the land in the Cold Bay area the Department of Transportation, through the State of Alaska, was the agency to which control passed. The result is that the DOT owns virtually all the land in Cold Bay proper. The DOT owns all the land on which the airport is located as well as all the land on which the built up portion of Cold Bay is located. This means that in addition to responsibility for the airport itself the DOT takes responsibility for maintenance of all the roads in Cold Bay. All non-state operations in Cold Bay take place on land leased from the state, giving the state a major say in the economic structure of the town. Though it is possible that the state may, in the near future, relinquish some of this land to the newly incorporated city of Cold Bay, this has not yet occurred. The DOT also maintains nine employee homes on the north side of town (this structure of land ownership is covered in detail in the history section).

The second state agency in Cold Bay is the Department of Fish and Game. This department takes primary responsibility for the monitoring of commercial fishing in the entire western peninsula region, keeping records of catch levels, escapement levels, keeping streams cleared for spawning salmon, and so on. The Cold Bay office works closely with the Unalaska and Sand Point offices in monitoring shellfish activity as well. The Fish and Game Department also operates a salmon hatchery on Russell Creek, several miles to the southeast of Cold Bay. The Department is actually the largest of the state employers in Cold Bay, surpassing the number of DOT employees by one with seven. Of these usually two or three are located at the Russell Creek Fish Hatchery, while the bulk are located at the Fish and Game headquarters in town.

The Fish and Game complex in town consists of a large office/storage complex with, a short distance off, three houses, reserved for employees of the department. Several of the employees are in Cold Bay only seasonally, approximately half the year from late spring to early fall, after which they return to the regional or state Fish and Game offices to collate and analyze the data from the year just passed, while the other employees are here year round. Currently the state plans to close

down the Russell Creek Hatchery, and they also intend to lay off the wildlife biologist according to late reports. The City Council, in cooperation with the Aleutians East Coastal Management and Regional Planning Program, is now attempting to gain a reversal of that decision, but at present it is impossible to say whether this will be successful or not.

A third major state employer is the Aleutian Islands R.E.A.A. which employs the teachers at the Cold Bay School. The school, which has recently been extended from K-9 to K-12, has four teachers and a maintenance man, for a total of five employees. They are employed for nine months out of the year, and have the summer off.

The final state employee in town is the magistrate, who is responsible as the legal representative of the State of Alaska for Cold Bay. The magistrate is also responsible for a considerable number of villages and towns in the surrounding region, and makes frequent trips during the year to outlying areas to serve the needs of those residents. The magistrate is one of the few truly permanent residents of Cold Bay, having resided there for over sixteen years. His wife has been there even longer, for twenty-five years, probably the longest term resident of Cold Bay. The magistrate is one of the few people in Cold Bay who has purchased his own piece of property (in the land sale of 1979) and built a house on it. He has had his own septic tank and well installed on his property, and is committed to living in Cold Bay for life. He is one of the few Cold Bay residents who does not live in employer-provided housing, but lives in his own home on his own property.

There is one other area of government recently inaugurated in Cold Bay. This is municipal government. Cold Bay incorporated as a second class city in 1982 (January) and instituted a city government based on the mayor-council form consisting of seven councilmen, including a mayor chosen from among them. However, the members of the municipal government serve without pay, so they cannot be counted as a part of the labor force. Indeed, this is partly a result of economic necessity since all the members of the council actually hold other jobs in the community (or, in the case of one member, hold other positions which often take them out of the community). By serving without pay these people avoid conflicts with their regular jobs which would otherwise preclude their acting as members of the council. Discussions have been held informally concerning the possibility that these positions might one day become salaried, but these discussions have not yet become serious and it is doubtful that this will occur within the foreseeable future. However, the municipal government does employ one clerk at halftime. This is the sole municipal employee in Cold Bay.

This accounts for the governmental sector of the Cold Bay economic structure. Between federal, state, and municipal employers we can account for a total of sixty-three employees, divided forty-three federal, fourteen state, and one municipal (counting the halftime clerk as one employee). All together government employees account for approximately forty percent of the Cold Bay workforce, a figure which has declined steadily in the last decade and which promises to continue, perhaps even accelerate, its decline over the next decade. The majority of these employees (in particular the FAA, National Weather Service, the

DOT and, to a certain extent, the Fish and Game Department) are in Cold Bay for a limited time only. The FAA and the Weather Service have tours of duty of two years, or, in some cases, of one year, while the Department of Transportation and, in some cases, the Fish and Game Department have tours of duty of eighteen months. Thus, among the government employees in Cold Bay there is little likelihood that one would find many individuals who have been in town more than a few years, and those who have been in town over five years are rare. In many instances this is because the government agency provides for what is known as "return rights". That is, the individual is helped with his moving expenses, and those of his family, when he leaves Cold Bay to return to where he came from or to take another position with his employer in another town. However, it is often the case that these return rights are good only if exercised within a certain period of time, generally allowing no more than three renewals of the tour of duty before they are lost. Thus, though the time varies considerably, it is difficult for most government workers to remain in Cold Bay much beyond five years before they are faced with the choice of staying on indefinitely or exercising their return rights and leaving Cold Bay for another assignment. Most choose the latter. This, of course, means that the working population is in constant flux, with people leaving and arriving on a regular basis.

External commercial agencies form the largest single cohort of employers in Cold Bay. Historically this position has been held by the government sector, but in the last decade, particularly with the de-escalation of the Viet Nam War, the private sector has outstripped the government sector, a process which continues to gather momentum today. The private sector now outnumbers government workers (with the exclusion of federal military personnel at the Air Force Base) by about one and one-half to one. The largest contributors to the private sector are the fields of transportation, communications, and service, in that order. There are also small numbers of processing, covered earlier, and construction workers.

Cold Bay's private sector is unusual for two reasons. First, it is composed almost exclusively of people working for major firms external to Cold Bay, with the result, again, that most of these workers are transient and will spend no more than a few years in Cold Bay. Second, the sector is heavily dominated by basic industries (as defined in Alaska Consultants, 1981) in particular transportation and communications, at the expense of secondary and tertiary sectors. Largely this is a result of the fact that Cold Bay is, in reality, providing these basic industries not only for itself, but as well for the entire region within which Cold Bay is located.

The two largest external commercial entities in the transportation sector are Reeve Aleutian Airways and Peninsula Airlines. Reeve has been in Cold Bay from World War II, and currently maintains the only regularly scheduled passenger service into and out of Cold Bay. Reeve has a total of twenty-two employees, making it the largest employer in Cold Bay proper (RCA has more, but is located at the Air Force Base approximately eleven miles out of town). Reeve maintains several facilities in town, including the Reeve Terminal building in which there is a passenger waiting room, baggage and ticket counter, back offices, and the post office. They also have a bunkhouse in town for employees and

an employee mess hall next to the bunkhouse. Reeve provides housing for many of its employees in the bunkhouse and in rooms on the second floor of the terminal.

Reeve is interesting for a reason other than being the largest employer in town. It also has the highest percentage of "local hires" of any major employer in Cold Bay. Fourteen of the twenty-two people who work for Reeve were hired in Cold Bay rather than brought in from outside. This is because many of the Reeve employees are married to people who work for other agencies, particularly governmental, in town. This works to Reeve's advantage in several ways. First, it means they do not have to provide housing for all their employees as do most of the other major employers in town. Second, it means they do not incur the expense involved in helping with the costs of relocation to bring an employee to Cold Bay to work. Finally, it means they do not have to worry about guaranteeing return rights, since their workers were already in Cold Bay when they were hired.

Reeve also provides some important economic services for the community. They sell diesel oil from their terminal next to the passenger terminal in a cooperative venture with Chevron. This is the source for most of the townspeople of diesel heating fuel. They also provide gasoline for most of the vehicles in town. Finally, they provide fuel for the non-Reeve planes in the area which use the Cold Bay airport frequently. Overall, however, there is a fairly high level of dissatisfaction with the service offered by Reeve, both among private individuals and companies. Reeve charges extremely high fares for passage to Anchorage, or to any point to which they fly, and also charges very high freight rates. The local residents blame this on a lack of competition and the belief on the part of Reeve that people simply have no choice but to accept the current situation. Most locals welcome the competition offered Reeve by AirPac, but as yet the latter does not fly into Cold Bay.

The second major transportation company in town is Peninsula Airlines. Peninsula is based in King Salmon, but the Cold Bay office is a relatively large and independent one. Peninsula provides three kinds of service. First, under contract to Reeve, they fly to Nikolski on Monday, King Cove on Tuesday, Thursday, and Friday, Akutan on Wednesday, and False Pass on Thursday. These are passenger flight continuations of Reeve flights which originate in Anchorage or Seattle. Second, they fly charters whenever they are hired to do so. Generally these are to someplace on the west peninsula or in the Aleutian Islands. Finally, they have contracts for mail runs to Atka, False Pass, and King Cove. Peninsula now has six planes which are used for these various purposes, two Grumman gooses and Piper Navajos, with one Piper Saratoga and one DC3. They employ ten people, including six pilots, two secretaries, the manager, and one line person. Peninsula's physical plant includes one large hangar which also has office space in it, and one slightly smaller hangar devoted completely to housing airplanes. Peninsula also leases hangar space to ARCO which is in town pursuing offshore surveying and oil exploration.

In the communications sector there are three concerns, one of substantial size and two relatively small. These are, in order of number of

employees, RCA, Alascom, and the Interior Telephone Company. This sector, communications, represents nearly as large a proportion of the Cold Bay labor force as the transportation sector. All together (including in the number the employees of the Cold Bay Truck Rental Company) transportation accounts for thirty-four jobs in Cold Bay, or approximately 22% of all Cold Bay employees. The communications sector, on the other hand, accounts for some 31 employees, or approximately 20%. These two sectors alone account for well over 40% of the Cold Bay labor force.

RCA is the largest firm in the communications sector. They employ approximately twenty-eight people, making them the largest employer in Cold Bay (We noted above the difficulty, given RCA's unusual time off policy, of establishing the exact number of employees in Cold Bay). Until recently they employed over thirty people, but this was before they divested themselves of Alascom, which has since been taken over by another corporation, and before they began their retrenchment program. This is part of a long-term process, similar to that being undergone by the Federal Aviation Administration, in which RCA hopes to halve its workforce in the next five to eight years. They are introducing solid state equipment which will allow them to "remote" much of the operation of the site through other sites in Alaska.

RCA is located at the Air Force Base, approximately eleven miles to the northwest of Cold Bay. RCA maintains and operates most of the radar equipment at the base, and has taken increasing responsibility for its operation in the last few years from the military. Housing for the workers of RCA is provided in trailers at the base as well as utilizing base housing itself. The main building at the base has apartment-like rooms in it, in addition to a bar, recreation rooms, a full size gymnasium, weight rooms, a pool, and several other leisure and activity rooms as well as offices for the RCA employees and the military contingent.

Alascom is another private communications company in Cold Bay. Alascom provides satellite broadcasts for the entire community, including the Air Force Base. This includes both radio and television. Alascom was divested by RCA about a year and a half ago (early 1980) and is now owned by Pacific Power Company, of Washington State. They employ two people full time. They offer a cable television service which is subscribed to by most households in Cold Bay. They have communications lines throughout town, which go full circle from the government housing out Baranov Road past the dock, around the corner and down to Russell Creek. They cover much more than the area which is currently built up and should accommodate future expansion. Alascom has a complex of receiving stations to the northwest of town, from which lines are run into the developed part of Cold Bay. They have an office just off Baranov Road by the Interior Telephone Office.

The final external commercial agency in the communications sector is the Interior Telephone Company. This is a regional telephone company employing only one person in Cold Bay. This individual is responsible for installation and service, and often works only part time, as is currently the case (in fact the single local employee quit during the summer of 1982 and it is unclear at this writing whether ITC has a local employee at all. Nonetheless, we expect them to eventually replace or

rehire this individual). There are approximately 125 subscribers to the service, including both private and business lines. A satellite is utilized for all long distance calls. The Interior Telephone Company has an office on land it leases from the state, just off Baranov Road next to Alascom.

The service sector consists of two major companies, Flying Tigers Lines and the Northern Power Company. The Flying Tigers complex is also of external origin. This firm has been an historically important force in the shaping of modern Cold Bay. They entered the area in the nineteen sixties and became particularly important in the seventies. At one time they flew freight and cargo in and out of Cold Bay regularly, but in the last ten years this has declined until today they rarely schedule flights into or out of the city. In fact, only about one Flying Tiger flight a month comes through Cold Bay. Nonetheless, the Tigers remain a major influence in Cold Bay not because of their involvement in flying, but because of their involvement in the private sector, particularly service, in the town itself.

Flying Tigers operates the major shopping and entertainment complex in Cold Bay. They operate the only store in town; the only place where purchases of food, dry goods, sporting goods, medical needs, and so on can be made. They operate the only restaurant in town. This is the only place an individual who is passing through can get breakfast, lunch, or dinner, and is open seven days a week. They also operate the only bar in town, the primary meeting place and literally only place to socialize in Cold Bay proper (the only alternative is the Air Force Base). "The Weathered Inn" is by far the most popular social venue in Cold Bay. It is particularly popular among the singles in town, and the unusual demographic makeup of Cold Bay includes a large proportion of single people, almost completely single men.

Flying Tigers also operates the only public hotel in town. Though Reeve has a bunkhouse, as does the Department of Fish and Game, neither of these latter are open to the public. Anyone in town for a short time, and not connected with one of the other major employers in town, has no choice but to use this hotel. The rooms are just that, a single room with a bed and a small table and desk, and they rent for \$40 a night, clearly a sign of lack of competition. Altogether Flying Tigers has about sixteen employees (though they may drop as low as twelve employees during the off season) working in the store, the bar, the restaurant and overseeing the operation of the hotel. Most of these were hired by Tigers outside of Cold Bay and subsequently transported there, as is the pattern for most of the large employers in town. However, like Reeve, Flying Tigers has a certain percentage, though not as large a proportion as Reeve, who are local hire, that is, were hired subsequent to moving to Cold Bay. Once again this does not mean that these people came to Cold Bay without support to hunt for a job as most of them have spouses who already had positions with other employers in town and were brought here to work.

Flying Tigers is particularly crucial to the current character of Cold Bay and to the possibilities for future development of the city for one reason above all others. In 1960 they signed a lease with the state which gave them exclusive rights to operate a bar, hotel, restaurant,

and store, among other facilities, in Cold Bay for the next twenty-five years. This lease expires in 1985, but at that time Tigers has the option of renewing it for another twenty-five years or letting it lapse. The head of the local Flying Tigers operation says that they are currently debating whether or not to renew. This lease has already had important effects on the development of Cold Bay. Some years ago, as noted elsewhere in this report, an outside firm came to the city with an offer to build a hotel and restaurant in town. Local residents were generally receptive to the idea, but when the central office of the Flying Tigers was contacted and permission requested of them, per their lease, it was flatly denied. Thus, Flying Tigers, run by a group purely external to Cold Bay, appears to have a stranglehold over the service and entertainment sectors of the Cold Bay economy. Any future growth of the city will have to contend with the wishes of this externally oriented group of businessmen, and it is their motives and goals, the good of their company, and not the desires of the local populace, which will determine the direction taken by the commercial sector of Cold Bay. At this writing it appears that the Flying Tigers are leaning toward not renewing their lease, which would open Cold Bay to other commerical interests, but it is too early yet to be certain what will transpire.

The Flying Tigers also practice residential segregation of their employees. They have a series of six trailers located across the street from the bar/restaurant/store/hotel complex which house their employees. Once again, occupation determines location of residence. The fact that a smaller percentage of the employees of Flying Tigers are local hire than is the case with Reeve means that the residential segregation is even more complete among the former than among the latter (see the section on social networks for an in-depth discussion of the effects of occupation on residence and social interaction).

This completes the employment structure of Cold Bay. With these data we can now detail the overall structure of the Cold Bay labor force. This is done in Tables 5 and 6. Table 5 presents the labor force by numbers in each sector; Table 6 represents the labor force by percentage contribution of each sector (see next two pages).

2.2.1.3 Subsistence

The cash economy exercises almost total dominance over the Cold Bay economic organization, despite the fact that it is directed in large measure outside the town. Subsistence economic activity has no history and is relatively little practiced--beyond recreation. This is despite the fact that the area provides for an abundance of subsistence needs. However, many of the local residents do take some advantage of the game, both terrestrial and marine, which abounds in the area.

There are several spots around Cold Bay where one can fish very successfully for salmon. All of the major southern peninsula runs come into Cold Bay to some extent, including reds, kings, chum, and silvers. A fair proportion of the local residents do fish each year to provide a supplement to their diet, some fewer depend on salmon for a major part of their diet during the season and some freeze salmon for the winter.

Table 5

Cold Bay Labor Force by Sector: 1982

<u>Industry</u>	<u>Total Employees</u>
Government	63
Federal	43
Federal Aviation Administration	16
National Weather Service	5
Fish and Wildlife Service	4
U.S. Post Office	2
Federal Military (U.S. Air Force)	16
State	19
Department of Transportation	6
Department of Fish and Game	7
R.E.A.A.	5
Magistrate	1
Municipal	1
Clerk	1
Private Employers	91
Transportation	34
Reeve Aleutian Airways	22
Peninsula Airlines	10
Cold Bay Truck Rental	2
Communications	31
R.C.A.	28
Alascom	2
Interior Telephone Company	1
Service	18
Flying Tigers Lines	16
Northern Power Company	2
Manufacturing/Processing	6
Northern Peninsula Fisheries	5
Seawest	1
Construction	2
Well Digger	1
Laborer	1
	Total: 154

Table 6

Cold Bay Labor Force by Sector as Percent of Total Labor Force: 1982

<u>Industry</u>	<u>% of Total Laborforce</u>
Government	40.9
Federal	27.9
Federal Aviation Administration	10.4
National Weather Service	3.2
Fish and Wildlife Service	2.6
U.S. Post Office	1.3
Federal Military (U.S. Air Force)	10.4
State	12.3
Department of Transportation	3.9
Department of Fish and Game	4.5
R.E.A.A.	3.2
Magistrate	0.7
Municipal	0.7
Clerk	0.7
Private Employers	59.1
Transportation	22.1
Reeve Aleutian Airways	14.3
Peninsula Airlines	6.5
Cold Bay Truck Rental	1.3
Communications	20.1
R.C.A.	18.2
Alascom	1.3
Interior Telephone Company	0.7
Service	11.7
Flying Tigers Lines	10.4
Northern Power Company	1.3
Manufacturing/Processing	3.9
Northern Peninsula Fisheries	3.2
Seawest	0.7
Construction	1.3
Well Digger	0.7
Laborer	0.7

A Cold Bay resident is eligible for a subsistence salmon permit which allows him or her to take up to two hundred salmon with a set net. There are several streams in the vicinity, including Russell Creek, Trout Creek (also the locale of a good number of Dolly Varden), and streams on the flanks of Frosty Mountain which provide excellent fishing. Mortensen Lagoon is also very popular for setnetting. Although salmon is the major fish taken, both for subsistence and with a sport-fishing license which most residents purchase, there are also good quantities locally of groundfish, including cod and halibut (though not classed as a bottomfish) in particular, as well as crab (king, tanner, and dungeness). Each of these is harvested in moderation by residents.

Hunting is also a pastime of some popularity in Cold Bay, and a large number of residents utilize it to supplement their diets. The most popular game animal is the Barren Ground Caribou. Caribou season is in the fall of each year, and the animals are so plentiful that one is literally guaranteed the animal of his choice. Caribou is often frozen and put away for winter. Bear is also hunted occasionally, though almost always as a game animal rather than as a source of sustenance. Duck and geese are hunted in season (September and October) and are also frequently frozen for the winter. Trapping is limited and generally confined to red fox, weasel and wolverine. In general, however, Cold Bay probably utilizes the biological resources of its environment for subsistence less than any town or village in the region.

Cold Bay, then, is a community dominated by a cash economy, and one in which the subsistence sector plays a minor role at best. There has never been a need to depend on the subsistence sector, as there was never a time when Cold Bay was in any sense isolated or out of touch with consumer products. Cold Bay does not have the deep history, relatively, which many villages have, nor has it ever been without extensive transportation and communications links to Anchorage, Seattle, and the lower-48. The lack of inward-directedness extends beyond the cash economy in which transportation and communications pull the town into the region as a whole; it goes also into the subsistence sector where it is reflected as a lack of interest in or exploitation of the immediate environment in favor of supplying the needs of sustenance and day to day living through importations from outside the community.

2.2.1.3 Non-Labor Force

Cold Bay is also unusual in that there is virtually no non-labor force. That is, each household has at least one gainfully employed individual who is able to support the household, and many have two such individuals. Almost every "local hire" is the spouse of someone who already has a job. There is no unemployment in Cold Bay. The idea simply does not make sense in the context of the community. The town both attracts those with jobs already and purges itself of those who lose their job or are unable to find one. One does not go to Cold Bay to live except at the instigation of an employer who "sends" the individual or his spouse there. By the same token, it is impossible to survive there, even to find a place to live, unless one has a job, so those who lose their job invariably move on to another community very quickly.

There are also no retired people in Cold Bay. The primary reason for this is that most people, while working, live in housing provided by their employer in town. There is almost no private land available for the individual to purchase and on which he can build a home. This means that once the individual is no longer working for a company represented in town it is impossible for him to find an alternative place of residence. People do not retire in Cold Bay, they retire from Cold Bay. In several discussions with people living in employer-provided housing we noted that they would enjoy retiring here, but it is simply impossible for them to find a place to live, much less purchase, once they no longer have access to employer-provided housing. Thus, there are no social security or pension beneficiaries in town, although most people in town are building up a pension fund which will be utilized on retirement--but retirement to some place other than Cold Bay.

Finally, just as there are no unemployed and no retired residents of Cold Bay, neither are there any people drawing Aid for Dependent Children or welfare payments Public Assistance Recipient and Expenditures Study, 1981). Cold Bay is a relatively young, full employment town. There is no one here who is not supported by someone with a job or who does not have a job of their own. This somewhat rosy picture of a town of full employment with no welfare, AFDC or other non-productive activity is, unfortunately, purchased at the expense of a sense of community and civic identity.

2.2.1.4 Conclusion

This discussion of the sectors of Cold Bay employment gives an indication of the kind of marketplace relations which exist in the city. The most important features are the relative importance of external versus local businesses, and the ratio of transportation, communication, and government employment to service and construction. There are only two locally owned and operated businesses, and one of these has yet to open its doors. On the other hand major corporations, such as Flying Tigers and RCA, and both federal and state governments dominate the employment picture.

The result in the marketplace is that Cold Bay has little secondary and tertiary employment--there are no television stores, or plumbing businesses, or electrical repair stores. The focus is outward, rather than inward. A great many people in town work every day to assure the passage of goods and people through the town rather than into it. Distribution is a key element of Cold Bay, but it is distribution in the context of a region, not in the context of the town itself. Cold Bay both distributes far more goods than one would expect of a town its size, and at the same time distributes far less goods within the town than one would expect given its size.

The reason so many goods pass through Cold Bay is the airport. The reason Cold Bay lacks any retail marketplace is also a result of the airport. Most goods, especially major ones, are simply imported through the airport or on ships which call at Cold Bay several times a year (such as the ferries Western Pioneer and Dolphin). Produce cannot be grown locally and must be imported, and the one Cold Bay concession to a

retail business is the store at the Flying Tigers. But even the locals purchase many of their dry goods outside, either when they make trips to Anchorage, which may be several times a year, or, especially in the case of government workers, through a catalogue providing commissary-like privileges, or, in the case of RCA and the military, at the commissary on the Air Force Base.

The result of this system of distribution and consumption is that there is little interaction by local residents with other residents in the marketplace. The greatest proportion of expenditure for goods and services is directed outward, and there is little multiplier effect of local capital in the local marketplace. There is no local production; even the few retail outlets (the bar and the store) depend on outside supply for their inventory. In Cold Bay the only place one can spend money is in the Flying Tigers complex.

In many ways this centrifugal tendency in the Cold Bay economy presents problems when we come to talk about an economic structure of Cold Bay. The boundaries of such a system are difficult to draw because the network of cash economic relations is unusually sparse among the residents while it is unusually dense between Cold Bay, as a depot, and the other towns and villages in the region. Without a doubt Cold Bay is closest, in terms of volume of economic goods exchanged, to Anchorage to the east and Dutch Harbor/Unalaska to the west. Very strong ties also exist with, especially, King Cove, False Pass, and Nelson Lagoon. There are also substantial ties with the entire Aleutian chain as far west as Attu. Interstate ties are particularly strong between Cold Bay and Seattle. It is also interesting that the perceived ties and dependencies between Cold Bay and the Pribilofs are stronger than expected, and, in a directly economic way, greater than the ties between Unalaska and the Pribilofs.

This concludes our discussion of Cold Bay economic structure. This structure forms the basis for all other relationships in town, and we turn now to explicitly consider the social structure of the community.

2.2.2 Social Networks

We have seen the effects of the emphasis on transportation, communications, and the government in economic terms above. The essential factor which emerged there, as illustrated by several features of the economic structure of Cold Bay, was the centrifugal nature of the town's economic structure. This general characterization can also be applied to the social and political structure of Cold Bay.

In the following discussion several points will emerge strongly, and a brief introductory summary of those general trends will prove helpful. There are six major tendencies which lend Cold Bay its uniqueness of social structure. First, the importance of kinship is minimal, and in no case that we know of does its importance extend beyond the family unit itself. Extended kinship networks, usual for this part of Alaska, simply do not exist.

Second, even though the importance of kinship has been restricted to the

family unit itself, it is even less important than that would imply. This is because of the predominance of single individuals in the community. Families are in a distinct minority, so, from the standpoint of kinship, the most frequent occurrence is the individual as a social isolate.

Third, and connected to these first two points, the most important matrix for social relations in Cold Bay is friendship. The lack of kin co-residence in town, beyond the family level, means that extra-familial (extra nuclear familial) relations are almost exclusively friendship relations.

Fourth, friendship relations themselves are strongly conditioned by workplace relations. This is particularly true of residence patterns since most employers provide housing in a centralized area for all or a major portion of their workers. Thus, one's neighbors are also one's workmates, and the ease of establishing friendship ties with one's immediate neighbors is reflected in the influence of occupation on associational networks.

Fifth, the importance of friendship as a basis of social relations is further enhanced by the paucity of voluntary associations, itself at least partly a result of the transience of the population. This lack of voluntary associations means that friendship must fill much of the gap in the possibilities for social interaction.

Finally, and underlying much of the preceding, the residents of Cold Bay have unusually strong links to areas outside of Cold Bay, and relatively tenuous links within the community. Cold Bay residents are on intimate terms with people from all over the region, state, and nation. These people have strong links outside the area, so from a social, as well as economic standpoint, Cold Bay is a community in a condition of stable flux. It is strongly centrifugal with a fairly rapid replacement rate. Thus, the individual actors change rapidly, but the overall structure remains fairly stable. A closer look at specific aspects of the social structure of the community will illustrate these contentions.

2.2.2.1 Primary Social Networks

Primary social networks are those consistent relations among individuals which carry a particularly heavy moral load. Primary social relations may be divided into four separate spheres, although to some extent there is inevitably overlapping among some of these areas. These spheres are those of kinship, family, neighborhood, and friendship. In essence, of course, familial relations are only a restricted and specialized instance of kinship relations, but the difference is important enough to justify their treatment as separate categories. Thus kinship here refers primarily to extra-familial relationships. By the same token there is inevitably a greater or lesser degree of overlap between neighborhood networks and friendship networks. Indeed, as we will see, this is particularly true in Cold Bay for several reasons.

Cold Bay is interesting in terms of primary relations for a number of reasons. First, the family is virtually the extent of kinship rela-

tions. Extra-familial kinship relations simply do not exist as there are no families within the community related to one another either consanguineally or affinally. Therefore, familial relations are particularly important and families are somewhat isolated. Neighborhood relations are interesting in that they are almost totally determined by workplace relations, since most of the major employers provide housing, thereby determining the physical location of their employees. The further result of this is the strong conditioning of friendship relations by occupation, since it is naturally more likely that strong associational ties will be formed with someone physically proximate rather than more distant.

2.2.2.1.1 Kinship

The importance of kinship in Cold Bay, that is of extra-familial kinship relations, is negligible. The nature of the community as an enclave which is controlled by corporations and agencies external to the town, and with goals and aims defined not in terms of the needs of Cold Bay but rather in terms of the needs of firms far removed from Cold Bay, means that the choice to live in the town is governed more by the choice of occupation than by choice of locale. Thus, even though the individual might desire to remain in a town where he has extensive kinship relations, his company may request that he go to Cold Bay for reasons which have nothing to do with his residential preferences. By the same reasoning, it is very unlikely that related individuals will both be working with corporations with interests in Cold Bay, and even less likely that both would end up drawing an assignment which put them in Cold Bay simultaneously.

Most villages in this region, such as King Cove, Nelson Lagoon, and False Pass, are dominated by less than half a dozen kindreds. Kinship is the basic matrix of all activity in such villages—not alone of social relations, but also extending to include economic, political, religious, and all other relations. In Cold Bay this is not the case. Not only is kinship, in the extended sense of the term used here, not operative "horizontally" (that is, across the current structure of social relations), it is not even a consideration "vertically" (that is in terms of intergenerational transmissions of, e.g., descent, inheritance, and/or succession). That is, to our knowledge, there has not been, in the history of the city, a single family group which has given birth to, raised, and brought to maturity children who have, subsequently, themselves established permanent residence in Cold Bay.

2.2.2.1.2 Family

If the extended family, and more distant kinship relations, are minimally important in ordering social relations and as the basis for social networks, then we should probably expect the family to be that much more important as a basis for social structure. It is true that the family is an important locus of social action in Cold Bay. The absence of more extended kinship networks means that the family is the major operative kinship system in the town. Families which reside in Cold Bay are close knit units who depend heavily on other family members for social interaction. However, the transient nature of the Cold Bay community

has operated to minimize the number of families present and, overall, to therefore minimize the importance of familial relations in the total field of social relations. This occurs in several ways.

First, a fair proportion of the residents of Cold Bay are short term transients. This group, even if married (and they are dominated by single men), does not bring its family to Cold Bay to reside because the nature of their work is such that they will be there for only a year or less and the economic and social cost of such a move is prohibitive. Second, even among the long term transients, a group which makes up the majority of Cold Bay's population, there are an unusual number of single people, with single males predominating. From the standpoint of kinship, then, and here we include the family as a part of the kinship network, Cold Bay is dominated by social isolates, primarily single males, who have no kinship links at all, either consanguineal or affinal, in Cold Bay. This is one of the things which gives Cold Bay its aura of impermanence. There are very few groups which are organized around kinship; literally none which are organized above the nuclear family level.

Nonetheless, this should not be construed to mean that the family is inoperative as a social matrix in Cold Bay. The family does assume some important functions among some segments of the population. Two groups in particular are the locus of most of the familial activity in Cold Bay. One is the long term transients who work for the major outside companies or agencies with interests in Cold Bay. These people are there for such a lengthy period of time that, if they are married, they bring their families with them to live there. This is abetted by the fact that most of these firms provide company owned housing, usually of a high quality, to their employees. The family is also fairly important among the permanent residents, which is the smallest of the social groups determined by length of residence.

Both of these groups, the families among the long term transients and those among the permanent residents, interact heavily with one another and form a social group essentially removed from the other, larger social groups in Cold Bay. Visiting is intense among these groups, and the longer the period of residence of the entire family the more extensive the associational links among the families. However, in discussing this point we are moving beyond the realm of the family itself and into the importance, and structure, of associational networks. We will cover this topic in some detail below, but before doing so we want to discuss the importance of neighborhood ties, as they are given somewhat unique expression in Cold Bay.

2.2.2.1.3 Neighborhood

As in most towns and cities, neighborhood is an important element of social relations in Cold Bay. The simple fact of geographical proximity makes the establishment of social ties, other things being equal, easier among neighbors than among those more widely removed from one another. This is certainly the case in Cold Bay. However, in Cold Bay there are two factors which complicate (some might say simplify) the situation and result in an unusual structure in associational networks.

First, neighborhoods in Cold Bay are anything but haphazard. Just as with the decision to come to Cold Bay initially, the decision concerning where one resides once in Cold Bay is under the control of external agencies rather under the control of the individual. Almost all of the residents of Cold Bay live where they do as a result of the provision of housing by their employer, and not as a result of personal choice. Some examples will clarify this. The workers of the Federal Aviation Administration live in a localized area of town, in the northwest corner of the built-up area of Cold Bay bounded by St. Louis Road on the west, Baranov Road on the north, and Kennedy Road on the south. Here there are eleven houses which house the FAA employees. The State of Alaska Department of Transportation also maintains a residential enclave, this one located across Baranov Road on the extreme northern edge of the built-up area of town. This enclave consists of nine homes, all on Veniaminov Circle; they are the only houses on that street. Just to the west of FAA housing, across one street, is a series of six woodframe homes which are the residences of the workers for the National Weather Service, all located on the same block. To the north of the Department of Transportation housing are three homes which are the residences of the employees of the Alaska Department of Fish and Game, again all in close proximity to one another. On the extreme northeastern corner of the built-up section of town are the offices and five homes (actually only four homes and a bunkhouse) for the employees of the Fish and Wildlife Service of the Department of the Interior. These homes are isolated from the rest of the town by being situated across Baranov Road on a small hill overlooking town on land owned by the Department of the Interior. In the heart of the built-up area of town, close to the Flying Tigers complex of bar, restaurant, store, and hotel, are five double-wide trailers which are the homes of the permanent workers of Flying Tigers. Reeve Aleutian Airline provides housing for many of its employees, although the bulk of their employees are local hire and therefore live in housing provided by the employer of their spouse, both on the second floor of the terminal itself and in the bunkhouse located across the street from the Flying Tigers complex. Finally, both RCA and the military personnel at the Cold Bay Air Force Base, located eleven miles to the northwest of the town proper, are housed at the Air Force Base in both trailers and apartment-like complexes.

The result of this structure is that in Cold Bay we have a remarkable example of the determination of geosocial structure by occupation. One's place of residence is determined by the company for which one is an employee, and since the vast majority of Cold Bay residents are here as a result of working for, or being married to someone who works for, major outside firms, this geosocial structuring is remarkably pervasive. It also means that one's neighbors are determined by occupation, and not by choice. There are similarities here to the idea of a "company town", except that we are accustomed to this concept in application to a small factory town in which a single industry or company is the dominant employer and for which, therefore, the vast majority of the inhabitants work. However, Cold Bay is what might be thought of as a "multi-company town", different from the traditional company town in that, first, there are several companies each of which regimentalizes its workers in terms of residential location and, second, most of the workers are transient, even if long term transient, rather than permanent residents.

Neighborhood, then and the character of one's neighbors, is a direct reflection of occupation, and like so much of the nature of Cold Bay's organization, be it economic, social, political, or otherwise, it illustrates the overriding importance of external agencies in the life of the town. There are some minor exceptions to this rule, however, although the minimal number of such exceptions serves more to heighten the perception of occupation determining residence than to diminish it.

First, there are some permanent residents of Cold Bay who have managed to gain their own land and build homes on it, thus breaking out of the occupation/neighborhood equation. However, to this date there are really only three, four if we stretch it, such cases. With these few exceptions all the long term transients and permanent residents live in places determined by occupation/residence. This predisposes these individuals toward certain patterns of associational relationships likewise based on residence. We will next examine the structure of friendship networks and note the influence of both occupational, as well as other, factors on those structures.

2.2.2.1.4 Friendship

Friendship forms the most salient context of social relations in Cold Bay. Since there are very few extra-familial kinship relations, associational ties are the dominant focus of social interaction. However, these associational ties differ depending on the residential (in terms of short term transience, long term transience, and permanent residence) group in which the individual finds him or herself, which is to say length of time the individual or family has been in Cold Bay. At the same time, two other factors are important in determining associational networks. The first of these is geosocial, revolving around the fact noted above that most of the residents of Cold Bay, short or long term, live in residential areas determined by occupation, and this clearly influences associational networks in ways in which we will clarify below. The final factor of importance in associational ties is marital status, with those married and co-resident with their spouse and/or families, under certain circumstances to be clarified below, forming one associational group and those who are single, or are married but not co-resident with their spouse and/or family (that is, who are in Cold Bay but have not brought their families with them) forming another associational network. These three factors, length of time in Cold Bay, neighborhood location, and marital status (or, more accurately, presence or absence of co-residence with a spouse and/or children) interact in each case to produce a predisposition toward one kind of associational network or another.

The first factor is length of residence in Cold Bay. We distinguish among short term transients (those who are in Cold Bay for a year or less), long term transients (those who are in Cold Bay for considerably more than a year, but not permanently), and permanent residents (those who have made Cold Bay their home). Again, the categories are not as rigid as they might first seem. A person who has been in Cold Bay less than a year might conceivably have bought property (from someone who, for example, had themselves bought property in the 1979 land sale), begun the construction of a house, and, in short, made the decision to

become a permanent resident. By the same token, an individual might have lived in Cold Bay for five years or more, yet still be alert for an opportunity to go elsewhere, having no intention of remaining in town any longer than necessary. In such a case the individual who had been here less than a year could be considered a permanent resident, while the individual who had been here five or six years, or even longer, might be seen as a transient. Nonetheless, these categories, given the caveats expressed here, can be useful for a mapping of associational networks.

In essence the associational networks parallel the categories determined by length or residence, with some exceptions. The short term transient group interacts primarily with members of its own group. First, this group is almost exclusively single males who are in town for a specified project and who will be here a year at the most. They therefore do not come to be heavily involved in the social networks of the long term transients and/or permanent residents. Second, most of them are housed either in the Flying Tigers hotel, the Reeve bunkhouse, or a similar structure near the center of town, so they are arranged roughly in an "inner-town neighborhood" which makes it most convenient to interact with one another, especially as they know few people outside that area of town and have little time to establish such relations. Third, even those of this group who are married are invariably not accompanied by their spouse or their children, placing them structurally in a position equivalent to that of a single person. Finally, this group almost universally lacks transportation while in Cold Bay, which generally restricts them to the "inner town" area.

For this group the major center of social activity is the Flying Tigers complex in the heart of town. It is there that they take all of their meals, since they only rarely have appliances for cooking in their rooms and since this is the only restaurant in town. However, the dominant focus of their social activity is the Weathered Inn, the bar in the Flying Tigers complex. This is the only true social spot in Cold Bay, and each night it is filled with a mixture of people, a large number of whom are short term transients. As these people rarely have vehicles or a means of transportation, they are restricted to the Flying Tigers complex for entertainment and are unable to get out to the Air Force Base except occasionally to take advantage of the recreational possibilities there.

Among this group, then, residential location, length of residence and marital status all reinforce one another to encourage formation of strong associational ties within the group and relatively tenuous ties outside the group. For the other two groups determined by length of residence in Cold Bay these three factors produce somewhat more complex patterns of associational networks.

Among the long term transients there are at least two major associational patterns. Long term transients may be in Cold Bay anywhere from a year to five years or more--indeed the upper limit of long term transience is difficult to define explicitly as even people who have been in town for more than five years are often avowedly transient and have no intention of living permanently in Cold Bay. However, in basic form we can say that the nature of the associational network for the

long term transient depends on the interplay of our three basic factors: residential location, marital status and time. The interesting aspect is that as the third factor increases, that is as the individual comes to have been in Cold Bay for a longer period of time, the determinative balance of the other two factors, area of residence and marital status, shifts accordingly.

When the long term transient comes to Cold Bay he finds himself placed involuntarily in a neighborhood which is composed of others who also work where he works, along with the families, if any, of these people. The long term transient is immediately, even though he has not been in town for more than a week, distinguishable from the short term transient by several factors. The availability of a decent home in a nice neighborhood is one of these factors. The establishment of a "permanent" household is another, including, if he is married, the presence of his wife and/or family. The individual is naturally assimilated, barring unforeseen problems, into the social networks which revolve around his workplace. This is because he becomes acquainted with his fellow workers much faster than he is able to get to know anyone else in town, and because this intimacy is reinforced strongly on a daily basis by the fact that he, and his family if he has one, are located on the same street residentially as those people he has come to know at work.

Thus, the first step in the assimilation of the long term transient, indeed of the permanent resident (since it is from the long term transients that we are most likely to get the emergence of the small core of permanent residents, a point we will return to below) is the establishment of an associational network based primarily on occupation. However, once the long term transient has been in town for at least several months, and perhaps as long as a year, he begins to shift those associational links in a way which can be attributed more to marital status than geosocial structure. Thus, once the individual is comfortable in Cold Bay he will, if he is single, begin to establish relations with other single individuals who are also in Cold Bay for extended periods, either long term transients or permanent residents. This group then grows to become his primary social network, replacing or augmenting that based on neighborhood/occupation. To a certain extent this network, or networks, also revolves around the Flying Tigers complex, and it is usual to see the group of long term singles in the bar quite often, at least several times a week and sometimes every evening (particularly at happy hour). However, although they are similar to the short term transients in this respect, they are different in that the bar does not exhaust their social relations. This group also involves themselves in extensive social interaction outside the Flying Tigers complex. This interaction takes several forms.

First, the fact that this group is in town for an extended period and that they usually work for one of the major companies in town means that they have much nicer residential accommodations than is the case for the short term transients. They therefore have frequent get togethers and parties at one another's homes to which most of the long term singles in town come. Almost every evening the chances are fair that someone will be doing something which will serve as an excuse for a get-together. Almost invariably this includes dinner, drinking, listening to records, and so on. This is particularly true in the summer, when there are

always large stocks of fish like salmon or crab to serve as a basis for a meal and a party. However, we are told that although the pace of such parties slows in the off-season, it is rare for a week to go by without someone having a party or get-together of some kind. Of course, there are also many sub-groups among this general group, and frequently only a portion of the general group will come together for a smaller gathering. Also included in the activities of this group is a percentage of the married group, but almost always these are the younger marrieds who generally have no children--it is unusual for anyone over thirty or thirty-five to be included in this group unless they are single.

The second major social activity of this group which occurs outside the Tigers complex is that which involves hunting or fishing. Most of the people who remain in Cold Bay for any length of time come to involve themselves in either one or both of these activities. Especially during the period from spring through summer to fall, each weekend a substantial group of these people are involved in the outdoor activity appropriate to the season. Effectively this means fishing during the spring and summer, hunting (especially caribou, but occasionally red fox or bear) in the summer and fall, and hunting geese in the fall. These activities usually include the same group which parties together, and indeed these activities often provide the food which is the basis for the meal at the party. These individuals, as long term residents of Alaska, also have the right to subsistence licenses to fish for salmon and hunt caribou, and these are generally group activities. This is particularly true of fishing because a subsistence permit allows one to take up to fifty salmon at a time with a set net, and this activity requires several people in order to be done properly.

A final activity which members of this group often pursue together, though in smaller groups as a rule than those activities mentioned above, involves taking time from Cold Bay and going to "town". Town is Anchorage, and it is unusual for one of these individuals to make a trip to town alone. A trip to town usually lasts for at least a weekend, and often for as long as a week or more, and is seen as a chance to kick up one's heels, to interact with women (since most of this group consists of single males), and to generally partake of the excitement of the city. Once an individual announces that he is planning a trip to town it is almost inevitable that one or more people from his associational network will decide to go along, and the event is turned into a festive occasion. This happened several times during the period the researcher was in the field and, in discussions with people there, this appears to be the normal course of events.

The second major subgroup of the long term transients are those who are married and older or married with children. When they arrive in Cold Bay initially their social networks are very similar to those of the singles and young marrieds who arrive as long term transients. That is, they are in a situation in which their occupation is central in determining their associational networks. They work at one place with a particular group of people, and they live in another place, but in company housing and surrounded by the same group of people with whom they work. Thus, this occupational group forms the initial basis of their social networks. However, with an increase in time the rationale for their social networks undergoes a change from occupation to marital

status with important implications for the nature of that network.

Once a married couple with children has been in town for a fairly long period of time they begin to interact with other married couples with children, or with older married couples who are childless. This proceeds regardless of the occupational affiliations of those involved in this emerging network. Thus, the associational network comes to cross-cut occupation as the individuals remain in town for increasing period of time. This occurs as several simultaneous processes. The couple may need people with whom they can share childcare responsibilities, and the nature of reciprocation makes other married couples with children the logical choice - they can take care of their friend's children one evening and have them take care of their's the next. Children, of course, also imply attendance at school, and involvement in school related activities also brings together groups which cross-cut occupational affiliation.

There are several social venues which characterize this married group with children among the long term transients. They do not take advantage of the bar at the Flying Tigers with the regularity of the single and young married group, although they do visit it occasionally. Most of their social activity, however, is spent in visiting other members of their social network and in parties and get togethers with other members of their group. Usually these events take place at the home of another older married couple, and they involve dinner, music, and conversation. This group also involves itself in outdoor activities such as hunting and fishing, particularly among the men of the group. It is interesting that when the researcher went set-netting for subsistence with several friends that one group consisted solely of single, male, long term transients while another group at the same site consisted of five males, all married, and all long term residents. This is evidently the normal pattern for both fishing and hunting outings.

The final group based on length of time resident in Cold Bay is the permanent residents. Though there is no necessary correlation between length of time in Cold Bay and permanency, in general these are people who have been in town at least five years and often much longer. Of course there are a number of people who have been in Cold Bay for longer than five years who still do not see themselves as permanent residents and who continue to actively search for acceptable alternatives to living in Cold Bay. The permanent resident group is the smallest of any of the groups we have discussed here.

The permanent resident group contains within it a certain proportion of people who violate the rule discussed above concerning the equation of occupation and residential location. These are the permanent residents who have managed to gain some land of their own and may even have been able to build a home on that land. There are not many of these people, however. In the last fifteen years there have only been two opportunities for local residents to purchase or homestead land. The first was prior to 1968 when it was possible for residents to homestead some land to the north of Trout Creek which was, at that time, held by the BLM. Two local residents took advantage of that possibility and homesteaded sites (recently there was a rush by local residents to homestead more of that same land, but it turns out that those homesteads are illegal--this

is discussed in an earlier section). Neither of these sites has been developed yet. The second opportunity came in the 1979 sale of state-owned land by the Department of Natural Resources (this is also discussed above). Although that sale was dominated by outsiders and speculators, which inflated the prices beyond the reach of most locals who had considered bidding on the land, about half a dozen local residents were able to get land. Of these, three have actually moved onto their land and a fourth has allowed a friend to move a cabin onto his land. Thus about four of the permanent residents have moved onto land not controlled by the state, and another four or so have land onto which they can move when they are able to afford to develop it.

The fact that at least a portion of the permanent resident group does not live in occupationally determined housing means that occupation exerts less influence on the structure of their social networks than is the case among the other groups in town. This group is therefore more free to determine their social network by choice rather than by the influence of the workplace. In fact, by the time an individual has been in town for five years or more this process, as we saw above with reference to the long term transients, is likely to have occurred at any event. However, in the case of the permanent residents this aids in establishment of another of the characteristics of their social networks - isolation. It is among the permanent residents that we find the greatest tendency toward restriction of the social network to the family with very little interaction with those outside the household. They are in some cases living in areas more removed from the built up portion of town, particularly those who have built on land they own themselves, and this allows them to reduce interaction at their option, something which is much more difficult for those living in company provided housing which resembles an extremely small tract home development.

This tendency toward isolation is abetted among the permanent resident group by their minority status within the community. In a sense they see themselves as a small in-group while everyone else about them, even the long term transients, is passing through. They see themselves as committed and concerned with the future of Cold Bay, while those who will inevitably leave the town eventually may become involved for a brief time but will finally abandon the enterprise. This is not to say that this group is totally isolated, but the tendency is stronger here than in any other group. In fact the married couples among the permanent residents do tend to be involved most strongly with one another, but are also involved, in their social networks, with the married couples among the long term transients. However, the people with whom the permanent residents establish the most intense social relations are not long term transients but other permanent residents. These people are always aware that even the long term transients will be there for only a certain period of time, and that if they establish deep relations they are bound to be disappointed in time.

2.2.2.2 External Relations

One aspect of the social networks of the permanent residents has to do with relations with people outside of Cold Bay. People who have been here ten years or more, almost all of whom are permanent residents, have established contacts with other permanent residents in towns and villages all over the region, and there is an inter-community network of considerable vitality. This is particularly true of connections with King Cove, Unalaska/Dutch Harbor, Nelson Lagoon, and other villages in the immediate vicinity.

These external relations raise a final point about the social structure of Cold Bay in general. The structure is outer directed; it is centrifugal. This is true of all groups in Cold Bay for various reasons. Clearly the short term transients have their major social networks in areas removed from Cold Bay, whether it be other parts of Alaska or the lower forty-eight. These people are only in town for a brief time and both friendship and kinship networks are much stronger outside the town than within it. The long term transients also have very strong outside networks, also in areas often far removed from Cold Bay. Though they are in town for a considerable time, and they do develop associational networks within the community, the fact that they know they will eventually leave and that they do not have any kinship relations in town means that they are careful to maintain outside connections in anticipation of the time when those networks will be reactivated on their passing from Cold Bay. Even the permanent residents, as noted above, have extensive external social networks. In their case, however, these outside networks are more concentrated in the particular region in which Cold Bay is located rather than in more distant areas, since they tend to be in the community the longest and have the most invested in establishing lasting social relations with people in the immediate vicinity. Part of the reason even the permanent residents have strong outside links is the fact that they are so outnumbered in Cold Bay by short and long term transients with the result that there are few people in Cold Bay itself with whom lasting relations can be established.

The community is very tenuously held together with internal social networks and is remarkably outer directed. This is largely a result of the nature of the community as a transportation and communications center and the resultant transience of its population. It makes it very difficult to exactly define the limits of the Cold Bay social system, since it is so extensively interlinked with outside structures. In this sense Cold Bay approaches a limiting case for small towns. In spite of the fact that we are accustomed to small towns which are tightly knit moral communities with a highly insular quality, Cold Bay illustrates that this is not a necessary correlate of small size. Through the unusual series of events which spawned the town and the continuing role it has been called on to play a social structure has emerged which draws individuals outside the community itself and makes the establishment of a strong community network, a strong sense of community, very difficult and highly unlikely. To a certain extent these characteristics are probably shared by other communities which find themselves occupying a central role as communication and/or transportation centers. The very nature of those enterprises forces interaction with and awareness of the outside world to a greater extent than do many other kinds of activity.

This is, of course, a continuing theme in all aspects of Cold Bay social structure, the extent to which the community finds itself both directed toward and by the outside. It has retarded development of a sense of community, and, by extension, comprehensive planning for the future of that community. We now turn to examine other aspects of Cold Bay social structure, particularly political and religious aspects, and we will see that the same pattern obtains here which has been so apparent in the structure of social networks.

2.2.3 Political Structure

2.2.3.1 Local Affairs

Until recently there was no internal political structure to Cold Bay in the sense of a formalized political entity which could be said to be concerned solely with Cold Bay at the expense of outside interests. This has changed with the incorporation of the community as a second class city in January of 1982. Prior to this, however, political power was synonymous with state power. The major force in town has been, for past twenty years or more, the State of Alaska, particularly as represented by the Department of Transportation.

Prior to incorporation the Department of Transportation was the most powerful institution in town and took, almost by default, major responsibility for political decisions. The department was responsible for airport security, and since the town itself is almost completely located on airport property this naturally entailed responsibility for the town as well. What minor problems of law enforcement arose were generally handled by the security man from the DOT.

With the incorporation of the town this situation changed in law but less so in fact. The town is now constituted as a mayor-council form of government with seven council members from which a mayor is selected by the council. Ostensibly political power is vested in these individuals. The members of the council tend to be long term transients with some permanent residents. Effectively this means that those who are in particular positions of power in the major companies or agencies in the community have transferred this power to the political arena. The mayor of the community is also the head of the FAA contingent and as such combines two of the most powerful positions in the community. It is interesting that long term transients form a majority of the council, both because they represent a majority of the voters and because of the reticence on the part of some permanent residents to become actively involved in community affairs. However, there are several permanent residents who have become involved and who are represented on the council, and they form a sizeable minority of members.

One exception to the spillover of power from major employers in town to the political arena is the head of the Department of Transportation. This person stood for office and was elected to the City Council, but was subsequently told by his employer that serving both as head of the DOT and as a council member was a conflict of interest and that he would have to give up one position. Since the council position is unremunerated he had little choice but to give it up. The result of this has

been a dilution of political power and a wider distribution of political responsibility in the community.

Paradoxically, then, the incorporation of the community, which would appear to be an act of political consolidation, has served as a mechanism through which political power in the town has become decentralized. No longer is there a single authority in the community, since it is now headed by a group of seven people from somewhat diverse backgrounds. Nonetheless, too much can easily be made of this redistribution of political power. Despite the council, the city has very little real power yet. It controls no land, has a very limited income (the entire year's budget for 1982 is \$26,000, and all revenues thus far are a result of state revenue sharing), and is dominated by long term transients who will ultimately pass from the scene. Much of the political power in the community remains in the Department of Transportation. The DOT still has ultimate jurisdiction over most of the community as a result of the fact that it is located on airport property.

2.2.3.2 Social Control

Means of social control in Cold Bay are essentially informal. The major means of controlling social behavior which is considered to be offensive is through gossip, ridicule, censure, and other informal means. There is very little crime, and what crime does exist is relatively small scale.

Interestingly, the continued power of the head of the DOT is further abetted by the fact that the community has as yet not hired a patrolman, nor is there a trooper stationed in the community. When the community incorporated it gained the right to have a patrolman stationed in the town, but it has not taken advantage of this right yet. Many in the community express concern over hiring a patrolman as they feel that such a step would be a tacit admission that the community has a crime problem which, so far, it does not. People prefer to resort to less formal means of conflict resolution and will probably continue to resist institution of a patrolman's position as long as crime continues to be essentially petty and infrequent as it is now. This means that the DOT security is still the only form of permanent law enforcement in the community, and reinforces the perception of the DOT as the true locus of effective political power.

2.2.4 Religious Structure

There is a small chapel in Cold Bay located in a quonset hut across the street from the Flying Tigers complex. The church is ostensibly inter-denominational, but in fact it has a definite Baptist cast to its liturgy and services. The church is not heavily subscribed, but it does attract a fairly regular following for Sunday services. Usually about twenty people are in attendance. The church has made several attempts to become more involved in the community including the establishment of a Sunday school program and a teen program, but these have been intermittent and have aroused relatively little interest in the community. Essentially most people in Cold Bay have little interest in church or church activities. They are in town for only a certain period of time and it is understandable that they are hesitant to become deeply

involved in such essentially social activities when they know they will soon be gone.

Most of those who do attend church services are long term transients or permanent residents. As such, even though there are relatively few people involved, the church does perform a function as a means of social integration, one of the few such structures in the community.

2.2.5 Education

Education is an area in which Cold Bay has been upgraded in the last few years, with generally positive results for the residents of the town.

Cold Bay has an elementary and a secondary school, both located in the same building. The school was expanded from K through 9th grade to K through 12th grade in 1978, and now offers a high school diploma (Alaska Department of Community and Regional Affairs, Community Profile, 1982). This has been greeted with pleasure by local residents who now feel no pressure to leave the community when their children come of age for high school. The school is part of the Aleutian Region School District which is a state-funded Rural Education Attendance Area.

The Cold Bay school was originally built in 1961, and has since been renovated and expanded twice, once in 1967 and again in 1980. The school now consists of four classrooms, one media center/library, and several smaller utility rooms. In addition the community has recently received state approval for an expansion which will consist of a multi-purpose media room to be funded with 1.3 million dollars. The community feels that the most favorable form of expansion would be the construction of an entire new school facility, but had to settle for the more modest plans for expansion. The social consequences of this addition will be discussed in a subsequent memorandum. The Cold Bay School is located in the community, between the Flying Tigers Complex and the apron of the airport on which Northern Peninsula Fisheries, Peninsula Airlines, and other agencies are located.

The area served by the school is strictly local. The Cold Bay School takes its students exclusively from Cold Bay itself, although it also serves the Cold Bay Air Force Base at times when there are married couples resident there, particularly those who work for RCA.

There are currently four teachers to serve the students of the Cold Bay School. The grades for which the teachers are responsible vary from year to year with the school population. In general two are responsible for the high school students and two for the elementary school students.

Enrollment varies somewhat from year to year, which is to be expected in a community as transient as Cold Bay. Nonetheless, there has been a gradual but steady increase in the student population over the last decade. Current estimates of enrollment are between forty eight and fifty five students.

The only administrator is one of the teachers who acts as overall administrator (principal-teacher) for the facility. All school improvements

and changes, hiring of teachers, and so on, are under the control of the REAA. All funding as well for the Cold Bay School comes through the Aleutian Region Rural Education Attendance Area, which is a state funded agency headquartered in Anchorage.

There are several incentives for the children of Cold Bay to pursue post-secondary education as well as disincentives to leaving early. First, as noted above, they do not have the significant option of a high paying fishing job on leaving high school (or during high school) which some others in the region have. Second, the parents of these students are generally much better educated than the people in the surrounding villages. Most of them come from outside the region and only arrive in Cold Bay following completion of extensive education and with a good deal of technical, white collar experience. This is a group to whom education seems natural and desirable, and these attitudes are inculcated in their children. Third, most of the residents of Cold Bay will not remain in the community for more than a few years, and therefore they are likely, by the time the child is ready for college, to remove to an area in which post-secondary education is much more generally available.

The disincentives to higher education in Cold Bay are negligible, particularly in comparison to the surrounding region. There is no possibility of lucrative fishing, no conflict with ANCSA claims for land, and, in general, few reasons why a child from Cold Bay would choose not to attend post-secondary schools.

The school is not as central a facility in Cold Bay as might be expected, partly because there are relatively few families and, by extension, students, so interest is not high. The school does act as a venue for social activities at times and occasionally sponsors a basketball or baseball game with neighboring communities, but has not become a genuine focus of the community. The school has, however, changed in the perceptions of local residents in the last few years as a result of its expansion from kindergarten through ninth grade to kindergarten through twelfth grade. This has meant that families with children do not feel the need to leave town when their children come of age for high school. This means that families can, on the average, stay in town longer than was previously the case.

2.2.6 Health Care

Health care has never been perceived as adequate in Cold Bay. However, in the summer of 1982 a clinic was constructed which promises to greatly improve the level of health care in town.

The major facilities in Cold Bay are the clinic, which is only just being completed, and the facilities at the Air Force Base. Beyond these the residents must depend on transport out of town for serious or emergency medical attention. Currently the service capacity of medical facilities in town is extremely limited. In town there are at least four Emergency Medical Technicians who provide basic service to the residents. For more serious matters the only current local alternative is the medic at the Air Force Base. There is a small and modern clinic

at the base which is able to provide a wide range of basic medical care. There is currently no local facility for serious medical problems or surgery, and residents must depend on air transport to other parts of the state, particularly to Anchorage, in such an eventuality. This situation is in the process of change with the opening of the clinic which should be in operation by the time of this writing (winter 1982-1983). The clinic will have facilities for three examination rooms, an emergency room, a laboratory, a pharmacy, and a kitchen. It will be able to accomodate approximately four to five people at one time.

Currently the only emergency services available are the EMTs in town and the medic and clinic at the Air Force Base. Serious emergencies, as noted above, must depend on transport by air out of town to a venue where more extensive care is available. With the completion of the clinic an important addition will be the operation of an ambulance by the city. This will mean emergency transport will be available for those suffering from medical problems.

The clinic was constructed by RoyCo, a construction company out of Anchorage, and was of innovative design. The building was pre-fabricated out of "W-panels" which are a fibreglass composite. These panels were connected to give the complete outer form of the building, and following this they were covered in several layers of insulating cement and stucco which served at the same time to stiffen the entire building into one seamless unit. This method is intended to yield a building with excellent insulating properties in both hot and cold weather, and one which can withstand high winds as a result of its unitized construction. The city is currently considering negotiation with a doctor, from either Kodiak or Unalaska/Dutch Harbor, to provide intermitent care through regular visits to the clinic in town.

Training is also an area of weakness currently in Cold Bay. The only local training program available is the EMT program which certifies Emergency Medical Techs as level I, II, and III. However, with the opening of the clinic it is anticipated that these EMTs will have, in general, an opportunity to upgrade their skills. It is unclear at this time whether the opening of the clinic will include additional training programs.

Current levels of staff experience are not high. Most of the EMTs have had no experience previous their arrival in Cold Bay. This, of course, may change with the opening of the clinic and the begining of regular visits to Cold Bay by a doctor.

One of the problems which several people mentioned during research in the town is that of "burnout" among the Emergency Medical Technicians. This was evidently somewhat of a problem until very recently. The EMTs at one time were actively upgrading themselves, but this came to a stop after a while. However, with the energy and excitement generated by the construction of the clinic there appears to have been somewhat of a resurgence of interest among the medical paraprofessionals in town. Whether this will carry over after the completion of the clinic is yet to be seen.

Up to now there has been little charge for what health care has been

available, but with the opening of the clinic this situation is likely to change. The use of the EMTs by residents of Cold Bay is generally free of charge. Any medication or equipment required is generally paid for. With the opening of the clinic charges will be made for the use of clinic facilities, although as yet the schedule of payment has not been worked out.

Provision of health care to the residents of Cold Bay has thus far been of little direct cost to the government. EMT training is usually subsidized by the state, but this has not represented a major expense. The government did make a substantial investment in the construction of the clinic, almost all of which was paid for through state funds. The total investment in the clinic will eventually be approximately \$300,000 (\$296,785.00 according to the Contractor Pay Estimate provided by RoyCo and dated August 23, 1982), almost all of which will be state provided.

Health issues are of relatively little concern to people in town. The population of Cold Bay is unusually young and in good health. The nature of the town as a transient center, full employment of the population, and youth all contribute to good mental and physical health. Medical and psychological issues are generally relatively minor.

The population is in unusually good health, and this extends to the use of alcohol as well. Though alcohol abuse is potentially a problem throughout rural Alaska, it has not become one in Cold Bay. One of the few contexts for social interaction available to local residents, particularly single males, is the Flying Tigers Weathered Inn. However, all these people manage to hold a job and assume the responsibilities associated with providing for oneself. No one can let alcohol take precedence over work, for if they did they would end up terminated and, in that case, would have to leave town. In this sense the community is self-purging. Those with a serious alcohol problem simply cannot survive in town. Another factor which retards the abuse of alcohol somewhat is the fact that the only bar in town does not open until four o'clock in the afternoon. This is perfectly logical since everyone in town is working until that time anyway, but it also helps to reduce the daytime abuse of alcohol.

There are few serious psychological or stress-related problems in Cold Bay. There has been no reported suicide in the history of Cold Bay as far as our research could ascertain. Depression does not appear to be a major problem in the community, at least partly because of the full employment conditions. Anyone suffering from depression of such magnitude that it would lead to suicide would probably run into job and personal difficulties which would preclude his staying in Cold Bay long before the final suicidal act.

There appear to be very few accidents of a serious nature in Cold Bay. The only exception to this is automobile accidents and an occasional accident involving the crash of an airplane. However, rarely do automobile accidents result in injury since it is uncommon to travel at more than thirty miles per hour in town. While doing research in town it did become apparent that there are occasionally more serious automobile accidents along the road between town and the Air Force Base. Many people drive at speeds of up to fifty-five or sixty miles per hour along

that road and this can easily result in skidding and sliding leading to a crash, particularly when the road is wet as is often the case.

As with physical health, the residents of Cold Bay are generally in good mental health. Once again, the ultimate factor in this mental health is the self-purging nature of the community. Those who have such severe psychological problems as to be debilitating simply cannot remain in town if they cannot hold a job responsibly.

The people who have come to Cold Bay are generally prepared for the difficulties which they will face. Cold Bay is relatively isolated, but this isolation is mitigated substantially by the airport and the daily traffic which comes through the community. Alienation does not have a chance to become a chronic problem since most are only in town for a set period of months or years and know they will eventually be leaving.

There is one group, however, for whom alienation is somewhat more of a problem. This is the group of unemployed wives of men who have come to Cold Bay for outside corporations as long term transients. It may prove difficult for these women to become involved in community activities, since there are relatively few, and to construct satisfying social networks. These wives appear to be under the most strain of any group in town.

The problem of neurosis is a negligible one in Cold Bay. There is no professional psychologist or psychiatrist in the community so it is difficult to be certain that the incidence of neurosis is as low as it appears, however we found no overt indication that this was a problem in the community. Psychosis appears to be nonexistent in Cold Bay. Once again, the need to maintain one's job in order to stay in the community means that someone suffering from a psychosis, which makes it difficult or impossible to operate responsibly on a daily basis, simply cannot long survive in Cold Bay. At any rate, we saw no incidence of psychosis nor did we hear of any reports of psychotic behavior. This is also the case for psychophysiological disorders.

Just as with mental and physical illness, and for much the same reasons, mortality rates are unusually low in Cold Bay. This is especially a result of the fact that the town is a full employment town, controlled by external companies and agencies, and with no private land available for building. This means that the individual remains in Cold Bay only as long as he or she or one's spouse can hold a job with one of the major employers in town. Therefore there are no retired people in town and there are very few elderly citizens, which reduces the level of mortality greatly.

Accidental death is the only form of death which is important statistically in Cold Bay, and even this is very low. The major source of accidental death is plane crashes, since the town has a major airport and serves as the air center of the entire region. Most often these are crashes of private planes, although there have been less than half a dozen of these in the last twenty years. Auto accidents could also potentially be lethal, though we heard no reports that such had occurred. Finally, occasionally someone may be attacked by a bear, as one individual from outside the community was several years ago, but

this is very rare.

There is little incidence of the more serious self destructive or homicidal crimes in Cold Bay. There have been no reports of suicidal ideation or behavior in Cold Bay. There have been no reports of homicide in the history of Cold Bay according to informants in the community.

2.2.7 Social Services

The level of available social services in Cold Bay is very low. Partly this can be explained by the fact that the community is a relatively young and healthy one and partly by the fact that these people are "pre-selected" by their companies before they arrive in town.

There are no facilities in Cold Bay devoted to social service per se. The only places in which even rudimentary social work occurs is through the church, which occasionally offers discussion groups covering various topics, and the Air Force Base. There is no one in Cold Bay who has been trained specifically to extend social services and provide counseling for individuals needing it. No professional help is available. The pastor of the church does provide voluntary aid should it be requested.

What social services are available are provided by volunteers with little but practical experience in dealing with such issues. There is no one in town with professional experience in such issues. Since there are no professional workers in town familiar with social work the issue of commitment does not apply to Cold Bay.

Social problems are not marked in Cold Bay. Again, this is partly because of the built in guarantee of full employment and the relative youth of the population. Though certain social problems are acknowledged, in no cases are they seen as so serious as to require professional care or counseling.

Alcoholism is not a social issue in Cold Bay. The people of the town realize there is little else to do of a social nature, and they accept drinking as appropriate as long as it does not interfere with the performance of one's duties, both to employer and to family. Alcohol is primarily partaken of by males, and especially young and single males. This is a result of the general absence of other social activities, particularly involving women.

The issue of social disintegration is an interesting one in Cold Bay. In fact the community is very loosely integrated to begin with as a result of the transience of the population. However, the people who come to Cold Bay expect this to be the situation when they arrive. The result is a social structure which appears to be disintegrative, but without the attendant psychological and social consequences we are accustomed to associate with such situations. The social structure of the town is extremely atomistic, particularly with reference to the unusually high number of single males in the community, but the members of the group see this as a necessary sacrifice for what most define as a future goal which justifies that sacrifice. What appears, then, to be social disintegration resolves itself into an extremely centrifugal

community. Cold Bay is not so much disintegrative as it is integrated into a much larger social world than the town itself. The people, then, do not suffer lack of social integration as a result of the disintegrative aspects of Cold Bay, but gain much of their needed sense of belonging from networks outside the community. They do not lack social integration, they simply do not depend on Cold Bay for it.

Violence does not appear to be a problem of any magnitude in Cold Bay. There is very little violence in the bar or as a result of drinking. In the time the researchers spent in the town the incidence of violence was extremely low. There was also no example of wife beating to our knowledge. The small number of families reduces the possibility of such activity.

Stress is somewhat of a problem among certain elements of the Cold Bay population, particularly among the women. Almost all the women in town are married and came to town with their husbands when they were transferred by an outside agency. The husbands have extensive social networks immediately as a result of their job, but many of the women find it more difficult to establish a viable social network. There are not many families in town, and the opportunities for social activity are severely limited. Many women try to find work with Reeve, which is the largest hirer of local help, and Tigers, both to supplement income (and usually savings) and to keep active. Although we mention this as a problem, we saw no instance in which stress had advanced to such a degree that it became a behavioral problem.

There is no regular provision for treatment of social problems in Cold Bay. The only available outlet is the pastor of the church, and this is on an irregular basis. Nor are there any provisions for regular or professional counseling for social problems in Cold Bay. Therapeutic intervention is also lacking in town. It is unclear at this time whether the completion of the clinic will lead to the provision of some psychological or social counseling. As of now there are no plans for such programs, nor an apparent need.

2.2.8 Recreation

In this section we will discuss recreational vehicles, music and electronic means of recreation, subsistence-related activities, and visiting and vacation patterns.

Cold Bay residents utilize many kinds of recreational vehicles. Particularly noteworthy is the number of airplanes in the community, symptomatic of the status of the town as an air crossroads of the region. Cold Bay, with a large and thoroughly modern airport, is the location of a large number of aircraft. There are a number of people in town who have pilots licenses but depend on other means as their primary source of income. That is, these are people who fly primarily for recreational purposes. There are also, of course, numerous people who are in Cold Bay often and who fly for a living but also fly recreationally when they get the opportunity.

Boats are much less utilized for recreational or subsistence purposes.

The major problem is the lack of any facilities, such as a small boat harbor, for docking and for protection during rough weather. There is not even a breakwater for shelter during heavy weather. Cold Bay also lacks a fishing infrastructure so there are few boats available for recreational purposes in the first place.

Another popular kind of vehicle is the pickup truck. Cold Bay has a large variety of trucks, many of which are utilized recreationally. Pickup trucks are owned by a great number of people, perhaps by half the households in town. A large percentage of these are four wheel drive vehicles. Trucks are by far the most popular type of vehicle in town, both for working and for recreation.

Trucks are also an important adjunct to other recreational activities in which the driving of the vehicle is not the primary aim. When traveling to streams for fishing or to Frosty Mountain for hunting it is nearly mandatory to have a four wheel drive vehicle. Such trips often involve driving over stretches of tundra, fording small streams, and other activities which demand a four wheel drive vehicle.

Jeeps are also popular in town, though not to the extent to which trucks are. Several people have Jeeps, Chevrolet Blazers and Ford Broncos. One problem with these jeep vehicles is that they generally are not as airtight as the pickups and therefore are more difficult to keep warm during the fall and winter.

There are also a number of three wheel motorcycles in Cold Bay, at least as many as a dozen. They are a very popular and convenient mode of transportation around town since the built up portion of the community is not large. There are considerably fewer snowmobiles. Though there are a few, the winter conditions in Cold Bay are not as conducive to snowmobiles as they are in much of the surrounding region. This is because though the town gets a fair amount of snow it does not receive as much as most of the surrounding communities. In addition, the high winds which are endemic to the community often blow snow away as fast as it falls.

Cold Bay residents take full advantage of modern electronic means of recreation. Video recorders are very popular. Since the number of television stations is limited (see below) videotape movies are very popular forms of entertainment. Almost every household in town has a betamax or other video recorder. It is a popular pastime to, when visiting "town" (i.e., Anchorage), take along one's video recorder and tape movies shown on closed circuit systems in motels. These are then taken back to Cold Bay where they are a staple of local entertainment. Video games are also increasingly popular. The most prevalent system is Atari, followed by Intellivision. These systems are found in an increasing number of homes and are particularly popular among families with children.

Television is limited to two stations, one cultural and educational and the other entertainment, beamed into town via satellite by Alascom. Radio is limited as well, and is generally restricted to the Armed Forces Radio Network which is transmitted by satellite from Anchorage. The lack of television and radio results in an emphasis on stereo and

other recording systems as means of entertainment. Very few houses do not have a sophisticated phonograph system, and most have both a record player and a tape recorder.

Subsistence related activities are less important means of recreation in Cold Bay. Residents do not involve themselves in such activities with nearly the frequency of the surrounding communities. They do take some advantage of the excellent opportunities for such activity in the area around the town, however.

Fishing is the most pursued of these activities. From early June, when chinook (king) salmon begin running (in only modest numbers in this area), through the large red runs of July and August and to the pink, chum, and, finally, silver runs toward the end of summer Cold Bay residents take advantage of subsistence permits to take these fish. Each subsistence permits allow the individual to take fifty fish, and is generally renewable up to four times. A major source of food during the summer is salmon. Other marine sources of food utilized by Cold Bay residents include several species of crab (tanner, king, dungeness), halibut, and Dolly Vardens.

Hunting is also a pastime of some importance among Cold Bay residents. By far the most important resource here is the Barren Ground Caribou. Cold Bay residents, as residents of the State of Alaska, have the right to subsistence permits which allow them to take up to five caribou per year at virtually no cost. Several people in town take advantage of this each year and caribou is a major source of food from fall onward. "Boo Burgers", ground caribou made like a hamburger, are a popular local fare.

These subsistence activities, as noted above, are not only a means of getting food, but also serve as a focus of social interaction. A fishing trip usually consists of at least three or four men who spend the day together enjoying one another's company as much as the fishing itself. The same is true of hunting and other subsistence activities.

Visiting and vacations are also popular recreations among the residents of Cold Bay. Visiting is particularly popular within the community, while vacations take residents to far flung areas of the globe.

Visiting is popular among the residents and is a daily activity for many. The proximity of all residents within a small, circumscribed area of town makes such visiting relatively effortless. Visiting occurs among several distinct social networks, organized as outlined in the section on social networks according to an interplay of residential location, length of time resident, and marital status.

Intercommunity visiting and vacations are also popular among Cold Bay residents, but does not occur extensively with the surrounding communities. Since it is a non-Native enclave in the midst of Native settlements, and somewhat more involved in more extensive and distant social networks, Cold Bay residents visit more distantly removed areas most frequently when they take trips.

Interestingly, though Cold Bay residents visit other settlements in the

region relatively little (except for the visits which are a result of official capacity), there is almost nobody in the region who has not been in Cold Bay. This is a result of the airport. Therefore, many people in Cold Bay, particularly businessmen and official representatives, know a great many people from other communities at least casually.

Cold Bay residents visit interregionally and interstate as often as regionally. The major destination for both visiting and vacationing in the state is Anchorage. Many people in Cold Bay consider themselves permanent residents of Anchorage, not Cold Bay. Anchorage is also the nearest "real city", and as such is the favorite destination for those who simply want to take a week or weekend and "do the town". The most popular states for vacationing and visiting both are Washington and the west coast in general. Hawaii is also very popular, as it is surprisingly close to the Aleutians and airfare is modest.

Finally, the Cold Bay School is the venue for social occasions. It is used for movies and potlucks as well as PTA meetings and other school functions. The school also has a program of intramural athletics, and on occasion fields a team for competition with other schools in the region. Basketball is particularly popular in this region of Alaska, with softball a close second.

In the near future the school will be expanding its role as a community center with the addition of a multi-purpose room. Scheduled for construction in 1983, the room will allow for expanded space in which to show movies, hold meetings, and so on.

3. FORECAST SCENARIOS

3.1 Introduction

In this section of the report we present an analysis of projected levels and directions of socioeconomic and sociocultural change in the community of Cold Bay. This analysis is based on the data contained in the ethnographic baseline study is predicated on a set of assumptions provided by the MMS Social and Economic Studies Program of probable scenarios based on varying levels of development of oil-related activity.

We begin with a brief introduction describing the impact categories and forecasting methods. Then, forecasts of varying levels of development will be constructed in one primary and two secondary scenarios. Within each scenario, the analysis will proceed by discussing the possible impacts of these levels of development on the community subsystems or impact categories outlined in the "Methods, Standards and Assumptions" section of this report (see Appendix A).

Our objectives in this introductory discussion of the forecast scenarios are fourfold. First, we wish to summarize the systems and options models providing the theoretical foundation of our impact analyses. Second, we wish to review the assumptions upon which the scenarios of change will be developed. Included in this review will be a brief discussion of the sources of likely change in the community. Third, we will present a brief description and explanation of the relevant impact categories which will comprise our projections. Finally, we will discuss our methods of assessing the relative ranking of these impacts and how this ranking will be employed in analyzing which aspects of the community organization are most and least susceptible to change.

3.1.1 Models of Analysis

Briefly, our analysis is based on a combined use of a systems model, designed for social impact studies, and an "options model," based on cognitive theories of decisionmaking and the exercise of choice. We will only briefly summarize these models here; a more detailed discussion is provided in Appendix A.

The systems model of social impact analysis is based on the concepts of input, structure, output and feedback. In applying this model to the study of social change, input is defined as relevant independent variables which constitute the sociocultural environment of the community under study. This environment refers to external government agencies, businesses, the larger sociocultural system, and certain intrasocietal forces such as demographic characteristics and community infrastructure, as well as available natural resources. It also includes the history of the community. Structure refers to the community itself, its values and its social organization. Output refers to the community's response to environmental input, usually represented in the behavior of the members of the community. Feedback is used to describe the effect that alterations in behavior may have either on the structure of the community itself or on the environment. These key notions of a system are inte-

grated with four major concepts of a social system: 1) the interaction between a social system such as a village community, an ethnic group, or a state or nation, and its environment; 2) the interrelationships between a set of individuals and the roles they perform to form a viable social system; 3) the regulation of these interrelationships by a set of goals or motives; and 4) the definition of these goals and the means for obtaining them by a set of rules embodied in the value structure of the community.

As an abstract model, systems analysis can reduce the impacts of projected changes in the environment (e.g., OCS development) on the community under study to mathematical formulations. As a method of analysis, it can aid in presenting the community as it will exist within certain defined parameters (the standards and assumptions). In this analysis, these parameters are twofold. The first are represented by assumptions of varying levels of OCS development activity which underly the scenarios to be presented. The second set of parameters are contained within the baseline sociocultural data of Cold Bay.

Systems analysis enables us to project changes in the community's response to its socioeconomic environment and to describe the systems output in terms of indices of behavior among existing and anticipated residents of the community. The analysis also enables us to discuss how these changes in the community's response to its environment will in turn affect the value structure and social organization of the community (the sociocultural system) and its environment--local resources, relations with other communities, contact with external government agencies, and so on.

The options model is a straightforward way of supplementing systems analysis by providing the perspective of local residents in Cold Bay. Specifically, the model injects into the analysis of the projected impacts of OCS development within the proposed scenarios an evaluation of how these varying situations would be perceived by the local residents, what decisions would be based on these perceptions, and how these decisions in turn will affect their response to the environment and perhaps the structure of the community itself. Although the options model plays a vital part in the analysis of projected change within each output category, this role will not always be evident as the organization of the report is based on the format provided by systems analysis. Nevertheless, the analysis of the perception of available options and the exercise of choice among local residents will be implicit in the discussion of projected sociocultural impacts.

3.1.2. Scenario Standards and Assumptions

The standards and assumptions relate to existing ethnographic parameters of Cold Bay, such as the dependence of the local economy of Cold Bay on government, transportation, and communications employers. They also relate to trends which are projected to exist in the future but are not directly related to oil-related development. An example of such an assumption is a continued lack of a fisheries sector, and a projected increase in available land. A review of these standards and assumptions is contained in Appendix A.

Our projections for sociocultural change in the community of Cold Bay are based on one primary and two secondary scenarios. In the primary scenario, we examine likely development at levels consistent with population and employment projections provided by the Alaska OCS Office, in the absence of OCS development. This primary scenario serves as our baseline projection of change for Cold Bay.

The secondary scenarios for Cold Bay are based on our experience with and data on existing trends and patterns of change in the community. These scenarios examine the sequence and timing of events, levels and thresholds of development which either appear most probable or highly likely given current trends or conditions. Specifically, we examine the consequences of change based on a series of hypothetical propositions relating to the timing and sequence of oil-related development. These scenarios include the prospects of oil-development at levels already projected by the Alaska OCS Office. Each of these scenarios focus on the importance of the community's perception of these differential forces and how this perception in turn will affect local decisionmaking processes which will determine the magnitude and direction of change in Cold Bay.

3.1.3 Impact Categories

The impacts of oil-related development examined in the projection scenarios are intimately related to categories of sociocultural input and structure used in the ethnographic study of Cold Bay, and are, in fact, based on the findings of this study. The categories of sociocultural input include population, community facilities, private development, and regional relationships. The categories of sociocultural structure include: the economic, social, political, religious, educational, health, social services, and recreational subsystems and the value system.

3.1.3.1 Categories of Sociocultural Input

Sociocultural input refers to those aspects of a community's environment and infrastructure which determine or influence the behavior, values and forms of social organization of local residents. In essence, they comprise a set of independent variables in a systems model of Cold Bay. In turn, these aspects may be influenced by changes in behavior, values, and forms of social organization.

Four specific impact categories of sociocultural input—population, community facilities, private development, and regional relationships—will be subjected to analysis in this report. Projections of change in these categories will be examined after the economic subsystem forecasts, primarily because many of the changes in these impact categories of sociocultural input are dependent upon projected changes in the economy. The effects of these changes on the impact categories of sociocultural structure will be considered within the analysis of each subsystem (e.g., the effect of changes in population or regional relations on social relations, education, health care, and so on).

Projections of population changes throughout the forecast period include consideration of numbers of residents, age and sex distributions, and location of residence. Changes in community facilities include projections of alterations in water and sewerage system, power system, roads and docks, and the airport. Changes in private development refer to efforts by the city council and commercial interests to acquire property in Cold Bay for commercial or residential purposes. Changes in the existing pattern of relationships between Cold Bay and other communities in the region will be examined along economic, social and political dimensions.

3.1.3.2 Categories of Sociocultural Structure

In our examination of the impact categories of sociocultural structure, two types of impacts will be distinguished. The first type of impact is founded on the notion of the systems model output component. Output represents the community's response to fluctuations in the socioeconomic environment. It represents certain patterns of social and cultural activities which govern community life as well as certain psychological responses to perceived changes in the sociocultural system and its environment. The second type of impact is a specific form of systems response referred to as "feedback." This term refers to changes in the structure itself, changes in the values or the forms of social organization which regulate life in the community. The assessment of impacts on the sociocultural system is based on a comparison of projected changes in values and social organization with the existing baseline data.

3.1.3.2.1 Output

Under the economic impact category, four major aspects of economic activities or output are examined. Pattern of employment constitutes the first aspect of economic activities examined in the analysis of community response to the proposed changes in OCS development. An assessment is made of the number of jobs in commercial enterprises, service support industries, small retail businesses, transportation, communications, and petroleum production. Non-commercial employment opportunities, largely represented by the government sector, and level of subsistence activities, are also discussed. Coinciding with the projections of employment opportunities during the forecast period are projections of the rates of labor force participation in the community and the numbers of unemployed residents.

A second aspect of economic activities examined is the change in income levels among local residents resulting from the projected development or lack of development in oil-related activities. Our analysis of this aspect of community economic activities considers both the levels of income as well as the distribution of income among the various segments of each community.

The third aspect of economic activities is the pattern of consumer behavior projected to occur in the various scenarios. This pattern is, of course, intimately tied to both income level and employment opportu-

nity in each community. However, it is also a reflection of consumer choice, consisting of a series of decisions about which items to purchase, when, and in what manner (cash or credit), which in turn are governed by the values held by local residents. Assessments of the impacts in the defined scenarios, therefore, include an analysis of the projected changes in consumer activity.

Finally, an important aspect of economic activity included in the scenario projections is the anticipated change in availability and use of housing and real estate. This involves the impact the assumed developments in the oil industry will have on property values, land speculation, construction and land zoning.

Social activities examined as community responses to assumed developments in the oil industry are tied to the extent of social cohesion within each community. This social cohesion can be examined in three separate components. One component is that of social relations among kin groups. This component includes changes in family patterns such as the number and type of family units and marriage and divorce rates. The size and distribution of extended family networks within the community, region, and state, are also examined.

A second component of social cohesion is that of social relations among local residents not linked by consanguineal or affinal ties. These relations are based on locality (neighborhoods), social class, length of residence and employment. Each of these bases for non-kin relations in Cold Bay are used to determine the quantity and quality of such relations projected to exist under each of the defined scenarios. Such an assessment requires an appreciation of the relative importance of social class status, occupational position, neighborhood, and so on.

Finally, an understanding of the impact of the proposed changes on the cohesiveness of the social networks in each community requires an analysis of the community as a whole. This analysis involves a determination of the extent to which local residents adhere to one or more value systems, the levels of social interaction based on identification as a resident of a particular community, and changes in the demographic structure of the local population. With respect to this latter consideration, changes in certain aspects of the population such as the age distribution or sex ratio can have important implications for the character of social cohesion within the entire community.

Political activities in Cold Bay are examined from the perspectives of local administration, levels of political conflict, measures of bureaucratic efficiency, and extent and nature of social control. Local government includes city government and administration. An analysis of local government includes such facets of administrative activity as participation in community development from the standpoint of new services demanded, new facilities required, investments shared with other government agencies, planning priorities, and projected tax revenues and other funding sources. The extent of local government participation in future community development is determined by a combination of these factors.

The level of political conflict within a particular community is also important when gauging the possible impacts projected to occur within the defined scenarios. Such conflict involves an understanding of the issues which are responsible for community fission, the nature of local interest groups, and the activities they engage in to promote their causes. The character of political conflict between permanent residents and transients, for instance, is discussed in relation to the projected impacts under the proposed scenarios.

A third aspect of local political activity examined as a response to proposed developments in the oil industry is the measures employed by each community to assess the level of efficiency of local governments. Such measures include administrative budgets, deficits, levels of community satisfaction with the structure of local government and expectations of the role of local government in all spheres of community life.

Social control is another aspect of political activity examined in the context of the defined scenarios. Social control is both formal and informal. Formal social control is defined in terms of criminal activity and quality of police protection. Criminal activity is measured by projected crime rates in all major categories (i.e., homicides, assaults, burglaries, petty theft, and traffic violations). Police protection is measured by the projected numbers of available personnel and the quality of services offered by local law enforcement officials. Informal social control is defined by the number and use of moral constraints such as guilt or shame to enforce acceptable norms of community behavior. The proposed changes in the nature of these constraints and their effectiveness in regulating behavior within each community are examined.

Our assessment of changes in religious activity in Cold Bay throughout the forecast period consists largely of projections of levels of participation in the established chapel. Such levels are measured by size of congregation, numbers of members regularly attending weekly services, holiday services and social gatherings, and extent of member contributions to the church. When possible, an attempt is made to determine the extent of any changes in the belief system of the community as a whole, especially as that belief system influences social behavior in non-religious spheres of community life.

Changes in educational activities in Cold Bay are viewed largely in terms of students, teachers, facility construction, extracurricular activities, and achievement levels. With respect to students, the impact of the assumptions in the defined scenarios on student participation levels are analyzed. Such levels are indicated by measures of student enrollment, dropout rates, and numbers of students who pursue higher education, vocational education, or adult education. The number of teachers and the turnover rate for academic personnel are also taken into consideration when viewing educational activities. Facility construction takes into account both the number of students served by proposed or needed facilities as well as the effect of such facilities on the quality of educational programs throughout the forecast period. The involvement of students and the community in general in extracurricular activities offered by the school is also subject to analysis.

Finally, where possible, an analysis of the effects of increased population and available revenues brought about under the proposed scenarios for oil-related development on student achievement levels, student goals, social organization, and so on, is made in the attempt to provide a complete picture of educational impacts throughout the forecast period.

Community impacts on health and social services resulting under the various scenarios are also analyzed as community response to oil-related development. This response is analyzed through rates of illness and mortality and nature and extent of social problems such as alcoholism, psychological disorders, and domestic violence. An analysis of the effects of such illness rates and social and personal problems on existing or proposed facilities and personnel and how this in turn affects the cost and quality of care and service are both discussed in the analysis of health and social service response.

Finally, the impact of the proposed development of oil resources on the patterns of recreational activity is also analyzed within each of the assumed scenarios. How recreational tastes and preferences will be altered with increased or decreased population and revenues, where such activity will take place, and how often, is examined in this analysis.

3.1.3.2.2 Feedback

As noted above, feedback refers to the impact changes in activities have on a community's structure and its environment. It is possible, for instance, that changes in economic activity among residents of Cold Bay will result in certain fundamental changes in their value system and also have an impact on the available natural resources they utilize. It is also conceivable that changes in the activities of the city government of Cold Bay could result in an alteration of the relationship between the city government and the Department of Transportation (which controls most of the land in the community) or between Cold Bay and other communities in the region. These are examples of how activities could have important reverberations for the community's social structure as well as its environment.

In considering the feedback impacts in the categories of sociocultural structure, we shall examine values and organization. The analysis of changes on the community's value system includes a discussion of belief systems and world views held by different social groups within the community. Organization, in turn, is subdivided into categories of economic organization, social networks, political organization, religion, education, health care, social services, and recreation. As already noted, this analysis is organized along the same lines, and in related categories, as the ethnographic baseline data.

3.1.4 Ranking of Impact Categories

Because not all impact categories are equally susceptible to change, our analysis gives greatest emphasis to those categories most likely to change throughout the forecast period under the different scenarios for OCS development. This requires a determination of those aspects of

community life most, and least, susceptible to change. Our method for making such a determination is to rank the impact categories hierarchically. Our procedure for constructing such a hierarchy is based upon the scenario assumptions, the ethnographic baseline data of the communities under analysis, and the conclusions of cross-cultural studies.

Our ranking system distinguishes between the impact categories of socio-cultural input and the categories of sociocultural structure. The first set of categories, including population, community facilities, private development, and regional relationships, are ranked according to the degree to which existing patterns will be altered by the varying levels of groundfish and oil industry development. The second set of impact categories are placed within three major divisions. The first is that of universal categories. It includes those components of community life most susceptible to change and having the greatest impacts on community life. These categories exhibit the primary effects of environmental change. Within this division we place the impacts of environmental changes on the local economy, social relations, and value system.

The second division is labelled context-specific categories. These are categories which may be of major or minor importance in the analysis of projected impacts depending upon the nature of the environmental input and the importance of the category in the social structure of the community. Change in these categories are usually secondary in nature when compared with changes in the local economy, social relations, and system of values. These categories include the political and religious subsystems.

Within the third division are the minor categories. Changes in these components of the social system comprise tertiary effects of environmental changes; they are more directly influenced by changes in the secondary categories. Health care, social services, and recreation are included within, but not necessarily limited to this category. These impact categories could also conceivably be labelled as context-specific because particular environmental changes may have potentially significant impacts on these categories. In general, however, these categories tend to display the least amount of change.

Primary Scenario

Introduction

The first scenario for the future course of change in Cold Bay assumes no OCS-related development, and therefore no effects of OCS development on Cold Bay. Even without OCS development certain longterm trends will be apparent in the community. In the following discussion we will consider the likely future directions of change in Cold Bay in several different areas. These include economic activity, social structure and cohesion, political structure, religious structure, education, health care, and recreation.

In general the changes which will occur in Cold Bay will be most dramatic in the areas of the economy, politics, and social relations. Most of these will result from demographic changes projected for this period. Cold Bay population will undergo a substantial contraction, primarily as a result of the remoting of FAA and RCA functions which will reduce the Cold Bay workforce by one-third. Economically this will mean a decline in the relative importance of both external government and communications as sectors of the Cold Bay economy. Once again, as in World War Two, the Korean War, and Viet Nam, Cold Bay will become almost purely a transportation enclave, although the agencies will be civilian rather than military. Politically the major questions over the next decade have to do with the acceptance of responsibility for the operation of several municipal facilities, particularly the water and sewer systems, road maintenance, and the airport and the dock, all in the face of a diminished revenue base. These needs will inevitably lead to another political problem, the decision whether or not to institute a system of taxation in the community. However, as always, the major political problem will revolve around the attempt to acquire some municipal land for private sale. Socially the contraction of the economy and resultant decline in population will have the paradoxical effect of increasing the sense of community as the permanent residents, always a small minority of the total population, come to represent a greater proportion of all residents. We will now examine each of these areas in detail.

3.2.1 Economic Activity

The immediate outlook for the Cold Bay economic structure appears bleak. A combination of retrenchment by major local employers, lack of a fisheries infrastructure to take up the slack, and a general lack of local entrepreneurial activity combine to present a serious threat to the future of the Cold Bay economy. The picture is made worse by the current lack of available private land, although it is likely that this situation will be ameliorated to some extent in the near future.

However, on the positive side is the presence of a major international-class airport which will at least guarantee the survival, even if at a reduced level of activity, of the Cold Bay economy. Cold Bay will not disappear. There is also the possibility, though it is extremely remote at present, that the fisheries-related sector may be developed. This

development would be particularly likely if a closer link were established between Cold Bay and King Cove. Finally, for reasons detailed below, the economic contraction will not result in a growth of the non-labor forces as it would in most other communities. In the following economic discussion we will consider likely patterns in income distribution/disparities, employment patterns, unemployment and non-labor force patterns, economic class distinctions, and housing and real estate.

3.2.1.1 Income Distribution/Disparities

The bulk of the region of which Cold Bay is a part, indeed most of the area from Kuskokwim southeast to Kodiak and west to the Aleutians, has been deeply affected by state and federal legislation in the last decade. These legislative acts have had drastic effects on both income levels and on disparities among income levels.

The most important of these legislative influences have been the Limited Entry Act of 1973 and the Alaska Native Claims Settlement Act of 1971. Both of these, and particularly Limited Entry so far, created major income disparities in most of the communities of the peninsula and Aleutian Islands. Those with permits or in families with permits increased their income by an order of ten while those without such access remained locked into pre-limited entry income levels. This has had social effects as well, as we will note below. ANCSA has had major impact, particularly in putting a large amount of land, involving both surface and subsurface rights (the former under the control of local, and the latter under the control of regional corporations), into the hands of Alaskan Natives. However, the major impact of ANCSA is yet to come, and will only be fully felt in 1991 (or twenty years after land conveyance) when the land conveyed under the act becomes both taxable and more easily alienable.

Cold Bay has remained aloof from these developments. There is no fishing industry in town, nor has there ever been one of significance, so no one in Cold Bay was able to obtain a limited entry permit since they were unable to prove traditional commercial usage of the resource. Therefore, the income disparities which developed in towns all around Cold Bay left Cold Bay itself untouched. Nor are there any Natives, Native corporations, or, therefore, any land claimed by residents. The 1991 changes will leave Cold Bay unaffected except as purchasers. They have no land to sell.

As we will see in detail below, the Cold Bay labor force, in the absence of a fisheries sector, is dominated by middle-level white collar workers and skilled laborers. This gives Cold Bay an income scale which is remarkably compressed. Almost all those working in Cold Bay make between twelve and thirty thousand dollars per year. There is no one who makes the hundred thousand plus a year which some fishermen make, nor is there anyone who is indigent as a result of having, for example, been left out of the limited entry system.

In the absence of OCS development there is no reason to assume that the character of the Cold Bay income structure will change appreciably. There are essentially no economic classes in the community, as all are

on roughly a par from the perspective of income, and it is expected that the future of the community will remain characterized by this remarkable absence of economic distinctions.

The reason Cold Bay incomes are so consistent is that almost all the workers in town have been "imported" from outside by major corporations or government agencies, and most are in Cold Bay for relatively skilled or technical positions. Though, as we will note below, there is the likelihood of a reduction in the total number of positions in the community, the overall nature of the economic system will remain essentially the same.

Income levels are also affected by the tax structure of the community. At present Cold Bay residents pay only federal income taxes and state sales tax. The municipality, which was incorporated in January of 1982, has the right as a second class city to levy both a sales tax and a property tax. However, this has not yet been done and there is a good deal of sentiment against it. Finally, the city is also in a position to collect a portion of the state fish tax from the government should fishery development occur in the community. However, since there is literally no offloading of fish in Cold Bay currently this will remain only a possibility unless dramatic changes (such as the construction of a small boat harbor and an adequate dock) occur. Groundfish studies of the region have not included Cold Bay in their development scenarios, so the anticipated growth in this sector of the fishing industry will in all probability leave Cold Bay unaffected. The recently completed (September of 1982) Army Corps of Engineers study of the feasibility of harbor and/or navigational improvements in the coastal regions of Alaska did not recommend Cold Bay for either the construction of a small boat harbor, the construction of a breakwater, or navigational improvements. We therefore project that the fish tax will not be a major source of income since there will be little if any development of the fisheries sector.

We also project that, despite local resistance, the city will eventually be forced into establishing a tax structure. In all probability both a sales and a property tax will be enacted. As the economic base of the community contracts, and the city is forced into taking over operation of many of the services now operated by outside agencies (see discussion below under infrastructure) it will become necessary to generate revenue in order to assure continued delivery of such services. Without other major outside sources of revenue the city will have little choice but to levy taxes.

3.2.1.2 Employment Patterns

Employment patterns will change radically in the future, even without OCS-related development in the area. Currently the employment picture is dominated by communications, transportation, and government. The next decade will see a severe contraction of both communications and government as employers, with a resultant relative increase in the importance of the transportation sector. The workforce will shrink by approximately one-third, the contribution of transportation as a percentage of the workforce will rise from 22.1% in 1982 to about 34% in

1990, and the combined contribution of communications and government will shrink from 61% to about 37%.

As of the fall of 1982, federal government employment accounted for 63 out of a total of 154 employees in Cold Bay. This included 27 federal civilian positions (16 Federal Aviation Administration; 5 National Weather Service [NOAA]; 4 Fish and Wildlife Service; and 2 U.S. Post Office) and 16 federal military positions (all members of the Air Force stationed at the Cold Bay Air Force Station). These numbers have been undergoing a steady decline, particularly since the conclusion of the Viet Nam War. In the fifties (particularly during the Korean War), and again during Viet Nam, federal positions approached an absolute majority of employment in Cold Bay. This trend toward a decline in the federal sector will continue, and accelerate, during the projection period, altering the basic composition of the Cold Bay labor force.

Currently the government sector (including both federal and state government) of Cold Bay is a major employer. The total government sector, including state and federal, accounts for approximately 63 employees out of a total of 154 or over forty percent of all employment. Table 7 summarizes the extent of government employment.

Table 7
Cold Bay Government Employment (1982)

Federal Civilian	27
Federal Aviation Admin.	16
National Weather Service	5
Fish and Wildlife	4
Post Office	2
Federal Military	16
State	19
Dept. of Transportation	6
Fish and Game	7
Magistrate	1
R.E.A.A.	5
Municipal	1
Clerk	1
Total	63

This dominant position will soon be eroded. There are several indications of the extent to which the federal sector will decline in the next ten years. First, the Federal Aviation Administration has continuing plans for retrenchment of its Cold Bay personnel, a process which has already begun. The FAA has an overall plan to "remote" operation of the Cold Bay Airport through King Salmon and/or Bethel Airports. This means all landings and takeoffs currently controlled out of Cold Bay will be controlled from elsewhere, with commands and directions sent by remote control to the Cold Bay tower for relay to the planes in the area. Most of the personnel will therefore be in this "hub control center" rather than in Cold Bay.

The FAA cutbacks are scheduled to occur in three stages. The first, scheduled to be completed in 1983, will involve switching over all Cold Bay equipment to solid state, reducing the manpower requirements in Cold Bay from the present 16 to approximately 13. The next phase, scheduled to occur between 1983 and 1986, would see all flights out of Cold Bay remoted into one of a series of "hub control centers" (probably King Salmon or Bethel), reducing manpower requirements to less than half the 1983 figure, or approximately six people. Finally, total remoting is scheduled to be achieved by 1989, at which time the only manpower requirements in Cold Bay will be for two or three technicians to maintain the equipment. Thus, within seven years plans call for a reduction of the FAA personnel from 16 to 2, a steep decline.

Table 8

Scheduled Federal Aviation Administration Cutbacks: Cold Bay

Year	1982	1983	1986	1990
No. Employees	16	13	6	2
% Change from 1982		18.8	62.5	87.5

Source: Field Interviews, 1982.

Remoting will also be the cause of major reductions in the number of personnel employed at the Air Force Base. A process similar to that occurring in the FAA is also occurring with the federal military and RCA (the latter is discussed below under communications). Plans are to remote all operations at the base (location of a DEW station and other military radar and navigational facilities) to King Salmon. Military personnel have already been reduced at the base over the last few years as a result of the subcontracting of operations of most base facilities to RCA. Within two years it is projected that there will be no military personnel at the base, a reduction from 16 to 0 by 1985.

Discussions with personnel in other federal agencies revealed no similar plans for retrenchment on the part of the Fish and Wildlife Service, the National Weather Service, or the Post Office. However, the cuts noted above would result in a reduction of the federal sector of the Cold Bay economy from 43 of 154 jobs in 1981, or 27.9% of total employment, to approximately 13 of 124 jobs in 1990 (this does not take into account other non-federal cutbacks which will be discussed below), or 10.5% of total employment, a reduction of almost two-thirds. This means the Cold Bay labor force will shrink, from federal cutbacks alone, by over 20% in the next eight years, and that the federal contribution will be cut by almost two-thirds. This is a direct and serious threat to the current economic structure of Cold Bay, as these employees account not only for a major portion of Cold Bay employment, but as well are important supporters of the small service sector in Cold Bay which will also be threatened by their withdrawal.

With these projections we can estimate the total decline in the federal sector of the Cold Bay economy. Though we cannot be certain that the timetables set by the various agencies will be adhered to exactly, Table 9 represents what would occur if these schedules are followed and if no other events intervene.

Table 9

Changes in Federal Employment in Cold Bay, 1982 to 1990

Year	1981	1983	1986	1990
Employer				
Federal Aviation Ad.	16	13	6	2
National Weather Ser.	5	5	5	5
Fish and Wildlife	4	4	4	4
U.S. Post Office	2	2	2	2
U.S. Air Force	16	10	0	0
Totals	43	34	17	13
% Decline from 1982	—	20.9	60.5	69.8

Source: Field Interviews, 1982.

Other government employment in Cold Bay will also drop, though less dramatically, over the next decade. State government currently accounts for a total of nineteen out of 154 jobs in Cold Bay, and there are plans for cutbacks in this number. The agency which will account for most of this decline is the Alaska Department of Fish and Game. According to latest reports (personal communication, June, 1983) the ADF&G has plans to lay off the local biologist, and the future of the Russell Creek Salmon Hatchery, which employs two to three people, is in serious jeopardy. If these plans eventuate, it will mean a loss of between three and four positions, reducing the ADF&G contingent in town to two or three people total. This would represent a reduction of 20 to 25% in the number of state employees in town.

It is possible that the next decade will see the addition of a patrolman who would be a state employee, but at present there is considerable resistance to such a move. Most residents seem to fear that a patrolman will become a self-fulfilling prophecy and provoke, by his mere presence, an increase in crime. Given the reduction in population, we expect that the current attitude will prevail and no patrolman will be stationed in the community.

These trends in government employment will alter the Cold Bay economy fundamentally. Federal and state employment will, for the first time, be roughly equal in the community. Overall, government employment will probably drop from the current 63 (in 1982), or over 40% of all employment, to approximately 28, or about 25% of all employment.

Table 10

Total Government Employment, Cold Bay, 1981 to 1990

Year	1982	1983	1986	1990
Employer				
Federal Civilian	27	24	17	13
Federal Military	16	10	0	0
State				
D.O.T.	6	6	6	6
Fish and Game	7	6	3	3
Magistrate	1	1	1	1
R.E.A.A.	5	5	4	4
Municipal	1	1	1	1
Totals	63	53	32	28
% Change from 1982		15.9	49.2	55.6

Government is only one of three sectors which have traditionally dominated the Cold Bay economy. Transportation and communications are the largest private sectors, and there are plans for some cutbacks in these areas as well. The most important company in this regard is RCA. Currently RCA employs approximately 26 to 30 people, all at the Air Force Base. The exact number of RCA employees is difficult to compute given the unusual time-off policy recently inaugurated by the company. This allows for annual leaves of up to ninety days, plus twenty days annual vacation time with pay, to those who desire it, thus allowing an individual to spend almost four months off the job yearly without fear of losing the position. RCA is heavily implicated in the retrenchment occurring at the Air Force Base through remotoring operations at King Salmon. Indeed, most of the work of this transition is being done by RCA employees, which is why the Air Force contingent is being reduced faster and earlier than the RCA work force.

RCA plans to cut its work force from approximately 28 (in 1982) to less than fifteen within two years. This will be a major cut in both the communications sector of the Cold Bay economy, since RCA is the dominant employer accounting currently for some 28 out of 31 employees in this sector, and in the Cold Bay economy overall, since RCA is the largest single employer in town.

Other employers in the communications sector will maintain steady employment levels over the next decade. However, the other two companies, Alascom and Interior Telephone Company, currently account for only three jobs (indeed, with the resignation of the single Interior Telephone employee during the summer of 1982 these two companies accounted for only two employees). Overall, then, communications will drop from a total of approximately 31 positions to approximately fifteen or sixteen positions, or roughly by half.

Between government, particularly federal, and communications, particularly RCA, cutbacks, then, Cold Bay is confronted with massive employment reductions. From a total of 94 jobs in these two sectors, or over 60% of total employment, the end of the decade will see them accounting for approximately 38 jobs, a reduction of 60%. This will represent an overall reduction of employment in Cold Bay from a total of 154 in 1982 to approximately 98, a drop of more than one-third, from these two areas alone.

With these reductions in the communications and government sectors there will also be pressure on the support sector. Though Cold Bay is unusual in the extent of primary, as opposed to secondary or tertiary, employment, there is nonetheless a small retail and support sector in town. The heart of this sector is the Flying Tigers complex of restaurant, bar, hotel, and store. Flying Tigers currently employs between 12 and 16 people depending on the season, with summer the season of highest employment. We project that this number will undergo a small cutback in response to the overall cutback of a third in the Cold Bay labor force. If this occurs, then, we can expect Flying Tigers employment to drop to approximately 10 to 14 rather than the current 12 to 16.

Though the drop in the support sector might be expected to be greater, given the size of other local cutbacks, in fact the local support sector depends much more heavily on regional traffic, through the airport, and regional marketing, through the Flying Tigers Store, than on local demand. Therefore, major local cutbacks will not result in correspondingly large cutbacks in the support sector.

Another factor which will affect the level of employment of Flying Tigers is the outcome of the lease renewal process. Flying Tigers has a twenty-five year lease which was signed in 1960 and is due to expire in 1985. This lease gives Flying Tigers exclusive rights to operate a store, bar, restaurant, package store, and several other businesses. If this lease is not renewed, and current evidence suggests that it will not be (personal communication, May, 1983), the result could be a termination of Tigers' presence in town. However, even if the lease is not renewed, this is not likely to result in any immediate major changes in the local employment picture for two reasons. First, Tigers already has the infrastructure functioning, and no other firm has such an infrastructure yet which could compete with the Tigers operation. Second, even after a period of time during which it would be possible for other companies to establish competing activities the overall reduction in the Cold Bay labor force, and therefore population in general, means that there will be no need for an expansion of support services. Thus, even if Flying Tigers terminates its operations and is replaced by another firm the ultimate impact on Cold Bay employment is likely to be small.

This drop in government, communications, and support/service sectors will, in all probability, not be matched by a corresponding drop in the private transportation sector. This is because Cold Bay will continue to be a major transportation center for the entire region, and very little of the traffic which comes through Cold Bay is destined for Cold Bay per se. Reeve Aleutian Airways in particular should be insulated from these local economic fluctuations. Peninsula Airlines, which currently employs ten people in Cold Bay, depends heavily on carrying Reeve passengers to other regional destinations not served by the latter, and should suffer little decline in business as a result of local population declines. In essence these companies depend much less on local business than they do on transshipment of people and material.

While it is true that there are likely to be developments in other parts of the region which will increase the amount of traffic through Cold Bay, we expect this to be offset by the reduction in traffic to Cold Bay itself. Some developments which might act to increase traffic, at least seasonally, are the growth of a groundfishing industry, particularly in Akutan and Unalaska, and the growth of tourism in, for example, the Pribilofs. However, the current number of employees in Cold Bay should prove sufficient to accommodate this seasonal increase.

The sectors discussed here represent a total of 141 out of the 154 jobs held in Cold Bay in 1982. If the cutbacks occur as we have projected here, these sectors would represent a total loss of 56 jobs, distributed as shown in Table 11.

Table 11

Cold Bay Labor Force Reductions: 1982 to 1990

	1982	1983	1986	1990
Government				
Federal Military	16	10	0	0
Federal Civilian	27	24	17	13
State	19	18	14	14
Communications	31	24	18	12
Support Services	16	14	14	14
Transportation	32	32	32	32
Other	13	13	13	13
Totals	154	135	108	98
% Reduction from 1981		5.8	34.8	39.4

Source: Field Interviews, 1982.

The overall effect of these reductions will be a growth in the importance of the transportation sector at the expense of government and communications. This is ironic in a sense as Cold Bay originated as a transportation enclave, and it appears that it will once again become dominated by that sector. This has been both a strength of the Cold Bay economy, guaranteeing its survival even in the face of dropping labor force and population figures, and a weakness, leading to the monopolization of the community by transients essentially unconnected to Cold Bay itself. This process should not be seen as unique or irreversible, however. The history of Cold Bay has been precisely one of the expansion and contraction of the workforce in very wide fluctuations, but always with the transportation sector as a stable and persistent core. Cold Bay is now involved in another period of contraction, but this time it is the result of technological changes rather than political or military decisions. Previously expansion occurred when Cold Bay became militarily strategic, and contraction generally followed shortly after the end of the military emergency. Though there has been a steady

decline in population since the end of the Viet Nam War, this latest reduction is the result of the introduction of solid state and other sophisticated technology (particularly that necessary for "remoting" operations out of other communications centers) which has made the Cold Bay communications personnel obsolescent. Again, however, the importance of Cold Bay as a transportation link will guarantee the economic survival of the town, and future developments, beyond the forecast period, could well lead to another round of economic expansion.

3.2.1.3 Unemployment Patterns: Non-Labor Force

It is clear that, in the absence of OCS-related development, the next decade holds little promise for the Cold Bay economy. A reduction of a third or more in the labor force is entirely probable over the forecast period. In most communities this would represent a death-blow to the local economy and would result in an intolerable unemployment rate, huge welfare, AFDC, and food stamp increases, and a socially disenfranchised class. However, this drastic reduction will actually affect Cold Bay less negatively from an economic perspective than one might expect.

Cold Bay is, by definition, a full employment community. That is, no one can remain in town unless they have a position. This is a result of the difficulty of finding land for private purchase, and the near impossibility of finding a position in town without working first for a major company in another location and only then being sent to town. The cutbacks which Cold Bay will experience are only local cutbacks, and do not necessarily represent overall reductions in the agency or corporation. Most of these employees will continue to work for the company or agency for which they worked in Cold Bay, but in another location. Nonetheless, they will be forced to leave town, whether they still have a job or not. Therefore there will be no growth in the Cold Bay non-labor force. Again, this is an example of the self-purging nature of the Cold Bay system. The town is so organized that it is virtually impossible for it to suffer from unemployment of any kind.

The only possible exception to the equation of residence and job is among the permanent residents. It is possible, if permanent residents come to represent a greater proportion of the population, that eventually some of them may retire in Cold Bay. This depends on the availability of land. A few already own land, and if more becomes available for private purchase the number of permanent residents may increase. This will be a slow process throughout the forecast period, but could well accelerate sometime after the end of that period.

3.2.1.4 Economic Class Distinctions

We noted above in the discussion of income levels and disparities the remarkably compressed nature of the Cold Bay income scale. Most of the people in the community are white collar workers or skilled blue collar workers. This means that there are very few social or economic class distinctions based on income. We expect this to continue to be the case throughout the projection period.

Even though there will be a severe cutback in total Cold Bay employment, those positions left in the community will remain white collar or technical positions, which means the incomes of those remaining in the community will remain approximately equal. This lack of income differentials is abetted by the lack of social venues. Since there is effectively only one place in the community to which one can go for social activity it is impossible to establish a public segregation of social classes, even if they did exist. With the drop in population we expect the number of social venues to remain constant, with the effect that social segregation will remain unimportant in the community.

3.2.1.5 Housing and Real Estate

One important economic point has to do with the availability of land in the community. As we have repeatedly noted, there is a dearth of privately held land or of land available for purchase by private individuals. This situation is currently in a state of some flux. The city is involved in ongoing negotiations with the State of Alaska, as well as the federal government, in an effort to gain access to some land. There is currently an effort afoot to gain approximately fifteen hundred acres from the state. The city is working closely with the Aleutians East Coastal Management and Regional Planning Program in attempts to gain a land conveyance. The Bristol Bay Cooperative Management Plan study group projects the acquisition by the city of at least one thousand acres of land by the turn of the century. These efforts are discussed at length below. If any of these efforts are successful the effect on the local economy could, eventually, be significant.

First, this would allow for the expansion of the local entrepreneurial sector. However, we project that, within the forecast period, this will not be a significant factor in that the reduction in the overall labor force and the resultant population reductions will mean less demand for local services and skills than would otherwise be the case. Second, the availability of a certain amount of private land will mean that the permanent population of the community could potentially increase significantly. However, again we expect that this will have little effect during the projection period due, again, to the contraction of employment possibilities in the community. Nonetheless, this will probably have more serious consequences in the area of social structure, an area we discuss below.

In the ethnography we noted the domination of the 1979 land sale by oil and fisheries speculators. Several suggestions have been tendered concerning strategies to avoid the domination of any future sale by speculators. It appears that the most efficient way of doing this would involve two aspects. First, the land should be zoned either residential or utility. The former would guarantee that the land would be of little use to speculators hoping for future oil- or fisheries-related development. Land might be zoned utility in order to allow those who purchase it to run small businesses out of their homes, while it would still preclude major commercial operations of the sort in which speculators would be interested. Second, the land should be sold in relatively small lots which would also make it less palatable to large speculators.

Even though there is little land currently available, housing will pose no problems for the community during the forecast period. All housing in Cold Bay, with the exception of less than a half dozen homes, is now provided by outside employers. Thus, there is never a housing shortage in Cold Bay, but neither is there a glut. With the reductions by several of the major companies and agencies operating in Cold Bay, and subsequent population reductions, there will be an oversupply of housing in the community. It is unclear at this time the potential uses to which that housing might be put, but it is possible it might be rented or leased by individuals who hope to stay in Cold Bay. In this way the reduction in the Cold Bay labor force may paradoxically contribute to an increase in the number of permanent residents. However, even if individuals are successful in renting or leasing these homes, permanent residency will ultimately depend on the availability of some land for purchase.

3.2.1.6 Feedback

The structure of the Cold Bay economic system is expected to become dominated once again by the transportation sector at the expense of the governmental and communications sectors. Throughout the 1980s the Cold Bay economy will be characterized by contraction as the corporations and agencies which have retrenchment plans at present carry those plans out. However, by the 1990s some regional and local events may have occurred which will begin to reverse this trend.

The first shift in the 1990s concerns the development of new economic capabilities in the region which will have an impact on Cold Bay's position as a transportation and communications center. The most dramatic of these concern two areas of development. First, the groundfish industry is expected to develop rapidly from 1990 on in Akutan and Unalaska. This would result in increased traffic through Cold Bay, and in an increased role for the community as a supply point for the groundfish industry which would in turn lead to expansion in transportation and support services in Cold Bay directed outside the community. The second regional development is OCS related development. If Unalaska or any other regional center becomes the focus for oil-related development Cold Bay will become a major staging area for both personnel and material. In this case we would also expect a modest expansion of the support sector and of the transportation and communications sectors. This should be sufficient to reverse the decline in the Cold Bay economy and population and the community would grow slowly throughout the decade of the 1990s.

The second possible shift in the 1990s would affect Cold Bay more deeply. This is the possibility of the establishment of a road link between Cold Bay and King Cove. This is not expected during the 1980s, but it is possible such a link may be established in the 1990s. If this occurs it would finally give impetus to the development of a local fish processing sector, particularly given the convenience of the airport and the possibilities for distribution which it presents. In this event the Cold Bay economy would be given both a lift and a new direction. This would lead to much more rapid growth than the regional development of a groundfish or oil-related industry.

3.2.2 Social Cohesion

The changes projected above in the Cold Bay economic system will have effects on the social structure of the community as well. In this section we note the probable course of social change over the projection period. Included in our discussion are kinship patterns, neighborhood patterns, friendship networks, and extended regional, state, and national networks.

3.2.2.1 Kin Behavior

We have noted several times the weakness of the kinship network in Cold Bay. There are no cases of kinship extending beyond the nuclear family; that is, there are no two families in the community related by kin ties. This pattern could change over the projection period under certain circumstances. If land becomes available, and at present it appears likely it will in the next few years, and the proper circumstances prevail, the community could see the emergence, for the first time, of genuine kinship networks. The availability of a certain amount of housing, particularly that abandoned by the FAA, could also encourage the settlement of people related by kin ties should it prove possible for them to rent, lease, or buy those houses. However, we feel that this is likely to be restricted to only one or two instances and will, in no case, become widespread during the projection period. This is for several reasons.

First, the shrinking economy will simply not encourage large numbers of people to remain in town, and the town, as we noted above, will inevitably experience a net out-migration during the projection period. The contraction of the local economy will mean even less demand for local services and goods, so there will be little room for local entrepreneurial activity which could support people who choose to live in the community. Second, even if land does become available there is no guarantee that local individuals, or individuals who would like to reside permanently in Cold Bay, will be able to gain to such land. This was certainly the case in the 1979 sale of land by the Department of Natural Resources. During that sale the purchases were dominated by outside speculators who forced the prices of the parcels far beyond the means of local residents to purchase them.

Over the long term, however, if the attempt to gain land and reserve it for the use of local Cold Bay residents is successful it could result in an increase in the importance of kinship as a basis of social interaction. However, even in the event of a "successful" effort in terms of land acquisition, the importance of kinship is not likely to increase dramatically during the projection period. The increase in importance will be very gradual, but if the permanent population does in fact grow steadily, even if slowly, eventually kinship may come to play a much larger role in the community than is currently the case.

An important aspect of kin relations is family patterns. These are particularly important in the Cold Bay kinship system since familial

relations actually constitute the extent of kinship. Over the forecast period we anticipate that family patterns will remain essentially unchanged from their current structure with one exception. The agencies and corporations cutting back on their levels of employment in Cold Bay, with the exception of the Federal Aviation Administration, are those which tend to employ somewhat younger men who are less likely to be married and have families than many others in the community. It is probable, then, that families will increase as a percentage of the total population during the next few years, even though absolutely they will experience no growth. However, if land does become available and affordable for local residents, then it is possible that in the longer term families will grow in absolute numbers as well as proportionally. Therefore, over the forecast period we expect families to grow as a proportion of total population, and toward the end of the forecast period we expect to see the beginnings of a slow increase in the absolute number of families. If this occurs it is possible that, in the longer term, kinship may become important not only horizontally (that is, across the field of social relations) but also vertically (that is, across generations). It is possible that some families may have offspring who will themselves remain in Cold Bay, thus establishing for the first time in the history of the community an intergenerational kinship network.

3.2.2.2 Non-Kin Behavior: Neighborhood and Associational Patterns

Neighborhood patterns will also change gradually under this scenario. Currently neighborhood patterns are almost totally determined by occupation, as nearly everyone in town is working for a major outside agency which provides employee housing. However, with the retrenchment of several of these major employers and the availability of land, if this occurs, these patterns may change so that neighborhood structure is not so completely determined by occupation. If individuals are able to buy land on which to build they will not be restricted to company housing. By the same token, the potential availability of some housing in the community, notably that left behind by the FAA in its retrenchment, may also contribute to a breakdown of the equation between occupation and residence as people working for various employers move into the empty units.

Should land become available it is possible that the number of permanent residents will begin to slowly increase. The availability of the FAA housing could also encourage the growth of this group. However, even if the number of permanent residents does not increase absolutely, current permanent residents will come to form an increasingly larger proportion of the total population as that population continues to shrink. If we take the current permanent population as between twelve and fifteen people they represent approximately six percent of the total population. This same set of permanent residents would represent ten percent of the total population of 130 to 150 projected for the end of the forecast period. If, in fact, the availability of land and housing provokes an increase in the number of permanent residents from, for the sake of argument, 12 or 15 to 20 or 25 then the proportion of the total population which is permanent will increase to between fifteen and twenty percent. For the first time the permanent population will then repre-

sent a substantial proportion of the total population.

As the permanent population comes to represent an increased proportion of total population the chances for the formation of an integrated community increase. As more people are resident for a longer period of time social links become more intense; more moral and less instrumental. Paradoxically, then, it is possible that as Cold Bay declines in population and economic activity it may at last develop into a social system in which a genuine sense of community becomes increasingly well developed.

3.2.2.3. Intraregional, Interregional, and Interstate Networks

These changes in the composition and structure of the Cold Bay social system will also be reflected in changes in the relative importance of intraregional, interregional, and interstate social relations. Currently the majority of Cold Bay residents have their strongest social relationships with people living either in different regions of Alaska, most often a major urban area, or in different states of the United States. This is because most residents of Cold Bay are recruited from outside the community and outside the region as a whole. Since most residents work for major state or national government agencies or for national or international corporations very few of the local workers are actually from the southwestern Alaska region. Thus, the only people who have extensive intraregional networks are the permanent residents, who currently make up a very small minority of the total Cold Bay population.

If the population of Cold Bay drops as we have projected, and the proportional contribution to the population of the permanent residents does increase there will also be an increase in the proportional importance of regional ties, since this group is most heavily implicated in purely regional networks. At the same time the relative importance of interregional and, particularly, interstate networks will be on the decline. The extent to which these processes occurs will depend on the amount of contraction of the population (and therefore the proportional increase in permanent residents) and on the possibilities of obtaining land and housing for private use (which will itself affect the absolute growth of the permanent population).

3.2.2.4 Demographic Effects

These alterations in the structure of the Cold Bay economy will have direct effects on the demographic structure of the community as well. These effects include a contraction in total population, an improvement in the male/female ratio resulting primarily from a proportional increase in the number of families, and an older average age of the population.

Total population will decline considerably as a result of the cutbacks discussed above. There will be a direct decline of 56 workers between 1982 and 1990. Of these 16 will be single military employees (or married employees who do not have their families with them in Cold Bay).

This leaves 40 other workers who may or may not have their families present. Assumptions provided by the MMS Office are that half of the non-military employees in Cold Bay will have families, and that those families average 2.5 people. If this is the case, then these 40 people would represent a total population loss of approximately 70 people. If we add this to the 16 military people lost, we can expect a total population decline of approximately 86 people between 1982 and 1990. This would reduce the estimated 1982 population of 226 to about 140 to 145. We expect the total population, therefore, to decline to somewhere in the range of 135 to 150 people by 1990. After 1990 we expect population to begin a gradual rise once again as regional groundfish and/or oil-related development begin to affect the community, so by 2000 we expect population to reach between 160 and 180 people.

One result of the decline in population will be a slight improvement in the ratio of males to females. Currently this ratio stands at approximately 2.05:1 (approximately 2.85:1 among adults). With the loss of the Air Force contingent a major group of single males will be removed from the community. Though less extremely, RCA is also an employer which has a somewhat high ratio of single men. Partly this is a result of the removed location of RCA operations, at the Air Force Base, and partly it is a result of the fact that most RCA employees are housed in relatively small apartments unsuitable for families. This means that the ratio of men to women could drop to between 1.5 and 1.75:1 (and perhaps as low as 2:1 among adults). However, this will have relatively minor social implications, as there has traditionally been relatively little contact between workers at the Air Force Base and the community itself, since the two are separated by eleven miles.

At the same time the ratio of males to females is moving closer to parity, the proportion of the total population consisting of families will also increase, again because of the removal of a major group of single individuals with the withdrawal of the Air Force personnel. However, again, too much should not be made of these changes in sex and family/single ratios. In fact the level of interaction between the Air Force Base and the city itself has been only moderate, and the lasting social implications in the city of these statistical changes will not be great.

Finally, the reductions discussed here will cause some changes in the age structure of the Cold Bay population. Currently the Cold Bay population is a very young one. This is for several reasons, including the fact that there are no retired people in the community, the location is fairly isolated and requires at least a certain element of physical hardiness, and there are a large number of single males, generally in their twenties to early thirties, in the town. However, with the withdrawal of, in particular, the military and RCA, both of which have employees who are, on the average, younger than those employed by other companies or agencies in the community, the average age of the Cold Bay population will rise somewhat. Though we do not have specific figures concerning the age structure of the town, it is clear that there will be a major reduction in the single male group between the ages of twenty and thirty-five.

3.2.2.5 Feedback

Over the next decade the social patterns of Cold Bay will be affected, as the rest of the Cold Bay system, by the contraction of both employment and population. This will result in a gradual proportional increase in the number of permanent residents as a proportion of total population. This will become a more rapid process in the 1990s.

Over the rest of the eighties the reduction in population size will be accounted for by the departure of many long term transients. However, this will mean a growth in the proportional contribution of the permanent residents. Toward the end of the eighties, and into the nineties, the increased availability of land will contribute to a growth in the absolute number of permanent residents in the community as land becomes available for building on for the first time in recent memory. This will lead to several social changes before the year two thousand.

First, the permanent residents will continue to grow as a percentage of total population until 1990, and absolutely from 1990 to 2000. Total population itself will reverse its contraction around 1990 and begin to grow slowly during the following decade. Second, with this growth kinship will finally come to play an important role in Cold Bay social structure. Third, the importance of occupation as a determinant of friendship networks will weaken steadily during the late eighties, and more rapidly in the nineties as permanent residents build and live in areas not defined by occupation. Fourth, the number of families will gradually increase, especially during the late eighties and the 1990s, which will result in an increase in social activities. Fifth, inter-regional and interstate networks will begin to suffer at the expense of intraregional networks as people who have been in the community and region for a long while come to form an increased share of total population.

Finally, the growth of the permanent population and the construction by them of private housing will, particularly following nineteen ninety, encourage the growth of a community spirit in Cold Bay. As the population comes to be made up of an increasingly large proportion of permanent residents and families social relations will become more intense, commitment to the community more general, and a sense of community will begin to emerge strongly for the first time.

3.2.3 Political Structure

3.2.3.1 Administration: Municipal government

From the perspective of political structure, Cold Bay has recently embarked on a path which will lead to continued change during the projection period. With the incorporation of the community as a second class city in January of 1982 the possibility of the exercise of local political power emerged. This political structure, particularly the city council, will be faced with several important decisions over the next decade which will determine the nature and direction of change for that period.

The city council currently consists of six councilmen plus a mayor who is selected from among them. The positions are unsalaried and are filled by people who have other jobs within the community. There is only one salaried civic official, a half-time clerk. We do not expect that the political structure will change appreciably over the first half of the forecast period. The positions will remain unremunerated, and will continue to be filled by individuals whose primary involvement in Cold Bay is related to employment by major outside firms, at least through 1990. From 1990 to 2000 there will be a gradual increase in the participation levels of permanent residents as their numbers grow slowly. This structure should be adequate to deal with the issues facing the community over the projection period.

The only exception to this concerns the acceptance of responsibility for the operation of some of the community infrastructure, such as the sewer and water systems. It will clearly be necessary for the city to hire people to oversee the operation of these facilities. In all probability this will entail at most two or three people, but they will have to be salaried or hired on a commission basis and will entail some municipal expenditure.

3.2.3.2 Major Political Issues

The most important issues facing the community during the forecast period revolve around the acquisition of sufficient land for private use and the provision of adequate community infrastructure and facilities. The city is currently in negotiation to gain land from both the state and federal governments. We feel, based on the most recent information, that this effort will be at least partially successful within the next two to five years, and that a certain amount of land will be under the control of the city.

The city has recently acquired an ally in its attempts to gain land, among other goals. The Aleutians East Coastal Management and Regional Planning Program has recently been initiated and has been involved in Cold Bay in an attempt to identify local needs and help in planning for the future. The AECMRPP is funded by the Division of Community Planning of the Department of Community and Regional Affairs of the State of Alaska. It is currently involved in Cold Bay in an attempt to define particular local needs, including housing, public works, and utilities, and may have a major long term impact in the community. This development can only be encouraging to the long term prognosis for both gaining land and effectively dealing with utility and community infrastructure issues.

At the same time the Bristol Bay Cooperative Management Plan study group projects that Cold Bay will acquire, through state land disposals from any of several sources, approximately one thousand acres of land over the next twenty years. The BBCMP expects this process to begin by 1987 with approximately 75 acres of land coming to Cold Bay each year from 1987 to 2002.

The most difficult political decisions facing the city have to do with the provision and maintenance of an adequate community infrastructure. Currently most of the infrastructure is operated by outside agencies rather than the city. For example, the sewer and water systems are operated by the Federal Aviation Administration. Street repair and maintenance are provided by the Department of Transportation/Public Facilities of the State of Alaska. The Cold Bay Airport and the dock are operated by the state as well. Only electricity is provided by a private contractor, the Northern Power Company, and even in this instance the quality of service has caused problems many times in the community with frequent interruptions of service and occasional shutdowns for hours at a time. The city will be faced with increasing responsibility for the operation of the sewer and water systems in particular as the FAA retrenches and pulls most of its personnel out of town.

The operation of these utilities will force the city to come to terms with problems of revenue generation. There will be increased pressure, as we noted above, to institute a property and/or sales tax in order to finance improvements in these systems, several of which are currently substandard. It is also unclear the extent to which these systems, even once brought up to standard, will be self-supporting. In order for them to generate enough revenue to pay for their own operation changes will either have to be made in the rate structure for delivery of service or other forms of municipal taxation will have to be considered. People will also have to be hired to oversee operation of the facilities. In any event these will be important political issues during the projection period.

3.2.3.3 Levels of Conflict

Cold Bay is a community remarkably free of social or political conflict. There are, however, two areas of potential conflict which should be considered by those in power. The first involves the political split between the municipal government and the state, particularly as the state actually owns most of the land in the community. The second potential area of conflict is between the permanent residents and the bulk of the community.

The major potential problem area is between the jurisdictions of the State of Alaska and the City of Cold Bay. While the city has incorporated and has formed a municipal power structure, the fact is that it still lacks any significant local leverage. That is, despite the fact that the city is now incorporated, the state remains in control of almost all local land and a good deal of the local infrastructure. The state provides street maintenance, and operates the airport and the dock.

Over the next decade the transfer of power from the state to the municipality in all these areas will be the major issues confronted by the municipal government. There is the potential for considerable misunderstanding and conflict if this process is not handled with acumen. So far it appears that the city has able leadership which has realized the importance of a satisfactory resolution of these problems and which is working hard to deal with them. The city is currently in negotiation to

gain some land, and is beginning to consider the mechanics of taking over responsibility for the operation of several utilities and facilities operated by the state or federal governments.

The airport and dock present special problems. It will be necessary for the city to effect a gradual transfer of responsibility from the state so that the municipality is not overwhelmed by having to take over operation of too much too soon. The city and state will have to cooperate in establishing a system whereby the city is able to operate those facilities without risking its financial solvency.

The other potential area of conflict is between permanent residents and transients. This has never really been a problem in Cold Bay, and we do not expect it to become one over the projection period. Indeed, any conflict in the past has been essentially passive, with the permanent residents tending to withdraw rather than contest the actions of others in the community. Over the projection period we expect the permanent residents to take an increasingly visible and active role in local affairs. This will be primarily a result of the increased proportion of the population represented by permanent residents.

3.2.3.4 Measures of Efficiency

The efficiency of a community may be measured by any of several parameters. Most useful are levels of community debt and community satisfaction. This latter is influenced by levels of expectations, whether those levels are rising or falling, and their relationship to capabilities.

In Cold Bay the level of community debt is very low. Until the community incorporated the idea of municipal debt was meaningless. In the time since the community has incorporated the municipal government has shown little inclination to bind the city to long term debt and has generally avoided doing so. We expect this to be true for the duration of the projection period as there will be little need for community bond issues or related revenue measures since the community will be shrinking in size rather than growing. The revenues needed for operation of utilities and community facilities should be generated by local taxes, and state and federal revenue sharing.

Community satisfaction levels are high in Cold Bay. Actually, there are few expectations of Cold Bay when the individual arrives in the community, and the residents make few demands for social or other activity while in the community. The fact that almost all residents know they will not be permanent residents of Cold Bay means that they are able to adapt to what might otherwise seem to be a difficult environment. The major expectations held of Cold Bay concern the opportunity to earn a good salary, put some money away for the future, and perhaps enjoy some outdoor recreation. Thus, the low level of expectations on arrival in Cold Bay results in a high level of satisfaction on the part of the populace.

3.2.3.5 Means of Social Control

Means of social control have traditionally been predominantly informal in Cold Bay, and we foresee no change in this pattern during the projection period. Though there has recently been some sentiment for the introduction of a patrolman, to which the city has a right as a second class city, we project that this sentiment will diminish over the next few years. As the population shrinks, and as permanent residents become a higher proportion of total population, the perceived need among residents for formal means of social control will probably decline. As a social sense of community begins to develop informal mechanisms of social control, such as gossip or censure, will prove to be even more effective in most situations. Incidence of violent crime is extremely low, almost nonexistent, and as the population shrinks such events will become even more rare.

3.2.3.6 Feedback

The course of political activity through the remainder of the decade of the eighties will be one of consolidation. The municipal government will slowly come into control of the major utilities in the community, particularly the water and sewage systems, and the major local facilities, including the airport and the dock. These will present major problems of operation and revenue generation. Negotiations will continue for several years between the city and the state regarding, in particular, the airport and the dock. The structure of municipal government and responsibilities will be established as well during this period.

By the 1990s the municipality should have control of the major facilities in the community, and will have had several years of experience in their operation. At this point the city will begin to generate substantial revenues and will have funds available for expansion of local capacities. With the reduction in population due over the next decade the city will receive some "breathing room". It will not be crucial to expand any of the local utilities as the demand will be dropping steadily over the next decade. However, with the gradual slowing and, finally, reversal of this contraction in population the city will be forced into upgrading some of the infrastructural systems. By this time sufficient revenue should be generated from the operation of the airport and dock to finance such expansion.

The major issues of the late seventies and early eighties should become less pressing as it becomes obvious in the mid to late eighties that the city will not expand, but instead will contract. However, the city should take this as a respite, not as a reprieve from the long term consequences of these issues. That is, provision should be made well in advance for the expansion and upgrading of local infrastructural systems. If this is done, through the establishment of a permanent fund, for example, then the city should be in a secure position during the nineteen nineties.

3.2.4 Religious Activity

3.2.4.1 Belief System and Levels of Participation

The religious structure of Cold Bay is not currently well developed, and we project that there will be little change in this state of affairs over the forecast period. Cold Bay's single interdenominational chapel is moderately subscribed at best and is the focus of few social activities. However, this has fluctuated somewhat in the last few years, and the chapel has often attempted recreational or social programs.

If the permanent population of the community increases we would expect to see some reflection of this in an increase in religious activity. However, with the overall decrease in population which will occur over the next decade, the result will be a slightly reduced level of activity until 1990, after which activity will gradually increase.

3.2.4.2 Feedback

Over the next decade religious activity will slowly decline in importance among the Cold Bay population. However, as such activity has never been high this will not produce a major change in local social structure. Over the period from 1990 to 2000 religious activity will gradually become more important once again in the community, and the chapel will become more of a center of social and recreational activity. This will be a result of the growth in the permanent population of the community and will be a reflection of an increasingly tightly knit social community.

3.2.5 Education

3.2.5.1 Participation Rates and Facilities

Cold Bay currently has a school offering instruction from kindergarten through high school. Over the projection period there will be little need for expansion of this facility, and we see the current facility as adequate for future needs.

There is currently sentiment in the community for expansion of the school. Cold Bay has recently been granted \$1.3 million for the construction of a multi-purpose room, but many residents were disappointed the grant was not substantially greater in order to support construction of an entirely new, and larger, facility. However, given the projections of future population decline, we feel this sentiment will soon change and that local residents will realize over the next several years that the facility as it currently exists is adequate for local needs. If enrollment figures drop at approximatley the same rate as the population itself there will be little need for expansion. Current enrollment averages around fifty students, but we project that future enrollment will gradually drop until it averages around 30 students by 1990 then once again rise slowly to perhaps 40 students by the year 2000. The current facility is adequate for that number.

3.2.5.2 Curriculum and Achievement Levels

The curriculum of the Cold Bay School is a fairly challenging and modern one. The students have almost all had experience in other schools in widely removed areas of the United States, often in major urban areas. They are therefore accustomed to the demands of such an educational environment. We do not foresee any major changes in curriculum over the forecast period.

Cold Bay students are well motivated to achieve in school. Much of this is a result of the fact that they have, as a rule, had experience in other educational facilities in major urban areas. They are completely familiar with the educational environment, and the fact that their parents are, by and large, white collar or skilled blue collar workers means they have been raised with a positive value on education. Most students assume they will go on beyond high school to college. We project that these high achievement levels will continue through the forecast period.

3.2.5.3 Feedback

There will be little change in the Cold Bay educational system over the period to the year 2000. The expansion of the facility which is now occurring will be sufficient for needs well into the nineteen nineties as population, and by extension enrollment, continues to drop. The current curriculum is adequate as preparation for continued education and, with the exception of periodic upgrading, will be satisfactory for the future needs of the students.

The student population itself will change somewhat over the next two decades. Primarily it will become a more permanent population, and it will be much more frequent, for example, for a student to remain in the Cold Bay School for much longer periods of time. It is also likely that some of the teachers will become more permanently committed to the community and this will result in an additional sense of continuity on the part of the students. Finally, social patterns will be more focused on the school than is currently the case as students become more long term.

3.2.6 Health Care

3.2.6.1 Services and Facilities

Cold Bay is in a fortunate position from the perspective of health care provision in that the town has recently completed construction of a modern health clinic which will provide for the health needs of the community during the projection period. Rates of illness are low in Cold Bay, as those who become seriously ill and are unable to continue working are invariably removed from the community to an urban area where they can receive more expert medical care. We see no change in this situation over the projection period.

One area in which there will be a potential problem in health care delivery is in the availability of a doctor for the community. The city

is currently considering the possibility of having a doctor from Unalaska or, alternatively, Kodiak pay regular visits to the community to minister to the health care needs of the population for a fixed fee. At this writing it appears likely some such arrangement will be concluded and that the community will, for the first time, have at least intermittent care available from a medical doctor.

3.2.6.2 Health Issues

The Cold Bay population is remarkably healthy. This is a result of the fact that the population is unusually young and physically oriented. Over the next decade, there will be a gradual increase in problems related to aging as the population comes to consist increasingly of permanent residents who will be, on the average, older than the transients who currently dominate the community. In general, however, over the next decade there should be little change in the general absence of stress-related illness, alcoholism, and the other physical and mental maladies which are fairly common in rural Alaska.

3.2.6.3 Feedback

The health care situation in Cold Bay has been resolved to a great extent with the recent construction of a modern clinic in the community. With the projected decrease in population this clinic should suffice for local needs well into the nineteen nineties and probably to the year 2000.

Over this time there will be a gradual shift towards two kinds of medical need. Both will result from the growth in the permanent population, and will become particularly noticeable during the second half of the projection period. First, problems of aging will, as noted above, become more salient. Second, problems of child development and childhood illness will become more important as the permanent population, along with their school age children, comes to represent a greater proportion of total population. These issues may call finally for the permanent presence of a medical doctor in the community. If this occurs behavioral patterns will change such that people increasingly seek medical attention within the community rather than outside it.

3.2.7 Recreation

We have already discussed visiting, vacation and related patterns in the section on social cohesion and will not repeat that discussion here. This section will concentrate on hunting, fishing, and other outdoor activities.

3.2.7.1 Level and Types of Activities

We project little change in the structure of recreational activities over the forecast period. Currently Cold Bay residents utilize the subsistence resources available in the area to a modest extent as a means of recreational activity. This includes particularly fishing for salmon and Dolly Varden, and hunting for game birds, caribou, and, in

relatively rare instances, bear. The one change which could occur in this area concerns the proportion of people involved in such activities. As the population slowly contracts, and comes to be made up of proportionately more permanent residents, the amount of such activity per capita is likely to increase. This is a direct result of the fact that the permanent residents tend to be involved in such activity more frequently than are the transients. Other than this, we foresee little change in the kind and level of recreational activity.

3.2.7.2 Feedback

Recreation in Cold Bay will continue to consist of two aspects. First is the exploitation of the subsistence resources in the region. This will take place, but to a much lesser extent than is characteristic of the surrounding communities which consist of groups used to a long history of subsistence exploitation. The second kind of activity will involve technological devices such as four wheel vehicles and three wheeler motorcycles. These latter will often be used in concert with hunting and fishing.

Second Scenario

Introduction

The second scenario provided by the MMS Office for Cold Bay assumes the construction of a major gas and/or oil facility on the south side of the Alaska Peninsula with no direct road link to Cold Bay itself. In this section we will consider the likely effects of such a development on all aspects of Cold Bay structure, including economic, social, and political structure, and religion, education, health care and recreational activity.

The most dramatic changes which will occur in Cold Bay over the forecast period will be in the areas of economic activity, political structure, and social structure. Economically, the community will come increasingly under the influence of terminal and refinery, that is oil-related, activity. This will represent a partial shift from the traditional status of Cold Bay as a government, transportation, and communications center. Support and service sector employment will also increase substantially. Politically, the rapid growth of the Cold Bay economy will provoke several difficult issues. The city will be faced with the need for revenue generation as it takes over operation of local utilities and facilities and is forced to expand them. It will be faced with the need to overhaul the political apparatus of municipal government itself as the operation of the city becomes a full-time job. Several new bureaucracies will have to be established to oversee the expanded scope of municipal operations. Socially the consequences of these economic and political changes will be a strengthening of the transient nature of the community, a further submergence of permanent residents, and a formalization of means of social control. In the following sections we consider each of these areas in detail.

3.3.1 Economic Activity

The economic structure of Cold Bay will be among those areas most dramatically affected by the development of an oil refinery and an LNG plant in the vicinity of the community. These effects will include the following. There will be the emergence for the first time of income distribution disparities. There will be a shift in employment patterns from a nearly equal division among government, transportation, and communications sectors to dominance by refinery and terminal workers with a large expansion of the labor force. This will result from the large growth in population (which is discussed here in tandem with employment changes). There will be little change in the structure of the non-labor force, which will remain essentially absent from Cold Bay. Housing and utilities will have to be expanded and upgraded significantly.

3.3.1.1 Income Distribution/Disparities

As has been noted several times in this report, Cold Bay has few dis-

tinctions which can be traced to income disparities. Most of the people in the community are white collar or skilled blue collar workers and are in the same income range. Therefore, there are few differences which can emerge as a result of income differences since they are minor. Over the projection period, however, there will be significant changes in this situation.

As the community grows rapidly there will be an increasing range of incomes represented. The refinery and terminal will attract middle and upper management personnel as well as a large population of laborers. Even though most of these people will not live in Cold Bay (see discussion below of population and employment patterns) enough will make the town home to affect the current structure of incomes. For the first time there will be at least two distinct groups of employees, management and laborers. This could result in behavioral consequences.

This is particularly true as the social venues in Cold Bay begin to expand. With the option of additional social locations, such as bars and restaurants, it is likely that social distinctions will develop as one place becomes associated with a certain group and another with a second group. The emergence of these groups will depend on the number of managerial class workers who establish residence in Cold Bay, the number of blue collar workers, and the number of successful local entrepreneurs who are able to profit from the arrival of the companies. We will discuss the social consequences of these income disparities at more length below.

3.3.1.2 Employment and Population Patterns

In this section we diverge from our normal pattern of discussing demographic patterns as an aspect of social structure. This is because there are certain assumptions, provided by and large by the MMS Office, which bear equally on employment and population patterns. The interrelationships between these two areas makes their treatment together more efficient than separating them.

The effects on population of a development in the general region of Cold Bay would be much less substantial than if the facility was constructed in Cold Bay itself (see scenario three). Although there would be a great increase in the number of people passing through the community, all these people will not live in Cold Bay itself. The exact proportion of people working on the construction, and operation, of the oil or LNG facility who will live in the community depends largely on the distance of the facility from the community.

Population effects should be divided into those during the construction period and those during the operational period. In general construction is projected to take two years, so years one and two of the scenario will be those during which the greatest number of people are in the region. From year three onward the facility will be in operation, and the number of people will drop rather precipitously between years two and three, after which it will once again begin a gradual rise.

There are certain assumptions which involve the relationship between employment changes and population changes which were provided by the MMS Office. Under these guidelines we are assuming that of the direct employees of the facility ten percent will live in Cold Bay, and of these fifty percent will have families. We assume that of the support service personnel fifty percent will live in Cold Bay, and of these fifty percent will have families. We assume that of the US Coast Guard personnel one hundred percent will live in Cold Bay, fifty percent of whom will have families. We further assume that the average family will consist of 2.5 people. With these assumptions we can estimate employment and population levels for the community over the projection period.

Employment can be divided into direct and indirect employment. The former includes those people actually working on the construction of the facilities during the first two years and those involved in the direct operation of the facilities from year three onward. Indirect employment includes support services and the employees of the United States Coast Guard. Support services can be further broken down into fire equipment operators, helicopter pilots and crews, food services, maid services, recreation services, facilities maintenance, and business office personnel. In general the first two years will see by far the greatest number of people in each of these categories. We project the numbers of these personnel to be approximately the following for the first six years of activity, including two years of construction and four years of the operational period.

Table 12

Employment in Cold Bay Region: Regional Facility, Years 1 to 6

Year	Oil Terminal	LNG Terminal	Support Services	USCG	Total
<u>Construction</u>					
1	940 (235)	3200 (800)	196 (49)	200 (50)	4340 (1085)
2	940 (235)	3200 (800)	196 (49)	200 (50)	4340 (1085)
<u>Operations</u>					
3	100 (25)	200 (50)	50 (12)	50 (12)	400 (99)
4	150 (38)	300 (75)	75 (19)	50 (12)	575 (144)
5	200 (50)	400 (100)	100 (25)	50 (12)	750 (187)
6	200 (50)	400 (100)	100 (25)	50 (12)	750 (187)

Note: Numbers in parentheses indicate the number of employees on shift at any time at the facilities. This is one quarter of the total labor force (on the assumption that one half of the force is off rotation for a set period - perhaps two weeks - and of the half remaining only one half is at the site at any one time).

The support service figures for the first two years are high because this number of people will be needed to provide support services for the construction personnel. Following the first two years these numbers drop precipitously because the number of permanent personnel in the area will be considerably less than the temporary highs of the construction period. The U.S. Coast Guard personnel figures are also high during the first two years to reflect construction activity at the Coast Guard Station site. Once the Coast Guard facility is constructed the number of permanent personnel required will be about one quarter the number required during construction.

Support services can be further broken down into kinds of support offered, both during the construction and operational phases. We estimate these numbers to be approximately as shown in Table 13.

Table 13

Support Services Employment: Cold Bay (Construction and Operation)

Support Services

	<u>Construction</u>	<u>Operations</u>
Fire Equipment Operators	16 (4)	16 (4)
Helicopter Pilots and Crew	20 (5)	16 (4)
Food Services	60 (15)	20 (5)
Maid Services	60 (15)	24 (6)
Others	<u>40 (10)</u>	<u>24 (6)</u>
 Totals	 196 (49)	 100 (25)

These are our best estimates of the overall numbers of people who will be in the Cold Bay area during both construction and operations phases. However, the ultimate impact on Cold Bay population levels will be significantly less than these figures indicate since most of the personnel, particularly those operating the facilities themselves, will not live in Cold Bay itself. On the other hand the support personnel will be more likely to live in Cold Bay, and all Coast Guard personnel will likely live in Cold Bay. With these estimates, and the assumptions we

discussed earlier concerning the relationship between employment levels and population, the forecast for additional population in Cold Bay as a result of oil-related development is shown for the third, fourth, and fifth years in Tables 14, 15, and 16. These tables begin in the third year, which is the first year of operation, because it is only then that permanent population effects will begin to be felt.

Table 14

Population Increase, Cold Bay: Regional Facility: Year 3

	Commuters	Employees in C.B.		Population	
		W/Family	W/Out Family	Family	Total
Direct Employment	270	15	15	38	53
Special Services	25	12	13	30	43
U.S. Coast Guard	0	25	25	63	88
Total	295	52	53	131	184
Induced Employment	(7)		(1)	(10)	
Effect of Induced Emp.		9	9	23	32
Total				216	

Table 15

Population Increase, Cold Bay: Regional Facility, Year Four

	Commuters	Employees in C.B.		Population	
		W/Family	W/Out Family	Family	Total
Direct Employment	405	22	23	55	78
Special Services	38	18	19	45	64
U.S. Coast Guard	0	25	25	63	88
Total	443	65	67	163	230
Induced Employment	(11)		(2)	(12)	
Effect of Induced Emp.		12	13	30	43
Total				273	

Table 16
Population Increase, Cold Bay: Regional Terminal, Years 5+

	Commuters	Employees in C.B. W/Family	Employees in C.B. W/Out Family	Population Family	Population Total
Direct Employment	540	30	30	75	105
Special Services	50	25	25	63	88
U.S. Coast Guard	0	25	25	63	88
Total	590	80	80	201	281
Induced Employment	(15)		(2)	(15)	
Effect of Induced Emp.		16	16	40	56
Total					337

These are our best estimates of numbers of people involved in both construction and operation phases of the establishment of both an oil and an LNG facility in the region of Cold Bay. If we take the current population of Cold Bay as 226 (the summer of 1982), the changes in population for the first five years are shown in Table 17.

Table 17
Cold Bay Population: Regional Facility, Years 0 through 5

Year	Population	% Annual Population Growth
0	226	
1	245	8.4%
2	245	0.0%
3	442	80.4%
4	499	12.9%
5	563	12.8%

These estimates reflect two major periods of population increase. First, at the start of the first year of construction there will be a minimal increase in population as some support and direct personnel locate in Cold Bay. However, this number will, as our earlier estimates reflect, be small. The next major jump occurs with the onset of the operational phase at the start of the third year. This is by far the largest increase in the population of the community itself, as many of those associated with the facility locate in the community. Once this has occurred there will be only gradual growth since the majority of those who will locate in Cold Bay will have done so at the beginning of the operational period. Ultimately the population increase will once again tend toward zero as the operational phase is brought fully on line. We expect total population to be approximately 600 to 700 when this period of growth is completed by the end of the century.

The economic effects of the construction of such a facility in the general vicinity of Cold Bay depend on several factors. The first factor is timing. Effects on Cold Bay will vary depending on whether the time concerned is the pre-construction, construction, or operation period. The second factor which must be considered has to do with the possibility of Cold Bay being utilized as a port for the transshipment of oil and/or gas. The third factor concerns the distance from Cold Bay to the oil facilities themselves.

The construction of a major oil or LNG facility in the general region of Cold Bay will affect the economy in two general ways. First, the balance among Cold Bay economic sectors will be radically changed, with refinery workers becoming the dominant local group of employees. Second, Cold Bay's position as the regional transportation and communications center will be enhanced as a result of the increased activity involved in the operation of the oil and LNG facility.

In Tables 18 and 19 we outline our projections for the Cold Bay labor force over the first five years of refinery related activity, including two years of construction and three years of operation. In Table 18 we have expressed employment of each sector by actual number employed, while Table 19 contains the same information but in terms of percentage of total workforce represented by each sector.

Table 18 clarifies the number of workers who will arrive in Cold Bay over the first five years of construction and operation of an oil terminal and an LNG refinery. It is clear that the major expansion will occur in the areas of oil-related workers and support and service functions (as well as a large percentage growth in municipal employees). The overall changes in the proportional contribution of various sectors are very large, and are clarified in the following Table 20 in which the changes in Table 19 are represented in terms of percentage of the total labor force represented by each of the employment sectors.

Table 18

Cold Bay Labor Force: Years 0 through 5, by Absolute Numbers

Year	0	1	2	3	4	5
Employer						
Government (Total)	63	52	41	45	45	45
Federal	43	31	17	17	17	17
State	19	17	18	20	20	20
Municipal	1	4	6	8	8	8
Communications	31	26	20	20	20	20
Support/Serv.	18	28	28	43	55	68
Transportation	34	36	40	42	42	42
Man./Process.	6	6	6	6	6	6
Construction	2	2	2	2	2	2
Refinery/Terminal	0	0	0	30	45	60
Coast Guard	0	0	0	50	50	50
Totals	154	150	137	238	265	293

Table 19

Cold Bay Labor Force: Years 0 through 5, by Percent of Total

Year	0	1	2	3	4	5
Employer						
Government (Total)	40.9	34.7	29.9	18.9	17.0	15.4
Federal	27.9	20.7	12.4	7.3	6.4	5.8
State	12.3	11.3	13.1	8.4	7.5	6.8
Municipal	0.6	2.7	4.4	3.4	3.0	2.7
Communications	20.1	17.3	14.6	8.4	7.5	6.8
Support./Serv.	11.7	18.7	20.4	18.1	20.8	23.2
Transportation	22.1	24.0	29.2	17.6	15.8	14.3
Man./Process.	3.9	4.0	4.4	2.5	2.2	2.0
Construction	1.3	1.4	1.5	0.9	0.8	0.7
Refinery/Term.	0.0	0.0	0.0	12.6	17.0	20.5
Coast Guard	0.0	0.0	0.0	21.0	18.9	17.1
Totals	100.0	100.0	100.0	100.0	100.0	100.0

These tables indicate the overall changes which are likely to occur in the Cold Bay labor force and economy. Currently the Cold Bay economy is dominated by three sectors: transportation, communications, and government (both state and federal). As we noted in scenario one, both communications and government employment are currently scheduled to contract significantly over the next decade. However, we project that the development of a major refinery in the region would slow this reduction in employment, and this slowing is reflected in Tables 18 and 19 above.

Overall we project that Cold Bay employment will drop slightly in the first two years during which construction is occurring, then rise substantially as permanent personnel are introduced both at the refinery and at the Coast Guard Base. The drop during the first two years will

be a result of the retrenchment of the government and communications sectors in particular, although as we noted this drop is projected to be less precipitous than otherwise if a refinery is constructed and operated nearby. In the third year the introduction of refinery and Coast Guard personnel will fundamentally alter the Cold Bay economic structure.

According to this scenario, then, Cold Bay will, over the first five years of construction and operation of the refinery, undergo a shift from a government-dominated economy to one dominated by private enterprise. For the first time in its history Cold Bay will be a non-government town, although government will remain important (particularly if we consider the fifty Coast Guardsmen as government employees). While all levels of government currently account for approximately 40% of Cold Bay employment, we project that by the end of year five government will represent only 15.4% of all employment, a drop from two out of every five jobs to one out of ten.

This drop in government employment will not be evenly distributed across all government sectors. The federal civilian branch will be the most severely affected. From a total of 27 employees in year 0 federal civilian employment will drop to 17 at the end of year five. However, state government will actually increase its number of employees from 19 to 20. This will occur through a drop in state employment in the first year as the Russell Creek Hatchery is closed and the biologist is let go from the Department of Fish and Game, followed by a rise in employment as more teachers are hired by the R.E.A.A. as the population of the community increases. We project that the number of people (including maintenance) employed by the R.E.A.A. will rise from five in year 0, to 6 in year 1, 8 in year two, and 10 in years three through five. Municipal government will also increase as an employer from the current one person (actually a clerk at halftime) to, by the end of five years, 8. The expansion of municipal government is discussed at length below under political activity.

A second sector which will experience at least relative contraction is the communications sector which will drop from over 20% of all employment to less than 7%. In both of these instances, that of government and communications, the reduction in importance of the sectors is not so much a result of retrenchment in that sector as it is a result of the rapid expansion of other sectors. This great increase in total employment means that any sector which simply maintains stable levels of employment will nevertheless drop sharply as a proportion of overall employment.

At the same time these areas of the Cold Bay economy are contracting other areas will be expanding. The most notable are the support/service, transportation, teaching (which we have already noted), terminal/refinery, and Coast Guard sectors. Support and service will necessarily expand, first in response to needs of the construction personnel, later in response to the increased permanent population of the community. We project that this sector will grow from the current 18 employees to approximately 68 employees after five years, which represents a percentage increase from 11.7% to 23.2% of all employment. Some of this support sector will doubtless reflect local entrepreneurial

efforts as the community comes for the first time to have an endogenous economic capability.

The transportation sector is also projected to undergo increases, though in this case they are more modest than those projected for the support and service sector. We estimate that increased transportation demands will result in an increase in Reeve employees, and in all likelihood will result in the initiation of at least one other charter service in town. Overall this will mean an increase from the current 32 transportation employees to approximately 42 by the end of the five years.

Finally, the major growth in the Cold Bay economy will be a result of the operation of the refinery and the Coast Guard Station which will be constructed in the community. Permanent refinery personnel will not begin to locate in Cold Bay until after the construction period is over, that is in the third year. This group will grow rapidly from 30 employees in the third year to forty-five in the fourth year and finally to 60 in the fifth year, and will ultimately represent 20.5% of all Cold Bay employment. The Coast Guard Base will experience all its growth at the conclusion of construction in the third year. From that point on approximately fifty employees will be stationed in Cold Bay, representing 17.1% of all employment in the fifth year.

Even though, under this scenario, some oil and LNG workers will live in Cold Bay, the major effects on Cold Bay will result from its position as a transportation, communications, and support center. Cold Bay would be the logical choice for a staging area for any facility in the area, primarily as a result of its excellent airport. Cold Bay would therefore be the community through which most personnel associated with such a project, both in the construction and operational phases, would have to pass. Much of the material for the project, and for its continuing operation, would also pass through Cold Bay.

The areas of Cold Bay economic structure which would be most heavily affected by such developments are the support sector and the transportation and communications sectors. The support sector would receive a substantial boost as the demand for food, dry goods, and so on rises steeply. The Flying Tigers store is already well-suited to fill such a need as it currently operates in the same capacity as a supplier to many of the smaller villages in the region. The direct air links between Cold Bay and Anchorage facilitate the shipment of goods through the community and make it the logical "halfway house" for such goods. The presence of Peninsula Airlines insures delivery capabilities to any nearby site with an airstrip. The transportation sector would be affected as the number of people passing through Cold Bay on the way to the facility, particularly during the construction phase, increases. This will call for additional personnel in many phases of airport operation. It will also provide an opportunity for additional charter flights from Cold Bay to the construction site itself. Currently Peninsula is the only charter operation out of Cold Bay, but in the event of such construction it is likely that at least one other such operation will be introduced. There are currently two people in town who have begun to plan for the construction of a large hangar, and this could easily lead to an air taxi service if development comes to the region.

In the support area the development of a major facility within the region could alter the current plans of the Flying Tigers Lines. Tigers has at present a twenty-five year lease which gives them exclusive rights to the operation of several businesses in town, most importantly a restaurant, bar, store, and hotel. At present it appears that Tigers is uninterested in renewing that lease, which expires in 1985, particularly as it seems unlikely that the state will consider renewing it as an exclusive lease. However, if it appears that there will be development in the region then Tigers would have an incentive to remain in town, even in the absence of an exclusive lease. We expect that this will depend to a large extent on timing. If it becomes obvious to people in town, and to Tigers in particular, that such development is imminent within the next year or so Tigers will probably remain in town since they have already established the infrastructure necessary to service such a facility. However, if the awareness of development does not occur for several years we expect that Tigers will go through with its plans to relinquish its Cold Bay holdings and that some other company will take over that position in the community.

Whether the major support company in town remains the Tigers or becomes another company which takes over the local Flying Tigers operation, we expect the support sector to gradually expand over the next decade, as reflected in the figures we have presented above. Supplying a major facility in the region will provide a boost to such support businesses, and that demand, in conjunction with ongoing demand from the villages in the region which have traditionally been served by Tigers, will insure the vitality of that sector of the Cold Bay economy. Several other retail and wholesale outlets of various kinds can be expected after the expiration in 1985 of the FTL lease.

3.3.1.3 Unemployment Patterns: Non-Labor Force

Cold Bay, as we have noted many times, is a full employment community. It is virtually impossible to survive in the community without a job, as a rule a job with a major outside employer. Housing is in very short supply, and it is necessary to work for a major employer in town in order to gain it unless one owns land. But the scarcity of land means this latter option is infrequently realized.

The construction of a major facility in the region of Cold Bay will probably not alter the full employment nature of the community. This will be insured if the community requests that the companies working on the construction phase of the oil or LNG facility do their hiring in Anchorage rather than in Cold Bay or one of the surrounding communities. The citizens of Valdez found that the most visible and one of the most troublesome contingents were those who came to the community hoping to find a job but without work guaranteed. This group has no means of income and can be involved in petty theft and other kinds of crime. If hiring was done in Anchorage and this was widely publicized, and no interviewing or hiring was done at the site, Cold Bay could avoid the problems associated with a group of unemployed laborers.

3.3.1.4 Economic Class Distinctions

We have noted several times the remarkably compressed nature of the Cold Bay income scale. Most of the workers in the community earn approximately the same range of income, and there are no distinctions currently which can be traced to income levels. However, this will change to a certain extent with oil-related development in the region.

Economic class distinctions will begin to emerge in Cold Bay gradually over the next decade if oil-related development occurs. The major developments will begin following the onset of operations at the facilities because it is then that certain elements of the oil-related work force will establish residence in Cold Bay. With the growth in population, the arrival of both a managerial and a laboring class, and the expansion of available local social settings such as restaurants and bars public behavior will begin to sort by economic class. The managerial and other higher level white collar workers will begin to associate at certain locations while the laborers will frequent other locations. This will not result in a pervasive and rigid system of economic class distinctions, but will be a gradual tendency throughout the forecast period.

3.3.1.5 Housing, Utilities and Real Estate

In the event of a major development in the region of Cold Bay, there will be additional problems which must be faced by the municipality in the areas of housing and utilities. This will become particularly crucial after the facility has begun its operational phase, which is the time during which we expect the greatest increase in the number of people actually living in Cold Bay itself. The problem of land acquisition will also be major, and underlies to a great extent many of the other economic problems facing the community.

The first group which will have to be housed is the Coast Guard. We have assumed a total of fifty Coast Guard personnel, half of whom will have families, for a total of 88 people. Housing for this cohort will be provided by the Coast Guard and will be constructed during the first two years, or during the construction period itself. This will consist of approximately the following units: 24 family units in fourplexes (six buildings total), 1 single family dwelling (for the commander of the base), and 12 apartment units in a single apartment building housing two enlisted personnel per unit.

Housing must also be provided for those personnel living in Cold Bay itself employed in both support and direct services. This number includes, by the fifth year, fifty-five single individuals and fifty-five with families, for a total of 193 people. Housing for this group will be provided by the companies which employ them. We estimate that such housing will be approximately as follows. For families housing will consist of ten duplexes, five single family units, and five sixplexes, housing a total of 138 people. For the single employees housing will consist of three ten unit apartment buildings, and one bunkhouse with common dining for twenty-five people, housing a total of fifty-five people.

It is important for the municipality to insure that these facilities are provided either by the government or by the companies which are utilizing them. This should present no problem in the area of housing per se. However, there will be a major problem to be faced by the city in terms of the provision of adequate utilities and community services.

First, if people are to stay in the Flying Tigers Hotel this assumes that Flying Tigers will remain in town following the lapse of their twenty-five year lease. As we noted above, whether this occurs depends to a great extent on timing. If it becomes obvious that there will be development in the region within the relatively short term then it is likely that Tigers will opt to remain in town and await the increase in business which would attend such development. However, if this development is delayed or not clearly imminent it is likely that Tigers will allow its lease to lapse without renewal.

In this second case it is possible that another outside agency may come into the community and begin operation of a complex similar to that run by Flying Tigers. According to local residents, several years ago there was an instance of an outside firm approaching Flying Tigers with a request to open a hotel and restaurant facility in Cold Bay. The request was rejected by Flying Tigers, but at the time Tigers had an exclusive lease. Once this lease expires, and particularly if Tigers pulls out of town, the situation will allow the entry of other operators.

However, the basic question around which all of these possibilities revolve is one of land. An outside company would clearly prefer to purchase and own the land on which such an operation, for example a hotel and restaurant, was initiated. This depends on the ability of the city to convince the state and/or federal governments to relinquish some land to local control. It further depends on the ability of the city to at least partially control the sale of that land, and the ultimate use to which it is put. We will discuss the political implications of these decisions below, but for now it is important to realize that much of the future of the community will depend on the success and wisdom of the city in the attempt to gain and control the use of land in the community.

The area of utilities is one which will also pose serious problems for the municipality over the next decade. The fact of development of a major facility in the region will in itself probably put little additional strain on these facilities. During the construction period there will be a small increase in the population of the community, as we noted above. However, this increase will in all probability be offset by the losses we project as a result of a contraction in the labor force in the transportation, communications, and government sectors. The net result will be little additional demand on the community infrastructure. It is during the operational period that the major demand will be placed on community infrastructure as the population of Cold Bay begins to rise steeply. This is particularly true during the first year of the operational phase, which is when the bulk of the population increase will occur.

The city is in a way fortunate that there will be little population increase during the first two years, that is, during the construction period. This will create a lag time of two years during which preparations can be made for the population increase which will occur from the third year on. If the city plans carefully and with foresight it can avoid the overtaxing of the infrastructural system through expansion and upgrading before the need is apparent.

Even with no major increase in demand, however, the City faces important decisions with reference to operation of the major utilities. As we noted in the first scenario, the next decade will see the City taking responsibility for the operation of the water and sewage systems, and these both pose problems even at current use levels. Both systems are overworked with the current population of 226, and both are currently operated by the Federal Aviation Administration. The FAA, in concert with its plans for retrenchment of its Cold Bay office, is eager to divest itself of responsibility for the operation of these systems. Previous to January, 1982, there was no local entity to which such transfer of control could be effected. However, with the incorporation of Cold Bay at that time as a second class city a local body was formed which could take such responsibility, and the FAA has been encouraging such a transfer since that time.

The major problem at present is twofold. First, the systems themselves, and particularly the sewage system, are substandard. The sewage system does not currently meet Environmental Protection Agency standards and the FAA and the city are involved in informal negotiations to determine who should be responsible for bringing the system up to standard.

The second aspect of the problem concerns the ability of the city to operate the systems once they are transferred to municipal control. This will be particularly crucial immediately following the transfer of control to the city. At that stage the city will have very few revenues (the current total city income per year is less than \$30,000) and will be asked to assume the operation of two major infrastructural systems. This will call for a decision concerning revenue generation. Ultimately, the city will be forced into one of two courses of action. First, the city may decide to raise rates for delivery of water and/or sewage service to those utilizing the services in town. In this way it may be possible to generate enough revenue to both bring the systems up to standard and to fund their continued operation following their upgrading. The second alternative would be for the city to generate revenue by introducing a taxation schedule, either property tax, sales tax, or both. We will discuss this alternative at length under political activity.

Other infrastructural systems are in somewhat better condition to accommodate a large increase in population. The electricity generation system is currently being expanded to a delivery capability of 1200 kilowatts, which is over twice the current peak demand on the system. This system can therefore nearly accommodate the projected total population at the end of five years from the beginning of construction. The telephone system also has adequate room for expansion.

3.3.1.6 Feedback

The changes in economic structure noted here will have lasting effects on economic activity through the next two decades. The major changes in kinds of activity will revolve around three factors.

First, the kind of economic activity will shift from heavily government, particularly federal civilian, to a mix of refinery/terminal, transportation, and support/service workers. Cold Bay's position as a transportation nexus for the region will be enhanced, and its dependence on purely government employment reduced, though the latter will remain an important area of employment.

Second, there will be a strong expansion of the local support/service sector. This will introduce for the first time the possibility of significant local entrepreneurial activity. The needs of the oil-related workers and facilities will provide the opportunity for several local service and supply ventures and this area of the economic system should undergo rapid expansion. This will create a local business sector which has been absent until now. It will also create a group of entrepreneurs who are committed to the community as a marketplace.

Third, Cold Bay will begin to increasingly display economic class distinctions as a large population of laborers and a smaller population of managerial workers begin to settle in Cold Bay. The increased population will stimulate the local service sector, resulting in more social locations in which such distinctions can be expressed. This process will not begin until the operational phase, and will progress only gradually throughout the forecast period, not becoming entrenched or rigid at any time throughout that period.

The result of all these changes will be that the quality of Cold Bay economic activity will remain essentially unchanged. The community will remain in an essentially instrumental relationship to the surrounding region, providing the movement of goods and personnel and serving as a supply center. It will continue to depend above all on the airport and on its direct air links to Anchorage and other major urban areas.

3.3.2 Social Cohesion

Cold Bay social structure has long been characterized by a centrifugal orientation in which community members are at least as closely linked socially to people outside the community as they are to those within the community. The ties of community are relatively weak, as a result of the transient nature of most employment, occupation is a major determinant of neighborhood and, by extension, of social networks, and associational ties in general are far more important than kinship ties. In the following section we will consider the effects of the establishment of a major gas or oil facility in the region of Cold Bay on these aspects of social structure.

In general the development of such a facility will serve to maintain the

outline of Cold Bay social structure. This will be true both during the construction period and during the period of actual operation of the facility. Cold Bay is long accustomed to transient workers passing through the community, indeed most of the residents are transients, even if often long term. Thus, the introduction of the construction crews, who will be involved in the establishment of the facility, will be easily assimilated by the community. Few of the workers will be stationed in Cold Bay itself, so they will be relatively unininvolved in Cold Bay social life. Following the construction period Cold Bay will serve as the staging area for the facility, and will be utilized as a place of residence by some workers and management personnel, and it is at this time that the major social impacts will begin to be felt.

There will be an expansion of existing social venues or the addition of others, and it is primarily in these contexts that the workers for oil-related companies will be involved with the people of Cold Bay.

3.3.2.1 Kin Behavior

We have noted the general lack of importance of kinship in Cold Bay. The effects of a major oil-related development in the region on the lack of kinship networks in Cold Bay will be negligible. There are two reasons for this. First, the majority of workers will be on tours of duty, and will not live permanently in Cold Bay. Rather, they will maintain residences elsewhere, primarily in Alaska but also in other states of the union, where their family will remain and which they consider their genuine home. The extent of kinship links contributed by this group, then, would probably be siblings who happened to work for the same or related companies with operations in Cold Bay.

The second reason kinship links will not be in evidence among the oil-related workers actually explains the first. As in almost every other instance of a worker in Cold Bay these men will be working for a major outside corporation or agency. They will have worked several other places for the same company, and probably expect to work in yet other places. That is to say, just as with the rest of the people of Cold Bay, these are transient workers for outside agencies. Therefore, for the vast majority of those who settle in Cold Bay the kinship system will not extend beyond the nuclear family, and many will not even have their family present.

3.3.2.2 Non-Kin Behavior: Neighborhood and Associational Patterns

Neighborhood patterns will change to some extent given our assumptions. We assume there will be some retrenchment on the part of the FAA and RCA, even if it is eventually less than presently anticipated. In that event some housing will be opened in Cold Bay, a relatively rare occurrence. This means there may be room, if the homes can be leased, rented, or bought, for some people to move into a neighborhood who do not share occupations with others in that neighborhood. This would break the strict geosocial equation of occupation and neighborhood and contribute to cross-occupational social ties. However, among the existing neighborhoods of Cold Bay this is expected to occur on a small scale.

There will, in addition to some changes among existing neighborhoods, be new neighborhoods in Cold Bay. That percentage of people working at the oil and LNG facilities who choose to live in Cold Bay will provoke a minor housing boom. This, of course, assumes that land becomes available for private purchase (a topic covered under both economic and political structure). Two kinds of building will occur. First, existing hotel accommodations will be expanded and new accommodations may be built. This will occur in the existing downtown area. Second, housing will begin to appear on the periphery of the existing community. This housing will be dominated by oil and LNG workers and will come to constitute another example of occupation determining neighborhood.

The options of additional social venues, such as bars and restaurants, will encourage the development of social distinctions as one place becomes associated with a certain group of people and another with a second group. The emergence of these groups will depend on the number of managerial class workers establish residence in Cold Bay, the number of blue collar workers, and the number of successful local entrepreneurs who are able to profit from the arrival of the companies. We expect these groups to all make an appearance in Cold Bay, and to introduce and encourage social distinctions which had not be operative before. However, as long as the facilities are located at a distance from the City these effects should not be overwhelming.

These social effects will vary in speed and duration. During the initial two year period of construction there will be extremely heavy traffic through the community to the site and from the site back to Anchorage. However, very few of these people will take homes in Cold Bay. Those who stay in town for a period of time will seek a hotel. They will not become long term members of the community, and their relations with the majority of community members will be essentially instrumental.

Once construction is over, during the operational period, this will change. It is at this time that some small percentage of the workers and managers at the refinery and terminal will take up residence in Cold Bay. Thus, it is the operational and not the construction period which will have the most impact socially if the facility is at a distance from the City. This is the period when incipient social distinctions will make themselves felt as certain groups begin to frequent certain social areas while others patronize different locations.

3.3.2.3 Intraregional, Interregional, and Interstate Networks

Intraregional, interregional, and interstate networks will also be altered under this scenario. In general intraregional and interregional networks will become stronger, while interstate networks become somewhat weaker. The extent to which each of these occurs depends primarily on the number of oil-related personnel who live in Cold Bay itself. If we assume approximately ten percent this will have a significant, though not overpowering, effect.

Intraregional networks will become more intense. This will result from

the implication of the entire region in the operation and supply of the refinery and terminal. Such a facility will draw the surrounding area closer together as the facility is partially supported, both with material and personnel, by the region. Direct employment opportunities, indirect support and service employment, and other effects of a major facility will increase regional integration. Cold Bay will be the focus of this process since the bulk of the men and material will come through the Cold Bay Airport. Most of these intraregional networks will remain essentially instrumental in nature, and there will be little increase in purely social visiting or information exchange. Nonetheless, the level of intraregional interaction will rise considerably.

Interregional networks will also be strengthened and expanded as a result of the establishment of a major facility in the region. This will occur in two ways. First, the workers at the refinery and terminal will themselves have extensive links with the rest of the state, but relatively few, if any, links within the region of Cold Bay. The people working on both the construction and operation of the facilities will in many cases be those who gained experience in such work during the pipeline construction and the construction in Valdez. This means there will be a higher proportion of Alaskans than was the case in Valdez, so ties to other parts of Alaska will be particularly strong. Second, as the increased demand for supplies and services is felt in the region Cold Bay will find itself in more intense interaction with Anchorage and other regions of Alaska. Cold Bay will be the transportation and communications center of these activities and Cold Bay merchants and service workers will be in closer and more frequent contact with Anchorage than previously.

Interstate networks, however, will decline in importance if a major facility is built in the region. This will be a result of the influx of a number of people whose primary ties are to the rest of Alaska rather than to the rest of the United States. Those currently working in Cold Bay are primarily people with interstate ties of some strength. However, the expertise of the Alaskan worker, both construction and operational personnel, will mean that a disproportionate number of those working at the facilities will be from other areas of Alaska, primarily Anchorage. Though the number of interstate links will remain approximately the same, they will come to form a proportionately smaller share of the total social links.

3.3.2.4 Feedback

The effects of these developments on Cold Bay social structure will be important but not pervasive. Though the number of people moving into the community will be substantial, they will not inundate the community in the same way they would under the conditions of scenario three. The growth of the population in the event of a regional facility, as opposed to one located in Cold Bay itself, will be more gradual and will peak at a much lower threshold. Nonetheless, there will be several important effects. In general the structure of Cold Bay social networks will gradually diversify and become more complex.

First, the traditional determination of residence by occupation will

begin to break down to some extent. As homes become available with the retrenchment of several government agencies it may be possible for people to get homes which are not directly owned by their employer. However, this should not be overstated, since even the oil-related workers who live in Cold Bay will probably be living in housing provided by their employer.

There will also be effects on the nature of social networks. As occupation comes to determine residential location less it will exert less influence on social networks, and other associational factors than occupation will be important in their formation. Associated with this change will be the introduction of social class distinctions based on the economic distinctions discussed above. With more social venues and increased distinctions economically among the segments of the population groups will emerge which socialize primarily with one another and less with others.

The extent to which these processes occur will depend largely on the success of the city and individuals in gaining land. If land becomes generally available then the options for residence will increase considerably, and it will be possible for the process of non-occupationally determined residence to progress further than if no land is available. If enough land becomes available it is possible that neighborhoods may actually become at least partially determined by income, rather than occupation per se.

3.3.3 Political Effects

The construction and operation of a major gas and oil facility in the region of Cold Bay will also provoke political change in the community. In this section we will discuss three major areas of change which deeply affect the political arena. First are changes in the structure of municipal government. Second are the major political issues to be confronted during the projection period, including taxation, the acquisition of land, and the assumption of responsibility for services, utilities, and facilities. Third are changes in mechanisms of social control which will occur during the forecast period.

3.3.3.1 Administration: Municipal Government

Cold Bay has only recently incorporated and formed a municipal government. With the growth in economic activity and population which will attend the establishment of a major facility in the region Cold Bay will come under pressure to expand municipal government in several areas.

First, the municipal government itself will undergo a change from essentially volunteer labor to salaried labor. The forces of change which will confront the city will be too great to be met by a cadre of people who are able to devote only part time to the administration of the city. The city council positions will probably remain unsalaried, but it will be necessary to institute a municipal infrastructure which can oversee community development and plan for the future. The city will probably hire a city manager to run the bureaucracies which will develop to

oversee the processes of municipal development. There will be a need for a formal law enforcement division of the government, consisting of at least one patrolman and perhaps several. There will be a need for a City Planner Department, a City Treasurer's Office, and a Public Utilities and Facilities Office at a minimum. Municipal Government will become a significant local employer.

The expansion of municipal government will increase the possibility of local political conflict. As those now in control of municipal government are confronted with these changes it will be necessary for them to relinquish much of their current power in favor of the professionals hired from outside. This means that the city will have to engage in a search for qualified personnel to fill many of the appointed positions in municipal government. It is important in particular that the city manager hired be one who is satisfactory to all involved and with whom the city council can operate effectively and efficiently. Care in this hiring process can obviate many problems later.

Most of the people who are hired to operate the municipal structure will be outsiders who are not committed to Cold Bay on a long term basis. This process presents the community with several challenges which should be made explicit in advance of the process itself.

First, the control of municipal government will inevitably be assumed by people who have relatively little experience of Cold Bay itself. With the influx of population will come a whole new group of voters who may well return their choices to the city council. A danger here is the possibility that this group of officials may be tempted to bond the city into long term debt in order to meet short term needs. As in the case of the third scenario, this would be a terrible mistake if such expenditures are based on the levels of activity characteristic of the construction phase. While there will be a need for expansion in many areas, if it is done on the basis of the construction period the city will find itself burdened with an intolerable debt in the operational period, at the same time that it has overexpanded beyond the long term needs of the area.

Second, the city may find that this new municipal structure is willing to rezone certain areas of the city limits with an eye toward the short term rather than the long term consequences of such action. That is, areas which might, in the long run, be preferably residential could be zoned commercial and developed with little concern for longterm esthetic or pragmatic considerations. The same is true of the expansion of local utilities and facilities which might be expanded too much during the construction period and become a liability in the operational period.

Most of these problems revolve around the danger of taking the construction period as diagnostic of the long term effects of oil-related development. It must be clearly understood that the influx and demand of the construction period is only temporary and will reduce considerably during the operational period.

3.3.3.2 Major Political Issues

Beyond the restructuring of municipal government there will be several other political issues which will have to be addressed over the projection period. These include the assumption of responsibility for utilities and facilities, the administration of community development in general, the decision whether or not to institute a tax structure, changes in the means of social control, and, underlying much of this, the ongoing attempt to gain control of some land for private or municipal ownership.

One of the most immediate problems to be faced by the city has to do with the operation of community utilities and facilities. Currently the sewage and water systems are operated by the Federal Aviation Administration, and the maintenance of streets, the airport, and the dock are the responsibility of the state, particularly the Department of Transportation and Public Facilities. Each of these areas poses problems of its own.

The sewage and water systems will be taken over by the city in the next few years. We have already noted the economic problems presented by these utilities, but there are political aspects to this situation as well. The FAA is currently involved in a retrenchment movement which will greatly reduce their contingent in Cold Bay. This means they are eager to divest themselves of the responsibility for the operation of these utilities. The City is willing to take over operation, but there is a political problem concerning the responsibility for the capacity and quality of the service. The water system is currently operating at capacity and will have to be expanded in the event of any significant population increase. The burden for financing this expansion will probably fall to the city and will be a major issue in the near future. The political situation with the sewage system is somewhat more complex. The system does not currently meet Environmental Protection Agency guidelines for operation, primarily because it is already overburdened at current levels of demand. The city will probably attempt to negotiate with the FAA to have the latter bring the system up to standard before it is transferred to the municipality. Once this occurs the system will still have to be expanded, something the city cannot realistically hope the FAA will do. The assumption of responsibility on the part of the city for these utilities will therefore involve a delicate series of negotiations for which the local officials should plan well in advance.

Much the same political process will occur between the city and the state. The state currently operates the airport, the dock, and does street maintenance. The latter will pose the least problems. It appears that the state will probably, in the event of a transfer of power, excess some of its equipment which the city could then purchase for the purpose of continuing with street maintenance. As essentially all the streets in the community are currently dirt or gravel, this generally involves grading and the spreading of oil and/or gravel. We expect this responsibility to be transferred to the city within a few years.

The airport and the dock pose more serious problems. The operaton of these facilities is very expensive and is currently beyond the scope of

the municipal government. Nonetheless, these facilities will eventually be turned over to the city, and preparation must be made for this eventuality well in advance. Successful resolution of this process will take, from the standpoint of the city, adroit political maneuvering. It would be preferable for the city to reach an arrangement with the state whereby transfer of control could occur gradually over several years, during which period the city could prepare itself for sole control. The airport in particular is currently far beyond the means of a community the size of Cold Bay to operate. In order for the city to take responsibility, then, for these major facilities there will have to be several other major changes, particularly in the revenue generating capacity of the municipality. This brings us to a discussion of possible changes in the tax structure of the community.

The problem of revenue generation will be an acute one for the City of Cold Bay over the duration of the projection period, but particularly during the first few years during construction and initial operations. During this period the demand on community services of various sorts, from the water and sewage systems to the airport and the dock, will be greatly increased. However, this increase will be only temporarily at the levels achieved during the construction period and will eventually fall back to more moderate levels during the operational phase. The city must therefore institute a means of collecting municipal revenues while being careful not to overextend itself during this initial period. During construction revenues may be relatively high, but they will once again drop off once the operational period begins.

These demands on the city will almost surely force it into instituting a system of local taxation. The possibilities of revenue from both property and sales tax will be too enticing to resist, particularly given the additional burdens which the city will be asked to assume. The city should also plan carefully to make the airport and the dock profitable. If this process is handled correctly it should be possible for the municipality to generate considerable revenue from the operation of those facilities. Indeed, on the assumption that the oil-related facilities will be situated at some distance from Cold Bay it will be crucial for the city to make the airport and the dock money-making facilities. This is because, unlike the situation in the third scenario which assumes the location of the oil-related facility in the community itself, there will be few direct revenues from oil-related property taxes coming into the municipal accounts. Therefore, other means of income generation must be considered. While property and sales taxes will take some of the burden, it is unrealistic to assume that a community the size of Cold Bay, even with the additional population expected as a result of oil-related development, will be able to generate enough in tax revenue to support the greatly increased demands on municipal government. Therefore, the airport and the dock must generate a considerable amount of this revenue. It is only at those two facilities that Cold Bay will be able to realize substantial income from the companies which are operating in the region, since the facilities themselves will be outside the taxation jurisdiction of the community.

3.3.3.3 Levels of Conflict

Cold Bay is currently free of any marked social or political conflict. The community is relatively homogeneous economically and socially, and there are few overt expressions of social conflict. However, with the changes which are projected for the next two decades there are some areas in which the potential for such conflict exists and which should be planned for in advance.

The first possible area of conflict will be between the municipal government and the oil-related companies which will move into the area. There will be an understandable desire on the part of the oil-related firms to have the municipal government assume much of the cost of the upgrading and construction of housing, utilities, and related activity which will have to take place with the development of a regional facility. It will be important for the municipal government to come to an early and clear understanding of relative responsibilities in these areas. If the municipal government is careful in planning for these developments it should be possible to gain several important concessions from the companies locating in the area in terms of aid in upgrading local utilities and facilities which will be used, in part, by oil-related personnel.

A second possible area of conflict is between the permanent residents and the influx of new transients. However, in all likelihood this will not become overt as the permanent residents may simply reduce their levels of social interaction as they are overwhelmed by the population influx. Nonetheless, the end result of this process will be a further reduction in the sense of community which characterizes Cold Bay as the permanent residents become an ever smaller proportion of total population.

Finally, an ongoing theme during this period will be the relationship between the state and the municipal government. At several points there are crucial issues to be resolved between the two, and these will take a good deal of the energy of the members of municipal government over the projection period. These include, most importantly, the issues of land acquisition and the assumption of responsibility for the operation of the dock and the airport.

3.3.3.4 Measures of Efficiency

Measures of efficiency include both an objective and a subjective component. Objectively efficiency can be measured by the level of community debt, while subjectively it can be measured by the level of community satisfaction. In general there will be little change in these measures through the projection period, although there are some areas in which there could be possible problems.

The level of community debt is something which will have to be carefully monitored and controlled by those who are in positions of power in the municipal government. As noted above, the temptation will be to overextend the city in terms of loans or bond issues during the construction period. However, if this is avoided, the long term situation should be

favorable for the city as it begins to generate revenue from the operation of the airport and dock and avoids large short term debt.

Community satisfaction levels should remain essentially unchanged with one possible exception. In general, those who go to Cold Bay are satisfied with relatively little in the way of social or cultural life. Those who go to the community do not expect to find such opportunities and are not disappointed when they are not present. The period of time spent in Cold Bay is seen as a hiatus during which the important activity should be to make some money and prepare for the future in another location. Therefore, since expectations are not high before arrival in Cold Bay the general lack of social and cultural activities is not seen as a burden.

However, there is one group which may experience a definite decline in levels of satisfaction. This is the permanent resident group. This group is not in Cold Bay for instrumental reasons, that is to make money or because they were sent. They have made a choice to live in Cold Bay because of the isolation, the natural resources available, including hunting and fishing, or for any of several other reasons which revolve around the advantages of an isolated, rural existence over a crowded urban existence. The influx of population which would attend oil-related development would in all probability be seen as a deterioration in the quality of life by these permanent residents. This could provoke either increased social isolation on the part of the permanent residents or might even lead to their abandonment of the community.

3.3.3.5 Means of Social Control

Finally, as we noted briefly above, the means of social control will also have to be adjusted during this period. The growth of the population, even though it will be considerably less than that expected under the third scenario, will cause several changes which will call for the formalization of social control. Where currently the community relies almost exclusively on informal means of social control, we expect that the projection period will see the institution of a Police Department in the community. The movement of large numbers of construction workers through the community will call for formal law enforcement capabilities. As more social venues, particularly bars, are opened, and more people come into, or at least through, town there will be increases in petty crimes such as public drunkenness, assault, and so on. Once the construction period is over there will be less need for law enforcement officers. We expect that the community will probably need two or three officers during the construction period, and that this number can be reduced to one or two once the operational period begins.

3.3.3.6 Feedback

Overall the major preoccupation of the municipal government over the projection period will be the management of the diverse processes which together constitute community development. In the widest sense this will be the task of the city over the next ten to twenty years: managing the development of the community of Cold Bay in the face of large

scale oil-related development in the region. This will take professional administrators with experience in city planning and operation. The ultimate result of this will be the transfer of political power from part time officials to full time municipal employees, and the formalization of many aspects of political structure.

The most important political decisions will revolve around negotiations between the city and the oil companies concerning responsibility for the upgrading and building of housing, community infrastructure, and so on. The most elementary aspect of this will again be attempts on the part of the city to gain some land, particularly from the state. The city will also come into control of the airport and the dock and, through judicious planning, should be able to convert those facilities into substantial revenue generators. However, the process of assumption of power should be carefully orchestrated to insure that the municipality does not come under too heavy a burden too rapidly. The effect of this will be to establish the city at last as a viable and powerful local entity which must be consulted and accounted for by major external powers.

The most fundamental changes, then, will be twofold in the political arena. First, the structure of municipal government will be overhauled with professional administrators in positions of considerable power. Second, the city itself will become a strong fiscal entity as it gains the means to generate substantial revenues for the first time. Both of these processes are signs of the maturation of Cold Bay as a political entity.

3.3.4 Religious Activity

3.3.4.1 Belief System and Levels of Participation

Cold Bay residents are essentially pragmatic. The level of religious belief is not high. Most are nominally Christian, mostly of one or another Protestant denomination. However, most do not appear to be heavily dependent on a religious belief system.

If a major oil-related facility is located in the region of Cold Bay, but not in the community itself, we project little change in the religious structure of the community. The city currently has one interdenominational chapel which fills the religious needs of the citizens. However, this chapel is only moderately utilized by residents.

During the rest of this decade we expect the chapel will prove to be adequate for the religious needs of the community. At most a small expansion of the facility may prove to be in order to accommodate the increased population. However, as the chapel is now undersubscribed we expect it will be able to meet this slightly increased demand. In the decade from 1990 to 2000 increased population will probably result in inauguration of at least one other explicitly denominational church.

3.3.4.2 Feedback

Over the next two decades religious activity will first remain fairly stable then begin to increase gradually among Cold Bay residents. During the first decade there will be little change, but during the second decade the possible increase in families and the overall increase in population will be felt to some extent at the level of religious activity. By the 1990s it will probably be necessary to expand the one small chapel, and it is likely that other religious sects or movements may enter the community. The structure of religious activity will likely change at this time as the denominational affiliations of other churches forces the currently interdenominational chapel to become more obviously associated with a particular belief system. However, no matter how large the community becomes the level of religious activity will remain fairly low. Most are in Cold Bay for essentially pragmatic reasons and religious activity is not a high priority, at least during this phase of their lives.

3.3.5 Education

3.3.5.1 Participation Rates and Facilities

Education is an area which will also feel the effects of a major oil-related development in the region. In general the major effects will be an eventual need for expansion of the physical facilities. However, the curriculum and achievement levels on the part of the students are expected to remain stable.

Currently the Cold Bay School is in the process of being expanded with the addition of a multipurpose room. The school itself has a current enrollment of approximately 45 to 50 students. However, the retrenchment of the FAA will reduce the school population somewhat, although this reduction will be more than offset by the increased population as a result of the operation of the gas and oil facilities. We expect that there will eventually be a need for expansion of the school facilities to be able to accommodate approximately seventy-five to one hundred students. However, this should not be done until the long term demand is clear. This will become clear only during the operational period.

We expect achievement levels to remain constant over the projection period. Cold Bay students are relatively achievement oriented and this is largely a result of the fact that most of them come from other parts of the state or country in which they have had extensive experience with the larger sociocultural system. They therefore share the values placed on individual achievement, success, and so on. We expect this to continue throughout the projection period.

We also expect few changes in the current curriculum of the Cold Bay School. The present curriculum is similar to that operating in a typical urban school in the rest of the United States. It is intended to prepare the students for further education, on which a high value is placed. Vocational skills receive less emphasis than do academic skills, and we expect this to continue to be the case as most students will still be the children of white collar professionals or skilled blue

collar workers who place a high value on academic achievement.

3.3.5.2 Feedback

Throughout the forecast period there will be a need for a gradual expansion of the school facilities in Cold Bay. Beyond this, however, we expect little change in the nature of educational activity. The community is unusually committed to education and most believe that it is important for their children to go beyond the secondary level. There are few disincentives to continuing this education, and this will continue to be the case with one possible exception. It is possible that some students will be tempted to work at the oil facilities rather than complete their education. However, this in itself will take the acquisition of certain skills before the individual would even be considered for such employment. For this reason we do not expect the oil facilities to significantly affect the educational aspirations of the Cold Bay students.

3.3.6 Health Care

3.3.6.1 Services and Facilities

Cold Bay is in a relatively good position with reference to health care as the community has only recently completed construction of a modern clinic. We expect this clinic will accommodate the health care needs of the community over the projection period, even with the expected increases in population. It is possible that the clinic may establish a relationship with a doctor from outside the community to come into the city on a regular basis to provide more professional health care for the local population.

The major demand on health care facilities will be during the construction period, for two reasons. First, this is the period during which the most people will be in the region, thereby logically calling for greater levels of health care. Second, the construction phase is the most dangerous from the standpoint of physical, particularly accidental, injury. The city should insist that the construction and oil companies provide a good deal of their own medical and emergency care or share in the increased burden placed on the clinic. The city should be careful not to overexpand its own medical facilities too or they will find themselves with too large a facility following the construction phase.

3.3.6.2 Feedback

Health care is an area in which Cold Bay is relatively well prepared for the development of oil facilities in the region. The clinic can handle most problems which might arise, and it is likely that the city will, in concert with the oil companies, arrange for a doctor to be at least intermittently present in the community. This should provide sufficient health care for the needs of the community over the projection period.

The kinds of health issues may well change during the forecast period.

During the construction period, in addition to accidental injury, it is likely that issues of alcoholism and stress related illness may become more important. This could result from the fact that many of the construction and/or operational workers who are "off rotation" may remain in Cold Bay to socialize, drink, and spend their time while they are not working at the facilities. The presence of a group of people who are not working for a period of a week or two will be novel for Cold Bay, and will call for some adaptation on the part of local health care delivery personnel.

In general the structure of health care will change in two ways. First, with a doctor visiting, and perhaps eventually residing in, Cold Bay health care will be professionalized. Second, with the presence of major oil companies health care delivery will become a joint government/private enterprise activity.

3.3.7 Recreation

3.3.7.1 Participation Rates and Types of Activity

With an expansion in the number of people in the community of Cold Bay will come some changes in the patterns of recreational activity engaged in by those inhabitants. The number of people will lead to an increased utilization of the subsistence and sport resources in the region, which are considerable. This will pose little problem for the resources themselves, as they are among the most abundant on the continent. The only potential problem is the overuse of the physical facilities.

The major concern of the Fish and Wildlife Service with additional demand on the area concerns Izembek Refuge. The concern is not with the game per se, but with the potential overuse of the trails and roads in the refuge. These roads are kept in a purposely primitive state, and the Service fears that too many people would begin to despoil the environment. However, we do not project that the number of people who will come to Cold Bay under this scenario will necessitate the extreme measures we contemplate under the third scenario, that is there will be little reason for restriction of entry to Izembek unless use rates are much higher than anticipated.

Other, technological, means of recreation will also remain popular. These include four wheel drive vehicles and three wheeler motorcycles which are used to explore the region around town and as transportation for other sporting activities. Flying will also remain a popular form of recreation, encouraged by the excellent airport.

3.3.7.2 Feedback

As the population of the community grows the level of use of the fishing and game resources in the community will rise. However, these levels will still be considerably lower, per capita, than is characteristic of the surrounding villages and communities. Cold Bay residents will still be largely transient, and they are unaccustomed to depending on subsistence resources for a major part of their diet. They hunt and

fish primarily for sport, and there is not the added incentive of affirmation of ethnic identity which exists for many in the surrounding region.

Third Scenario

3.4.1 Introduction

The final scenario to be considered in the Cold Bay case assumes the establishment of a major gas or oil facility at Cold Bay itself. In constructing this scenario we have made several assumptions which should be clarified at the outset. However, before we begin we should note that this scenario faces several problems if it is to occur. The major problems concern the difficulties of large ship navigating in Cold Bay. The bay itself is not deep enough in most areas to accomodate large tankers and would require extensive dredging and other improvements. According to long time residents most of the channel entrance, which would have to be deepened, is bedrock and would present great difficulties in any attempt to deepen it. Outside Cold Bay are more obstacles in the form of a number of reefs and shoals which make the approach to the channel entrance perilous at best.

3.4.2 The Relevance of Valdez

In order to gain an idea of the scale and scope of the changes which will affect Cold Bay we want to depend on hard data to the extent possible. To this end we have researched the effects, both through fieldwork and through available literature, of the construction of a similar major facility in Valdez, a process which occurred in the seventies and which can provide us with valuable data concerning the magnitude and effects of such a development. The Valdez experience is invaluable for gauging and preparing for the changes which will occur in Cold Bay. Based on our research in Valdez we have distinguished several aspects of the development process which deserve close attention by those involved in any similar process in Cold Bay. These include strategies on the part of the municipality during both the construction and the operational periods of any facility constructed in or near the community. We have found particularly useful, in addition to our work in the field, a paper by Michael Baring-Gould and Marsha Bennett called *Social Impact of the Trans-Alaska Pipeline Construction in Valdez, Alaska, 1974-1975*.

Briefly, it will be important for Cold Bay municipal officials to be aware of the effects of rapid population growth and activity attendant on implementation of oil-related development and of the pitfalls which should be avoided. The construction phase is potentially dangerous in that there will be a temptation to rapidly expand the community infrastructure to accommodate the great influx of personnel. The danger is that the community may find itself committed to an onerous level of long term debt in order to finance such improvements, only to find subsequent to the construction period that such a large scale expansion was not really necessary once the operational period ensues. We will discuss this at length below when we discuss population and employment changes and political activity. Valdez has several other lessons to offer as well, including the nature of hiring to avoid the creation of a local class of unemployed job seekers, the social consequences of large scale development, difficulties in working with the state government, and so

on. At most points in the following discussion we will refer explicitly to events which occurred in Valdez which we feel are relevant to the Cold Bay situation.

3.4.3 Overview

In the following discussion we will examine the effects of oil-related development on all aspects of Cold Bay social and economic structure. The areas discussed will include economic structure, social structure and cohesion, political structure, religious structure, education, health care, and recreation. We have assumed that all development occurring as a result of oil-related activity will take place in Cold Bay itself, and therefore have a direct impact on the community. In this sense this scenario will result in the most drastic economic, social, and political effects on Cold Bay of the three we consider in this report.

Before we begin the detailed analysis a word about the major sources of change and major impacts on Cold Bay is in order. The areas which will be most heavily impacted in Cold Bay are, in order of decreasing effect, demography, the economic system, the social system, and political structure. We expect the community to become one of the major population centers in Alaska; one of the two largest communities in the peninsular/insular region (with Unalaska). During the construction period population will burgeon to approximately 5,000, and following construction, during the operational period, population should stabilize at approximately one thousand to twelve hundred people. Economically the community will experience a shift in which government employment loses its position of dominance to the private sector, in this case the oil facilities. Government contribution to the labor force will drop precipitously from about 40% of all employment to less than 7%. At the same time refinery workers will come to represent about 60% of all workers where today no workers are involved in that sector.

One of the major effects of these demographic and economic changes will be in the political arena. The growth of the community, the need for infrastructural expansion and upgrading, and the increasing power of the political authorities will result in a restructuring of municipal government, struggles for political power, and difficult political decisions. The political structure will be greatly expanded, with several new bureaucracies forced into existence to deal with mounting problems of control and community direction. Socially these changes will result in a diminution of the already tenuous sense of community which has long characterized Cold Bay. Workers in oil-related activities will be in town on tours of duty and will "turn over" every week or two weeks, depending on the schedule arranged by the refineries. Individuals will not be committed to Cold Bay, but will consider their "real" home to be somewhere else in Alaska or even in the lower forty-eight. A final assumption of some importance is that the oil terminal in Cold Bay will be approximately the same size as that in Valdez. We will discuss this factor at length in the section on economic structure.

3.4.4 Economic Activity

In this section we will discuss the effects of a major oil terminal and gas refinery in Cold Bay on income distribution/disparities, demographic and employment patterns, the cash economy, including government, communications, and transportation sectors, and marketplace relations. We will then note the effects on unemployment patterns (the non-labor force), and on housing, utilities, and real estate.

3.4.4.1 Income Distribution/Disparities

The changes in economic orientation can be divided into effects on those people already in Cold Bay and on those coming into the community. There will be some effect on those already in Cold Bay, but probably less than might be expected. This is because those in Cold Bay currently are really not in a position to take advantage of the economic boom which the city will experience for two reasons. First, everyone already in Cold Bay has a job, generally fairly well paying, which brought them to the community in the first place. For most residents this job represents a career position with either a government agency or a major outside corporation, such as RCA. Therefore few of them can be expected to abandon their chosen career for a temporary construction position, or even for a more permanent position once the operational phase is reached. The second reason few residents will be able to take advantage of the economic boom concerns the lack of private land in the community. Very few of those currently living in Cold Bay actually hold land (approximately 6 out of 226 in the summer of 1982). This means that few will be able to speculate in land through either sale or lease to oil-related firms as they develop their facilities in the community. Therefore income levels for those already in Cold Bay will not be substantially altered, although it is clear that the overall structure of income levels will probably be altered significantly as a result of the influx of thousands of construction and, later, operational personnel associated with oil-related development.

Nonetheless, some few of the current Cold Bay residents are in a position to benefit from oil-related development. This is particularly true in the service and support sector. There will be, as already noted, an increased need for transportation services, some of which can be accommodated by an expansion of the locally owned Cold Bay Truck Rental and some of which can be met through an expansion of the current charter flight services available or even through the inauguration of additional charter services (such as the one tentatively planned by two local entrepreneurs). Nevertheless, the final outcome will be less of a local multiplier than would otherwise be expected since most of those working in Cold Bay are already working for major outside corporations or agencies and those coming to Cold Bay for oil-related employment will likewise be working for an organization which will direct most of its profits outside the community.

There will, however, be the possibility for the introduction of income disparities by those who move into the community attendant on oil development. The workers at the oil facilities will be roughly divided into management and laborers, and there is the potential in that

division for income distinctions to arise in Cold Bay. If the facility is in Cold Bay itself, and the population of the community is affected to the extent projected here, then the town will begin to see the effects of wide differences in income. It is likely that the manager class will begin to socialize at certain locations, and will take on certain economic markers of upper status. At the same time the bulk of the refinery and terminal workers will be blue collar laborers who are not earning the incomes characteristic of the white collar management group. For the first time Cold Bay will have distinct economic classes. The size of the population influx will make these classes that much more obvious at the local level.

3.4.4.2 Valdez and Cold Bay: Population and Employment Patterns

The most basic fact of any development of a major gas or oil facility in Cold Bay is the pattern of population increase which would be provoked. From the experience gained in Valdez we can construct a fairly accurate picture of what can be expected. In general the population will undergo a rapid increase, reach a peak, and decline once again to a level which, though lower considerably than the peak, is much higher than the current population of the community.

Before we discuss the population changes which occurred in Valdez a word concerning the size and capacity of the oil facility itself is in order. The facility at Valdez occupies 1,000 acres. The storage facilities consist of 18 tanks, each with a capacity of 510,000 gallons, for a total capacity of 9,180,000 gallons. Tanker loading facilities include one floating and three fixed berths able to accommodate tankers of 16,000 to 265,000 deadweight tons and load oil at rates up to 110,000 gallons per hour. This facility is taken as the approximate template for estimating the size and effects of the projected Cold Bay oil terminal. However, in the Cold Bay instance we will also consider a LNG refinery, which will be built along with the oil terminal itself, and which will, as we will show below, employ far more men than does the oil terminal alone.

In the Valdez case the pre-pipeline population (1970) was 1,008 people. Once it had become clear that development would occur the population of the community began to rise rapidly merely in anticipation of that event. From 1970 to 1973 the population climbed to 1,350, and this was prior to actual construction. Construction actually began in January of 1974, and from this period on population rose even more rapidly. By July of 1975 population had risen to 6,512. These are official figures, and discussions with permanent residents of the community indicate that many people feel the actual total population had peaked at about 10 to 12,000. Even accepting the more conservative of these figures, we can see that the construction of the facilities brought in over 5,000 people. The next phase of development followed the completion of construction and the initiation of permanent operations. With this process the "boom population" of the construction period declined strongly until it finally leveled off at the current population of approximately 3,500.

In general we can expect this pattern to be replicated in Cold Bay. However, the smaller size of Cold Bay at the beginning of this process

poses more serious problems of adaptation for the community than were faced by Valdez (particularly in terms of social structure, discussed below). Based on this information we would expect the following changes in Cold Bay population. During the pre-construction phase, when the decision has been made to construct a facility but construction has yet to begin, the community will be subject to an influx of surveyors, architects, planners and others associated with the planning of the facility. In Valdez this resulted in over 300 people coming into the community in two years, and if this is replicated in Cold Bay we would see the population grow from 226 to approximately 550 people. Once the construction phase begins we expect an accelerated influx of people. In Valdez this resulted in approximately 5,000 additional people. If this occurred in Cold Bay population would rise to approximately 5,500 during this phase. Virtually all this growth will be a direct or indirect effect of oil-related employment. Based on research in Valdez, and on figures provided us by the MMS Office, we expect employment patterns to change as indicated in Table 20 during the construction period.

Table 20

Cold Bay Employment Patterns, Years One and Two (Construction)

Scenario Three

	Year One	Year Two
Oil Terminal Construction	940 (470)	940 (470)
LNG Terminal Construction	3200 (1600)	3200 (1600)
Support Services	196 (98)	196 (98)
U.S. Coast Guard	200 (100)	200 (100)
Government		
Federal	27	25
State	14	11
Municipal	3	6
Communications	31	25
Federal Military	16	8
Transportation	34	40
Service	18	18
Other	<u>12</u>	<u>12</u>
Total Employed	5631	5621
Total in Cold Bay	3363	3353

Note: Figures in parentheses indicate the number of workers who will actually be in Cold Bay simultaneously, since it is assumed that workers will operate on tours of duty, with only half the total workers in the community at any one time.

During these first two years the Cold Bay economy will be stretched to its limits as the workforce is increased almost twenty-fold. The totals in Table 20 are for those workers who will actually be in Cold Bay at any time. The figures in parentheses indicate the number of workers who will be present on the assumption that there will be a rotation of half the work force at regular periods. Thus, there is a large difference between the total employment and the actual population impact on Cold Bay.

The effect of this construction period on population can be estimated by making three assumptions provided by the MMS Office. First, we assume that if the site is located in Cold Bay itself or immediately adjacent to the community the workers will live in the community of Cold Bay. Second, we assume that approximately fifty percent of all workers have families, and that the average size of those families will be 2.5 people. We also assume that there will be a modest population increase during the year preceding the beginning of construction, as was the case in Valdez. If we denote the baseline population of Cold Bay as year -1, the population during the year preceding construction as year 0 (that year during which we expect the pre-construction influx to occur), and the construction years as years one and two, the population of Cold Bay should change as shown in Table 21.

Table 21

Population of Cold Bay with Refinery Located in Town

Scenario Three

Year	Population	% Change
-1	236	
0	500	112%
1	4209	742%
2	4199	-0.3%

It should be understood that these population figures are based on the assumption provided by the MMS Office that the construction period will employ people on a rotation basis. That is, the number of people working at the site during any particular week will be half the total number of people employed on the job. These people will then rotate out for a

set period of time, perhaps two weeks, while the other half of the employee population comes to town to work their rotation.

We must note that the experiences of Valdez and Prudhoe Bay indicate that this assumption may be unjustified. Prudhoe Bay and Valdez are, in a sense, limiting cases in oil-related development. In the case of Prudhoe Bay the site was totally isolated, there were essentially no communities in the immediate vicinity with which the workers at the site interacted, and the site itself was an economic enclave. The result was that virtually all those who were off rotation left the site for Fairbanks or Anchorage every week or two weeks. On the other hand Valdez was already a major city (particularly for Alaska) when development occurred, and had immediate and rapid access to Anchorage, local recreational and sport pursuits, and so on. The result in Valdez was that the majority of workers off rotation remained in the community itself.

Cold Bay is in most ways intermediate to those two sites. While not as isolated as Prudhoe Bay it does not offer the recreational and sporting opportunities offered by Valdez. At least initially it will not offer the nightlife or social life offered by Valdez at a comparable time in its history. We therefore feel it is more realistic to assume that a major proportion, perhaps as many as fifty percent, of those working in Cold Bay will actually remain in town during their off time. This means that it would be prudent, throughout this report, to add about fifty percent to the total population figures and, by extension, to the demand expected to be placed on housing, utilities, and so on. We will utilize figures throughout this report based on MMS assumptions, but feel it is important to note the unique position which Cold Bay holds vis-a-vis Prudhoe Bay and Valdez.

This pattern of rapid population increase will last only one or two years. After construction is completed the population will fall precipitously as the labor force contracts to the operational level. In Valdez this resulted in a drop from an official figure of 6,512, and unofficial estimates of 10 to 12 thousand, to a final, fairly stable, post-construction population of about 3,500. Once this operational population was reached modest growth once again began, and today the community of Valdez is holding steady or declining only slightly.

Based on these facts and assumptions, we expect much the same to occur in Cold Bay. However, there will be some differences in the experiences of the two communities. First, Cold Bay will have an LNG plant as well as an oil terminal. This will increase direct oil-related employment considerably over that of Valdez. At the same time, however, Cold Bay will not have the amount of "base employment" (used here to denote that employment essentially unrelated to oil development) in such fields as support services, tourism, and so on. As a result the fact that Cold Bay will have an LNG refinery will not actually push total employment beyond that achieved in Valdez. We project operational employment in Cold Bay to be as follows for the third through fifth years (that is, for the first three years of the operational period - see Table 22).

Table 22

Cold Bay Employment: Operational Period

Scenario Three

Year	Three	Four	Five
Sector			
Oil Terminal	100 (50)	150 (75)	200 (100)
LNG Terminal	200 (100)	300 (150)	400 (200)
Support Services	50 (25)	75 (37)	100 (50)
Coast Guard	50 (25)	50 (25)	50 (25)
Induced Employment	18	25	32
Base Employment	144	162	168
Total Employment	362	474	575

Again, the figures in parentheses in Table 22 indicate the number of employees who will actually be in Cold Bay at any one time. This figure is one half of the total number of employees as we assume they will continue, during the operational period, the pattern of half on, half off.

Base Employment refers to those positions already located in Cold Bay. Under this scenario it is assumed that the retrenchment moves of the FAA and RCA will be slowed by the increased activity related to development of the oil and LNG refinery. However, we do assume that the cutback of federal military will proceed apace. This cutback will be completed by 1985 and will provoke a temporary drop in "base employment". However, this employment will gradually rise thereafter.

With the assumptions we noted above concerning the ratio between number of employees and total population, we project the population of Cold Bay to change as shown in Table 23 during the first three years of the operational period.

Table 23

Population of Cold Bay During Operational Period

Scenario Three

Year	Population	% Change
3	624	-86%
4	795	+27%
5	951	+22%

Note: These figures are based on the assumption that all workers not "on rotation" will in fact leave Cold Bay until their rotation comes. As we noted, it is our feeling that this will not occur, and that as many as fifty percent of those who are not working at any time will probably remain in Cold Bay itself. If this is the case, fifty percent should be added to the population figures.

Following construction of the facility population will once again contract, and the smaller size initially of Cold Bay leads us to project a smaller final population. Cold Bay will also have less development of several areas which are relatively highly developed in Valdez. Tourism, for example, employs a number of people in Valdez, but Cold Bay will not be as popular a tourist location as Valdez because it lacks both the natural scenic terrain and the direct road link to Anchorage which Valdez possesses. For these reasons we expect the final post-boom population of Cold Bay to level off at between 1,000 and 1,200 people by 2000.

The economic impact of oil development will be most severely felt at the level of the cash economy. Currently Cold Bay is dominated by three sectors: government, communications, and transportation. Plans currently being pursued by several government agencies, particularly the FAA and the military, and private corporations, notably RCA, will reduce the Cold Bay labor force by a third and drastically reduce the contribution of the government and communications sectors to the Cold Bay economy as a whole.

With the introduction of a major oil and gas facility the economy will rapidly come to be dominated by workers in those industries rather than the ones which have traditionally represented the bulk of the labor force. Workers at the oil and gas facilities will overwhelm those in

other sectors of the economy. We project that there will be, at the height of construction, a total of almost 5,000 people either directly or indirectly related to the development of a terminal or refinery. The current population of the community is only 226. We expect that very few, if any, local individuals will be hired for this construction work as all those currently in the community are already working for major agencies or outside corporations. There are no unemployed workers in Cold Bay. There will, however, be a need for an expansion of some of the traditional sectors of Cold Bay employment as well.

With oil development and the attendant population influx Cold Bay will solidify its position as the transportation hub of the Peninsula/Aleutians region. With the demands for the movement of material and personnel resulting from both the construction and ongoing operation of such a facility the Cold Bay Airport will be subject to increased levels of activity. This could well have an effect on the current plans of the Federal Aviation Administration to cut back its Cold Bay labor force radically. This process will also serve to solidify the centrality of Cold Bay in the region from the perspective of communications, even though direct communications-related employment will drop, as increasing amounts of information will have to be funneled through the community.

The influx of outside workers will also put pressure on the local support and service sector. Currently this is a relatively undeveloped aspect of the Cold Bay economy given the small population and their direct access to outside markets through the Cold Bay Airport, government commissary mail order privileges, and so on. The support sector is virtually limited to the Flying Tigers complex which contains the only restaurant, store, hotel and bar in the community. These facilities are far too limited to support the population anticipated with oil development.

An important factor here is that the twenty-five year lease of the Flying Tigers for the provision of most local services lapses in two years (1985). This means the field will soon be open for the entrance of other outside providers of such services. We anticipate that outside companies will begin moving into the area rapidly if it becomes clear that oil development will occur. We also anticipate that Flying Tigers, which appears currently to be on the verge of allowing its lease to lapse because of the moribund economy, will in fact remain in town if oil-related development becomes imminent. Overall these changes will result in an increase in the number of people employed in the support/service sector from the current 18 to a high of approximately 116 during the construction phase, ultimately leveling off at about 68 at the end of the first five years.

Even if Flying Tigers does remain in town, then, there will be a need for major expansion in support industries. At least one major general purpose store, offering food, clothing, dry goods, and other related goods, will be needed, and several will probably be established. The same is true of restaurant facilities. If the oil or gas facility is located in or directly adjacent to town several restaurants will be needed to serve those not directly employed by the principal contractor and/or off-shift employees of the project. It is clear there will also be a call for several more bars and social venues in general. We expect

that this expansion in support and service sectors will result primarily from the introduction of Anchorage-based companies supplying construction equipment, office supplies, and so on. This was the experience in Valdez where new business permits more than doubled from 65 in 1974 to 135 in 1975, many of which represented outside firms catering to construction, recreational, and other needs of the large construction contingent. We also project that at least one temporary or semi-permanent banking facility will be opened in Cold Bay to accommodate the increased financial and money management services needed by the greatly increased population.

We also expect Flying Tigers to open additional enterprises, including a movie house and perhaps a bowling alley. Currently these are two businesses which are included in Flying Tigers' exclusive lease, and they have contemplated opening such facilities in the past. We also project expansion of the current facilities, including the hotel, store, bar, and restaurant. The fact that the infrastructure for most of these facilities already exists, and that implementation would involve only expansion of many currently operating enterprises, means that they are in the best position of any company to pursue such plans. We expect they would take advantage of their position to get a "head start" on other companies which might be eager to move into the City, even in the absence of an exclusive lease.

Table 24 (see next page) illustrates projected changes in the employment structure of Cold Bay over a six year period, beginning the year before construction (year 0) and ending with the third year of operations (year 5).

These figures indicate the radical shift in importance of sectors of the Cold Bay economy which will occur with the development of oil facilities in the community. Total employment will mushroom by over 1500% during the construction period, then drop back to double pre-construction levels before rising again to triple those levels within two years of the beginning of operations. This shift in the importance of sectors will be particularly noticeable in the change from a government- to a private sector-dominated economy. This shift is even more clear if we characterize the table in percentage of total work force terms. This is done in Table 25 (see second page following).

Table 24

Employees by Sector, Years 0 Through 5, Cold Bay

Scenario Three

Year	0	1	2	3	4	5
Sector						
Government						
Federal Civilian	27	25	24	24	24	24
Federal Military	16	8	0	0	0	0
State	14	11	11	11	11	11
Municipal	1	3	6	8	12	12
Communications	31	25	22	22	22	22
Transportation	34	40	40	40	40	40
Service/Support	18	116	116	43	55	68
Oil Terminal	0	470	470	50	75	100
LNG Refinery	0	1600	1600	100	150	200
Other (Including Induced Employment)	12	12	12	30	37	44
Totals	152	2310	2301	328	426	521

Table 25

Sectors as Proportion of Total Employees, Years 0 to 5, Cold Bay**Scenario Three**

Year	0	1	2	3	4	5
Sector						
Government (Total)	38.1%	2.0	1.7	13.1	12.4	10.3
Federal Civilian	17.8	1.1	1.0	7.3	5.6	4.6
Federal Military	10.5	0.3	0.0	0.0	0.0	0.0
State	9.1	0.5	0.5	3.3	2.7	2.2
Municipal	0.7	0.1	0.2	2.5	4.1	3.5
Communications	20.3	1.1	1.0	6.8	5.1	4.1
Transportation	22.2	1.7	1.7	12.2	9.3	7.6
Service/Support	11.7	5.0	5.0	13.1	12.8	13.0
Oil Refinery	0.0	20.4	20.4	15.2	17.4	19.0
LNG Refinery	0.0	69.4	69.5	30.5	34.8	38.0
Other (Including Induced Employment)	7.9	0.5	0.5	9.2	8.6	8.6
Totals	100.0	100.0	100.0	100.0	100.0	100.0

It is clear that the fundamental change precipitated as a result of the development of an oil terminal and LNG refinery in Cold Bay itself will be a shift from the dominance of the government sector to dominance by the private sector. This will be the first time in the history of Cold Bay that government has not played a dominant role in the local economy. Our projections envision government employment declining from a high of about 38.1% of total employment at present to as low as 1.7% of all employment during the second year of construction. Government employ-

ment will then rise proportionally to 10.3% of total employment at the end of the third year of operations. Thus, government employment will drop from three out of every eight employees to one out of every ten.

At the same time that government employment is dropping, major increases will be experienced particularly among refinery workers and, to a lesser extent, among service and support workers. Refinery and terminal workers will go from zero to a high of almost 90% in the second year of construction (69.4% LNG workers and 20.4% oil terminal workers). Following construction the proportion of the workforce represented by terminal and refinery workers will drop to a total of 57% of all employment (38% LNG workers and 19% oil workers). At the same time service/support workers will grow as a proportion of total workers from 11.7% at present to 13% at the end of the third year of operations.

3.4.4.3 Unemployment Patterns: Non-Labor Force

We have noted many times the unusual nature of Cold Bay as a full employment town. The fact that all the workers in Cold Bay are transients and are hired outside of town means that it is virtually impossible to remain in the community without a job. This is insured by the fact that there is simply no housing available unless one works for one of the major companies in town.

We expect this pattern to continue, given certain caveats. The most important element for the Cold Bay municipal government to consider is the manner in which hiring is done for the construction, in particular, of the oil-related facilities. As we have noted elsewhere, the experience in Valdez was that those who came to the community hoping to get a job during the construction phase of the development turned out to be the most troublesome group from the standpoint of public disorder and petty crime. These people wait in the community without a job and become involved in petty crime, disorderly behavior, public drunkenness, and so on. It would be a wise strategy for the City to insist that all hiring be done in Anchorage, and to likewise insist that this is publicized widely. This would eliminate the possibility of the development in the community of a class of unemployed people who would be tempted to involve themselves in quasi-legal or illegal activities.

3.4.4.4 Economic Class Distinctions

Cold Bay is currently a community with a notable absence of economic class distinctions. Most of the people in the community earn roughly the same amount of money, and there are few items on which one can spend money to distinguish himself from his neighbors. This has resulted from the fact that most of the people in town are employed as middle level white collar workers or skilled blue collar workers by major outside corporations. However, this pattern will change if major oil development comes to the community.

In scenario two we noted that economic class distinctions would begin to emerge in Cold Bay if a facility was developed in the region. This process will occur more rapidly if the facility is constructed in Cold

Bay itself. In this instance, as we have seen, the increase in population will be much greater than if the facility was only in the region. This will result in a larger group of managers and managerial class personnel, as well as a larger group of laborers. The income differences between these two groups will be too large not to have behavioral consequences. Those earning substantially larger incomes than the bulk of the oil facility laborers will form social groups, partake of the same social networks, and so on.

The current residents of Cold Bay will be implicated in these distinctions to a certain extent as well. This is particularly true of a small group of residents who will be able to take advantage of the high levels of activity to establish lucrative business ventures. This group of managers, successful local businessmen, and others who are able to earn substantial incomes will find themselves increasingly aloof from the class of laborers and blue collar workers.

3.4.4.5 Housing, Utilities, and Real Estate

The rapid expansion of the economic base of the community will cause three major infrastructural problems which have to be confronted if such development is to proceed. These problems revolve around the provision of adequate housing and lodging, both in quantity and quality, adequate utilities, and adequate private and municipal land.

Housing will be a critical problem. This was certainly the case in Valdez, and will be moreso in Cold Bay for two reasons. First, the only hotel space available is in the Flying Tigers complex, and this consists of approximately twenty-two rooms, able to accommodate, at most, forty-four people. Second, there is absolutely no housing space available in the community. Cold Bay housing is almost completely company- or agency-owned. One must work for a company and be assigned to Cold Bay in order to find housing. During the summer of 1982 there was only one home in the entire community which was unoccupied which was being held by the National Weather Service for the possibility of an additional employee. With the exception of the limited space available in the Flying Tigers Hotel, and the bunkhouse space available for visiting company representatives, there is no housing available for the visitor in Cold Bay.

Housing construction, then, will be a major activity during the first phases of development. The housing will be basically designed to accommodate two groups: the United States Coast Guard, which will operate a station out of Cold Bay in the event of oil-related development, and direct and support service employees of the oil industry itself. Coast Guard housing will take the form of twenty-four family units in fourplexes (a total of six buildings), one single family dwelling unit, and 12 apartment units housing two enlisted men each. This housing will be incorporated into the USCG navigation facility built near the site of the terminal.

Housing for the workers at the terminal, refinery, and for related support personnel will be the responsibility of the oil companies. This housing will probably consist of two types, one for single workers and

one for workers with families. Non-family housing will consist of three ten unit apartment buildings with two workers per unit and one bunk-house, with common dining, for twenty-five people. The housing for families will provisionally consist of ten duplexes, five single family units, and five sixplexes.

This influx of population and rapid construction of living units will be a disruptive process for the current residents of the community, and should be a component of community planning well in advance of the actual construction (we will speak more of this below when we discuss the political implications of such development). Another critical aspect of housing construction concerns the availability of land on which to build. Currently there is a dearth of land available for local purchase. However, if the city is successful, as it appears it will be, in gaining land for private purchase or municipal use this construction phase could work to the benefit of the community as the city or private individuals either lease or sell land to those corporations needing housing for their employees.

The construction of both housing and the facilities themselves will present the city with the opportunity to realize substantial revenue from several sources. We have already noted the possibility of the sale or leasing of land. Another area likely to be affected is taxation. If it appears that major construction will occur, the city will be under considerable pressure to levy a property tax from which it would realize substantial income. It is also possible the city might opt to levy a sales tax of three percent to which it has a right as a second class city under the laws of the State of Alaska.

Profound changes will occur in the tax base of Cold Bay and these must be anticipated well in advance. Increased assessed values and tax incomes will mean a change from the current approximately \$25,000 annual budget to spendable revenue of potentially several million dollars. This will have a marked impact on the community. The fact that Cold Bay has been a city for just one year and that the city government has had only one year's experience in managing a community will have a major effect on how change is managed. Valdez had been a city for several decades prior to development, and had evolved rather smooth and efficient techniques of handling government funding, community development, and so on. Cold Bay has just become a city and the understandable lack of experience, combined with the variety of economic and political changes which will occur virtually overnight if oil development occurs, must be carefully considered by those responsible for operation of municipal government.

Taxation measures will result not only because they promise substantial income to the city, but because the city will be forced to make large outlays of funds in order bring up to standard and expand the current infrastructure of the community. The concern here is twofold, and will require adroit handling by the municipal government if the transition is to be effected without major problems. The first aspect requires that the city accept responsibility for the operation of the major utilities, particularly the water and sewage systems, and for maintenance of city streets and related facilities. Currently the city does not have responsibility for any of these three areas, but is under pressure from

the agencies (the FAA and the state DOT) which operate them to assume that responsibility. However, if oil-related development comes to the area the problem will be compounded. Not only will the city have to accept operational responsibility, it will also be forced into immediately expanding those facilities to accommodate the huge increase in population attendant on development.

3.4.4.6 Economic Lessons of Valdez

The experience of Valdez illustrates some of the economic difficulties which the City will face in these processes. There it was found that state support was either lacking or slow in being applied. The basic problem was that the state refused to commit state monies for such needs as utilities expansion or school expansion until impact was actually occurring at the local level. This means that Cold Bay will be confronted with the responsibility of planning and initially implementing such changes before the state will "come on board." For the City of Valdez this presented several problems of financing and planning. For Cold Bay, much smaller and with far fewer sources of revenue initially, these problems may prove to be insurmountable if they are not planned for long in advance of the actual need for construction and expansion.

From our research in Valdez one point should be emphasized. It is more important to consider the ill effects of the precipitous post-boom economic decline than of the brief spurt of rapid growth associated with the construction phase of development. The boom will last just long enough for people to become accustomed to the pace, the earnings, and levels of city revenue associated with development before these very visible forces are abruptly withdrawn. Planning, as suggested by the experience of Valdez, should focus more on long term consequences rather than on short term benefits. Too much community construction, expenditure, and improvement will ultimately prove worse than too little. Overcapitalization and bonding the city to too large a debt in order to accommodate the temporary "boom" population would result in unacceptably high levels of indebtedness with lowered revenues following the construction period itself.

In keeping with this observation it is imperative that post-development population and requirements for services be anticipated and planned for and that any additional temporary housing, sewage, power, transportation or other facilities required incidental to construction of the facility be properly assigned to the contracting firms. Attempts to provide permanent housing, facilities, and so on, based on the population of the community during the boom period would commit the city to a disastrously high long-term rate of expenditure. Long term service requirements, on the other hand, for the operation phase of the facility should be met by the city and come under its auspices.

3.4.3.6 Feedback

In sum, the economic problems posed by major development of an oil or gas facility in Cold Bay revolve around three major elements. First, there will be a great deal of pressure on an already overburdened infra-

structure, and the expansion and updating of those systems, especially the sewer and water systems, will be of major concern. Other aspects of the infrastructure, such as the telephone system, the power supply, and so on, will also face necessary expansion. Second, the expansion in housing will have to be explosive if it is to accommodate the influx of construction personnel, and it must consist of a proper mix of permanent and temporary housing. Closely connected with this is the problem of gaining access to adequate amounts of private land. Third, the expansion of support services will also have to be a major concern.

The effects of these processes on the structure of Cold Bay will be far reaching. Cold Bay will find itself transformed from a community depending almost exclusively on primary employment (in, for example, transportation and communications) to one much more evenly balanced among primary, secondary, and tertiary economic sectors. This focus on Cold Bay will also stimulate a local entrepreneurial sector, something which been stunted so far. Finally, the community will become more complex from the standpoint of economic classes with the introduction of a large blue collar group and a smaller white collar group.

3.5.4 Social Cohesion

The social effects of a major oil and gas facility in Cold Bay will also be important. However, they will also be mitigated by certain factors which make Cold Bay unique among Alaska Peninsula and Aleutian communities. In the following section we will discuss the structure of social networks, including kin behavior, non-kin behavior (including neighborhood and associational relations), and intraregional, interregional and interstate networks.

The social effects of large scale development in Cold Bay will be less disruptive than would be the case in many other communities. The members of Cold Bay society are virtually all outsiders, non-Native and non-permanent. Cold Bay residents are generally remarkably positive toward oil-related development in the area. This should prove to be an advantage to the companies which propose to construct and operate an oil facility in the community for several reasons. First, the community is made up of people accustomed to dealing with large bureaucratic organizations and who in general are accustomed to the lifestyle represented by such corporations. Second, the lack of a Native population and the resultant lack of a Native corporation surely make the community more attractive to outside developers than most others in the region. Outside agencies need deal with only a single municipal entity, the City Council, and do not run the risk of having to deal with both a council and a local corporation. Problems of ethnicity and ethnic relations will be minimal. Finally, the transient nature of the Cold Bay population will serve to minimize the perceived threat represented by outside corporations, since most of those resident in the town are not permanent residents and do not see the long term future of the community as a major concern.

There is, however, one group which is attached to the community and deeply concerned about the future course of local development. This is the small cadre of permanent residents. This group stands to lose the

most from a social perspective if the town is the site of a major oil-related facility. Though only a small minority of the total population, they are the only group truly committed to Cold Bay. They would be even more completely submerged under an influx of the magnitude envisioned here. The social effects of this would in all probability be seen as disastrous by the permanent residents. Most of these people are residents of Cold Bay because of the perceived advantages of small size, relative isolation while still maintaining direct contact with Anchorage (through the airport in particular), and recreational and sport hunting and fishing potentials of the area. It is likely that the incursion of a large number of people over a short period of time will lead to a strong reaction on the part of this group, and some may leave the community for good.

3.4.5.1 Kin Behavior

As noted in the first scenario, Cold Bay is unusual in its lack of a kinship network. There are no two families in Cold Bay which are currently linked either consanguineally or affinally. This has operated to reduce the sense of community and has meant that the major social links of the individuals in Cold Bay are to people outside the community rather than within it. We project that oil-related development in the community itself will leave this situation unchanged in the short term. However, in the long term we expect that the sheer number of people involved in the operation of the terminal will inevitably result in the formation of some rudimentary kinship networks. However, these networks will be among people who are not genuinely permanent residents of the community. The workers at the terminal and refinery will be on tours of duty, and will in all probability never settle permanently in Cold Bay. Even if they stay in the community for several years, at retirement they will by and large leave Cold Bay and take up residence somewhere else where they have stronger social networks than in Cold Bay.

3.4.5.2 Non-Kin Behavior

The effects of a large number of people arriving in the town on social networks in general will be to further instrumentalize those relations and to introduce much stronger social divisions than now exist. The Cold Bay population is, by and large, not composed of permanent residents, so social networks are relatively tenuous and outer-directed. That is, since most are from outside the community and do not expect to stay permanently in the town, they maintain their strongest social links with those they knew before arriving in Cold Bay, and these are invariably people outside the community, often outside the state. The result is an extremely instrumental social network within the community. The movement of a large number of people into the community, most of whom will also be transient, during the construction phase will therefore cause a further instrumentalization of social relations, and a further decline in the sense of community.

The effects of a rapid growth in population on social stratification would also be significant. Those companies coming into the community during the construction phase of implementation will bring in relatively

short term transients who will be housed primarily in barracks-like housing. Although the site for the facility is uncertain, if it is near the town itself the companies working on the construction phase will probably house their employees together in these structures. This will promote a social structure based on proximity determined by occupation, thereby encouraging the persistence of the current basis of social structure in Cold Bay. That is, occupation will play a major role in the determination of social networks since most people will be living in housing with, or immediately adjacent to, others who work for the same company. As most of these people will be in town for only a year or two at most, it is likely that their primary social networks will be with those with whom they both work and live.

Once the construction phase is over, however, the possibility exists for a major change in the nature of Cold Bay social networks. When the facility begins operation on a permanent basis there will be a need for a managerial core consisting of relatively well-paid professionals. At the same time there will be the development, over the construction period, of a number of smaller local businesses and businesses which arrive from outside to serve as support and service sources for the facility and the people working there. Those earning high incomes as members of the managerial class will probably be housed in single unit homes or duplexes, and will be physically separated from the blue collar group which will live in apartments or dormitories. Income will become a major determinant of residence and will therefore become a factor in social networks.

Currently there are few distinctions among Cold Bay residents which can be related to income levels or occupational position. That is, there is little sense of social stratification or income disparity. However, with the advent of a professional class of managers for the facility and other businesses which initiate operations, as well as prosperous local entrepreneurs, an incipient social class distinction will be introduced into the community for the first time. At present this is not a factor since no one has a local business of any magnitude and the major outside companies and government agencies operating in town employ primarily middle level, white collar workers and skilled, blue collar workers, with few major distinctions in income levels. However, with the introduction of such income distinctions, and attendant occupational position distinctions, it is likely that housing and neighborhood distinctions may also be introduced. We anticipate that a certain section or sections of the community will become identified as "upper class" while other sections of town will become more inextricably associated with a laboring class.

The introduction of a laboring class will be relatively novel for Cold Bay. Currently the vast majority of the workers in Cold Bay are white collar or clerical workers, and there are very few laborers per se. However, with major oil or gas facilities a large number of laborers will be introduced into the community. It is likely that this group will tend to associate with one another to a much greater extent than with others in the community. We can expect to see these distinctions, most notably between a blue collar class and a white collar class, extend into areas other than housing. For example, it will be inevitable that several more restaurants and/or bars will be opened in the

community in the event of large scale development. Equally inevitable will be a process in which one or more of these social venues comes to be associated primarily with the managerial and white collar group, while another, or several others, come to be associated with the blue collar group.

This combination of occupationally defined neighborhoods and income defined social groups will result in an unusual social system in Cold Bay. Social networks will be horizontally defined. That is, one's major social contacts will continue to be with one's workmates, since occupation will continue to define residence. However, the introduction of income disparities will result in a social structure which is defined vertically. That is, both within and between occupational groups there will be a vertical division defined by income which will result in managers, for example, associating primarily with one another and in places similar to those frequented by upper level personnel in other companies or agencies in town.

One group which is likely to take little part in these emergent social networks is the permanent residents. With a large influx of temporary population during the construction period, and an influx of transient workers during the operational period, the permanent residents may become even more isolated than is currently the case. They will perceive those coming into the community to work at the refinery or in associated positions as sojourners. The permanent residents are committed to the community on a long-term basis, and they see most others in the community as temporary residents. Yet they are so outnumbered already that they tend to be less involved in community affairs and social networks than would otherwise be expected. The explosive growth of Cold Bay from a few hundred to five thousand or more and, ultimately, to over a thousand people will result in this group being even more outnumbered than at present.

These social effects will proceed at different rates. During the first phase of construction the town will inevitably come to resemble a "boom town" with a large population of laborers who have few or no ties to the community itself. In the long run most of these people will leave the community and will not be a source of permanent population. The long term population will be made up of skilled blue collar workers and a managerial class. However, even this group will probably not be permanent residents. Again, the effects on the sense of community will be deleterious, particularly as the traditional permanent population becomes even more outnumbered by short- and long-term transients.

Finally, a major social change will probably occur in terms of community-wide organizations and voluntary organizations. With the influx of population the varied interests of the inhabitants will lead to the formation of a number of clubs as well as some service organizations. Currently there are few of these in Cold Bay, and those which exist operate intermittently, vital for one or several years, then moribund until someone new takes an interest in reviving the organization. The Parent Teacher's Association will act with renewed vitality as the size of the school population increases. The voluntary fire department will increase in size and step up its activities. Some form of service organization, such as Kiwanis or Rotary, will in all probability be

formed as well. There will also be an increase in the number of special interest organizations, such as gun and rod clubs (the original is now inactive), softball teams and perhaps a softball league (spurred especially by terminal and refinery workers), and so on. While it is difficult to project exactly which clubs, organizations, or service groups will emerge, it is clear that such voluntary organizations will become an increasingly important element in Cold Bay social structure.

3.4.5.3 Intraregional, Interregional, and Interstate Networks

Relationships between Cold Bay residents and residents of other communities or regions will also be affected by major oil-related development. At present Cold Bay is linked interregionally most intensely with Anchorage. However, probably the majority of Cold Bay's residents have their primary social ties to areas outside the state itself, in the lower forty-eight. This is a result of the national and international scope of the agencies and companies for which most residents work. Intraregional ties are primarily instrumental, as Cold Bay serves as a focus of the shipment of goods and materials throughout the peninsula/insular region. Permanent residents, a small minority currently in Cold Bay, also have strong intraregional networks as a result of having lived in the region for many years. With oil-related development, however, the relative importance of all these kinds of social ties will shift dramatically.

The major shift will involve the relative importance of interstate and interregional ties. Where currently interstate ties are probably the strongest of all social ties, the development of an oil terminal will alter the direction of these ties. This is due to historical events. Since Valdez developed an oil terminal in the seventies, many of the residents of that area have expertise in both the construction and operation of such facilities. These people are therefore preadapted to implement the Cold Bay facility. Many of those who worked on the Valdez projects now reside in the Greater Anchorage area. We project that one result of the development of such a facility in Cold Bay will be more intense and frequent relations with the Anchorage and Valdez areas. A good proportion of the workers will be from that region, and visits and vacations will be spent in that area by many of the workers in Cold Bay.

Intraregional networks, on the other hand, will suffer as a result of the construction and operation of the terminal. This is because there are few people in the region of which Cold Bay is a part who are qualified to work either during the construction or operational phase. The bulk of workers who are qualified will come from the Anchorage or Fairbanks area. Interstate networks will also suffer, at least as a proportion of social relations. In the case of Valdez many of the workers came from outside the state since there was a paucity of qualified workers in Alaska itself. However, one result of the Valdez experience was the creation of a pool of Alaskan workers who were qualified and had experience in working on terminal construction and operation. This means that the Alaskan labor pool from which Cold Bay will be able to draw is considerably more experienced and larger than that which was available to Valdez. Thus, fewer workers will have to be recruited (at considerable expense) from the "lower forty-eight" than was the case in

Valdez, and social networks connecting the community to the rest of the country will be correspondingly less important in Cold Bay.

3.4.5.4 Feedback

The structure of social networks will undergo radical changes, with social class distinctions making their appearance in the community for the first time. Kinship will remain unimportant, but income will join occupation and neighborhood as important social markers. The community will become socially more a part of Alaska than it has been in the past as the relative importance of interregional ties increases at the expense of interstate ties.

Despite the growth in population and the introduction of social class differences, many of the fundamental aspects of Cold Bay social structure will remain intact. Some tendencies already evident in the Cold Bay system will be magnified and intensified. Cold Bay will become even more transient, it will be even more under the influence of major outside corporations. This means, at least in the short run, the continued defeat of a sense of community, and continued difficulties for the permanent residents and those others committed to Cold Bay as a home.

By the 1990s, however, the development of a major facility in Cold Bay may begin to encourage a sense of community and the formation of a social group which consists of permanent residents committed to and concerned about Cold Bay. When the community gains some land, and when local entrepreneurs are able to profit from the activities of the oil-related companies it is possible that the core of a larger permanent population might emerge. This would lead, by the end of the forecast period, to a genuine social group of permanent residents who would operate in an essentially insulated social network apart from the larger population of transients passing through the community.

3.4.6 Political Effects

Among the most drastic effects of the construction and operation of a major oil or gas facility in Cold Bay will be changes in the political structure of the community. It is in this area that the city must be particularly alert, in that political control is the key to the successful resolution of most other problems, particularly economic and social disruption. In this section we will discuss the effects of large scale development on political structure, the steps which seem necessary if the city is to maintain effective control over the events occurring in the community, and the nature and changes in mechanisms of social control which can be expected.

3.4.6.1 Administration: Municipal Government

The current political structure of the community consists of a recently formed City Council, as well as several informal mechanisms of political power. The members of City Council are elected by the voters of the

community, including some non-residents who maintain voting rights. Importantly, none of the City Council positions are salaried, and all are essentially part-time, volunteer positions. Those who serve as councilmen, including the mayor, all hold outside jobs on which they depend for their livelihood.

The growth of the municipal government, particularly given its relatively recent implementation and rudimentary form, will be one of the most difficult political processes in the community. This bureaucratic structure is very recent and relatively small scale, and its expansion will occur at the same time as rapid population growth attendant on construction, making the period potentially even more disruptive than in Valdez which had a strong and experienced pre-existent political structure. With the growth of the community, and the inevitably greater demand on time and resources which operation of the city will require, the daily operation of the city will have to be turned over to professionals. This means that the city council will take a much less direct hand in the running of the city, as they all have full time jobs to which they must attend. The most direct approach would be to appoint a city manager who could then establish the outlines of city administration. Individuals will have to be appointed or elected to official city positions, such as zoning and planning commissions, public safety commissions, utilities and public service agencies, and so on. We expect that total municipal employment will grow from the present single clerk to about a dozen employees by the end of the projection period. Ultimately the community will have to decide whether to incorporate as a first class city as population growth continues, and this would entail an even larger bureaucratic apparatus.

Each of these bureaucracies will emerge within only a few months with leaders/directors selected from local residents and others hired from outside. This will cause major changes in the community. The management of the city will be beyond the capacities of current residents alone. Municipal government will become the purview of a cadre of professionals, many of them from outside the community. A city manager, if hired, will assume a very powerful role in the community. Other outsiders will have to be hired to oversee the police and fire departments, staff will be hired from outside and virtually all new positions for what will become one of the major employers in the community, city government, will be drawn from non-local sources. This is even more likely in Cold Bay than it was in Valdez in that everyone currently located in the community is employed by a major outside firm or agency and few will be willing, or able, to take full-time municipal positions or positions with outside contractors during the construction period. This will have a disequilibrating effect on both political and social relations.

3.4.6.2 Major Political Issues

This transfer of responsibility for municipal government from current residents of Cold Bay to relative newcomers poses some serious threats to the future of the community. The major political pitfall which could affect the community concerns the possibility of a loss of power on the part of those currently in that position and the subsequent commitment

of the city to unreasonable and unsustainable levels of capital expenditure. This could happen in any of several ways.

3.4.6.2.1 Political Lessons of Valdez

When a large number of people begin to arrive in the community they will be eligible to vote from the time they arrive. It is conceivable, then, that within a relatively short time this group could exercise control over the political structure of the community. Cold Bay, less than a quarter the size of Valdez at a comparable time in its history, could be much more rapidly and easily overwhelmed by a major influx of outsiders. Some of the experiences of Valdez can be of value in guiding the decisions to be made in Cold Bay.

The primary pitfall is the possibility that the large population present during the construction phase of the development may dominate the city politically and commit it to large bond issues or other forms of borrowing as the fastest way to achieve improvements and construction which they view as necessary. Such issues could probably be supported during the high income construction period, and this was the experience of Valdez. However, once the construction period is over and most of the temporary population has left, revenue will drop off drastically, and the municipality may find itself in serious financial difficulty as it is unable to continue to meet its obligations. This is coming to be the situation in Valdez with respect to some major capital projects.

This will inevitably lead to political conflict at the local level. If these events are not anticipated it could well lead to great difficulties for the city once the construction phase is over. Research in Valdez showed that there are several possible strategies which could be used to minimize these adverse influences. One strategy would be to lengthen city council terms of office. This would insure that those now representing the community would be able to continue to represent the town through the entire length of the construction period. It is this period which is most dangerous from the perspective of possible overextension of municipal capital outlays. If the city council term was extended from its current three years to perhaps four or five years, this would serve as a buffer against outside control. Nonetheless, the key is a clear and explicit understanding with the city manager, prior to his hiring, of the desires of the citizens of Cold Bay.

Another strategy would be the creation, early in the development period, of a permanent fund. This was done in Valdez to provide funds for contingencies not anticipated in the early construction period but which might arise at a later date. This fund could be created during the construction period when revenues are high and would provide a cushion for the post-construction period when revenues will fall off substantially. This would help mitigate the deleterious effects of a switch in control from current residents to outside professionals, as the city will be committed to a course of action before that professional group comes into control.

The idea of a permanent fund brings us to taxation. This will be a major political issue in the community, particularly if the town becomes

the site of a major oil or gas facility. Though there is currently strong sentiment against enactment of either a sales or property tax, we project that such taxes will inevitably be instituted in the event of major local development. Politically, however, this must be handled carefully and with the full understanding of the populace. It is preferable for such taxes to be in place prior to the construction period itself in order that the city can realize as much revenue as possible. However, in the process the municipal government must make it clear to the residents that these taxes are designed to generate revenue primarily from the businesses and agencies coming into town, and not from the townspeople themselves. It is possible for the city, through various mechanisms, to actually return most of the revenues collected from local residents in the form of water or sewage subsidies, or similar strategies, thus removing the burden of taxation from them. The vast majority of such revenues will accrue not from local residents, but from the major corporations which have facilities with very high assessed values. A similar strategy has been tried with success in Valdez. At the same time the community will have to decide whether to incorporate as a first class city as its population gets large enough. This would result in both the availability of additional sources of revenue and in additional responsibilities for the municipality at the local level, and will be a political question of considerable controversy.

A final area of importance concerns zoning. The city must plan in advance for oil-related development or those changes will overwhelm it. At the current stage of development of the organization of Cold Bay several preliminary objectives must be set. First, the extent of the city's control over land must be established. If actual title to land cannot be obtained (a process in which the city is currently involved) it is essential that some official "claim" be placed on the appropriate development areas so that future efforts to annex or tax a parcel of land have sufficient historical basis. It is at this stage, and not later when adequate time is not available to make a detailed evaluation, that the siting of potential facilities must be made. Should the terminal or LNG plant be sited adjacent to, near, or as remote as possible from the community? What areas are most appropriate for residential or commercial use? Many of these questions will have to be answered through the establishment of zoning restrictions.

Zoning restrictions, according to long-term residents of Valdez, should be formulated so that support facilities as well as actual operation facilities are sited to promote the efficient distribution of service functions. Traffic movement, recreational areas (bars, restaurants, movies, and so on) should be sited to maximize esthetic and functional objectives. The use of tight conditional use permits which stipulate appropriate types of use in detail is one way of achieving this. The use of variances and spot zoning should be carefully evaluated with a view to the future; appropriate limitations and stipulations should be provided accordingly.

It is, however, the case that several structural conditions already exist which will make long-term consistency difficult to achieve. First, land has already been zoned in a particular way in earlier land disposals (particularly the 1979 sale by the Department of Natural Resources) which tends to fix the character of development on those

parcels. This zoning may conflict with the most beneficial use of that land from later community perspectives. Second, the pressure to change zoning of areas already zoned commercial, utility, or residential will increase just as the apparent utility of those stipulations declines. That is, once development picks up momentum it will seem to many that it is occurring in some random fashion and that careful maintenance of zoning restrictions is of little value anyway.

3.4.6.3 Levels of Conflict

The development of a major facility in Cold Bay will inevitably lead to potential political conflict at several levels. The increased revenues associated with such development, the business possibilities, and so on will result in the expression of many cross purposes simultaneously in the community. We have already noted the potential problems in the introduction of an outside professional group in the city administration. The city council, through judicious evaluation of candidates, can prevent or at the least minimize such conflict.

Another potential area of conflict which should be carefully considered by the city government concerns land. Approximately one-third of the land in the Cold Bay city limits is held by the King Cove Native Corporation which will probably be eager to realize a profit from any oil-related development. The Corporation has already considered the possibility of construction of an LNG plant on its land, and if such a refinery appears imminent they may well attempt to convince them to site on their land. This is a potential source of political conflict between the Cold Bay municipal government and the King Cove Native Corporation. It would be preferable for both Cold Bay and King Cove to discuss the possible strategies for dealing with oil-related development well in advance of the fact. If this is not done it is possible that the companies coming into the area may be able to play the corporation off against the municipal government in search of a more lucrative arrangement. This could rebound to the detriment of both corporation and municipal government.

It is important to realize that the small size of Cold Bay, vis-a-vis Valdez at a corresponding period in its history, puts Cold Bay at much greater "risk" than was the case in Valdez. That is, there is no question but that the workers at the terminal and refinery in Cold Bay would constitute well over an absolute majority of the Cold Bay population. This will be true not only during the construction phase, but as well during the operational phase. This has not been the case in Valdez. This group is oriented naturally to the present and the immediate future, and is likely to be willing to overcommit the City in pursuit of short term goals. These factors should be considered well in advance of their occurrence.

External political relations will also be altered under this development scenario. Cold Bay will come to assume a much more important place at the state level than is currently the case. At present the region of which Cold Bay is a part is politically dominated by Unalaska and Naknek. Regional and local Native Corporations have been politically active and have taken much of the attention of state legislators in the

past ten years. However, with the development of a major terminal and refinery in Cold Bay, and the massive increase in revenues to both locals and the state itself, the community will have a much larger voice in regional affairs than has been the case until now. This increased visibility will have both positive and negative consequences.

On the positive side is the likelihood that Cold Bay will have greater access to both funds and political power at the state level. However, the negative aspect has to do with increased regional political conflicts and the increased attractiveness of Cold Bay to outsiders as a result of the development of the terminal. With greater political clout at the regional and state level the community may come into conflict with other major cities, such as Unalaska. With increased attractiveness the city may experience renewed speculative purchase of land if such sales are not carefully planned. Such interest will certainly increase if it becomes clear that a major oil-related facility is planned for the community. The holdings of the King Cove Native Corporation will also spark renewed interest. The aims of the corporation and of the Cold Bay municipal government may not coincide and this could lead to political conflict between the two organizations unless other steps are taken, as we noted above.

3.4.6.4 Measures of Efficiency

The growth of Cold Bay from a small town to a city of over a thousand people will result in changes in the satisfaction levels of some residents, and, if not managed properly, could lead to increased levels of community debt.

The major group which will see an erosion of its satisfaction with life in Cold Bay is the permanent residents, or those who would like to become permanent residents. The influx of hundreds, initially thousands, of people, and the construction of a large facility in the community itself, will leave these people convinced that Cold Bay is becoming too large and too industrial. Most of this small group of people lives in Cold Bay because of the relative isolation and the recreational possibilities. Much of the allure of the community is the lack of large numbers of people and the absence of any hint of urbanism. If this changes markedly this group will react most strongly. For most others what is seen as a deterioration of the quality of life by the permanent residents will be only, at most, a temporary inconvenience as they will leave at any rate within a few years at most.

Levels of community debt, as noted several times already, must be carefully planned and monitored. Indices and trends of the construction period should not be used to determine appropriate levels of expenditure or capacities of infrastructural systems. The early and full cooperation of state, federal, and private agencies and companies, including particularly the oil companies themselves, should be negotiated and assured.

3.4.6.5 Social Control

Means of social control will also change if major development comes to Cold Bay. Currently there is no established law enforcement agency in the community, and the security officer of the Department of Transportation serves as the unofficial law enforcement officer. Most social control is informal, consisting of gossip, censure, and so on. With an explosive growth in the population this informal arrangement will not suffice. It will be necessary to implement a small police force, consisting of professional law enforcement officers under salary to the city. This need will be felt particularly acutely during the construction period when the community is inundated with thousands of construction and associated workers. The problems of public drunkenness, assault, petty theft, and so on will increase dramatically and will call for an official response from the city. A formal police department will be inevitable.

One possibly difficult aspect of social control which will be important for Cold Bay to consider is a lesson learned by Valdez during the construction period. During the hiring phase, which lasted intermittently throughout the construction period, most of the hiring was done in Valdez itself. In conversations with individuals who were in Valdez at that time it was suggested that hiring should have been done in Anchorage, rather than at the site. This would alleviate a major part of the social costs and problems of social control which Valdez ultimately incurred. The out-of-work job applicants are the most difficult group of individuals to control and are among the most apparent in the community. They come to Valdez or Cold Bay in search of work and often without a means of supporting themselves in the interim. They are not at the construction site itself since they are not employed there and thus are very visible elements in the community. They are the most likely to be involved in drug use and distribution, prostitution, or other petty crime in the community. If the fact of this external hiring is made very clear and widely publicized, and if the companies refuse to hire at the site itself, the number of unattached individuals affecting Cold Bay can be kept to a minimum. This is even more important in Cold Bay as, unlike Valdez, it is a community predicated on full employment even before such a project is begun. Thus, there are simply no facilities, such as housing, available for a non-laborforce population.

3.4.6.6 Feedback

The Cold Bay political system will mature in the next two decades. The period from the present until 1990, given oil-related development in the community, will be a time of political expansion, development of the apparatus of municipal government and administration (including possible incorporation as a first class city), and expansion in revenues and spending. The time following 1990 will be a period of consolidation. It is crucial that the city government plan judiciously to avoid overextension of the Ci If they are successful the 1990s should see Cold Bay with sufficient funds, a modernized infrastructure system, improved access to private land, and an efficient city administration.

3.4.7 Religious Activity

3.4.7.1 Belief System and Levels of Participation

As with all other aspects of social and economic life, religious activity will undergo expansion in the community. At present the community is not heavily involved in religious activity, a result of both small size and the extensive outside links of the residents.

If the population grows significantly the small interdenominational chapel which now serves the community will be insufficient for the increased demand for religious services and activity. However, the corps of construction workers are not commonly an intensely religious group, so expansion will not have to be as great as might be expected. We project that an expansion of the currently rather small facility will occur and we also expect some explicitly denominational religious organizations to attempt to organize congregations in Cold Bay. Once the size of the community begins to grow beyond the capacity of the single chapel to accommodate its religious needs, it is inevitable that other religious organizations should attempt to establish followings in the community.

However, as in other areas affected by the rapid growth in population, it would be prudent for the religious authorities to expand cautiously, realizing that the greatly increased demand during the construction period will be only temporary, and that ultimately demand will level off considerably above the pre-construction period but substantially less than during the height of construction.

3.4.7.2 Feedback

The period from the present to the year 2000 will see a significant expansion in Cold Bay religious activity. However, this will proceed in two distinct stages. During the construction period the majority of people in the community will not be attached to Cold Bay and will be unlikely to become religiously involved in the community. However, following the construction period many refinery and terminal personnel will settle in Cold Bay as long term transients and at this time there should be a fairly rapid expansion in religious activity. Many of these employees will have families, and the length of their stay in the community will mean they will bring their families with them. This will lead to an increase in religious activity.

Over the longer term, during the 1990s, there will be a perceptible growth in the permanent population of the community, and this will also contribute to an increase in religious activity. Several distinct denominations will appear in the community, and it is likely that the currently interdenominational chapel will become associated with one particular denomination itself.

3.4.8 Education

3.4.8.1 Participaton Rates and Facilities

Education is also an area which will be heavily impacted as a result of the construction and operation of a major facility in Cold Bay. Currently the Cold Bay school has a capacity of approximately 50 children, and this will be inadequate for the future needs of the community assuming major development.

Again, it is the construction phase which will cause the most stress in terms of meeting demand for educational facilities. If the population of the community grows to over 5,000 as we have projected, the number of children of school age will also increase rapidly. While it is difficult to be certain how great this increase will be several factors have to be taken into consideration.

First, construction workers often spend time in relatively remote locations of Alaska without their families. Since they will be in the locale for only a year or so it proves to be too disruptive to relocate their families for such a short period of time, particularly if there are children of school age since they would have to acclimate themselves to another school and location, meet and make new friends, and, in general, interrupt their education with possibly negative consequences. Therefore, we should not expect the school age population of Cold Bay to rise at the same rate as the overall population during this first phase.

However, this caveat must be tempered to a certain extent for historical reasons. Cold Bay's development will follow that of Valdez by approximately ten years. One result of the Valdez experience has been the creation of a pool of construction workers with experience working in Alaskan conditions, but many of whom have found they are out of work, or working less, since the completion of construction on the pipeline and in Valdez itself. This has created a ready labor pool which would be available for the construction phase in Cold Bay. Many of these workers have married and begun families in the time since construction at Valdez, with the result that the construction labor force in Cold Bay will be somewhat older and consist more of married and family men, and women, than was the case in Valdez. This would lead us to expect proportionately more children in Cold Bay than was the case in Valdez. However, this factor is balanced by another which should be considered. Valdez was relatively close to, and in direct road link with Anchorage, from which many of the workers came. This meant that it was easier for an individual to bring his family to Valdez than will be the case for Cold Bay which is linked to Anchorage only by air.

For these reasons we expect Cold Bay to experience approximately the same proportional increase in demand on educational facilities as experienced in Valdez. Currently Valdez has a high school with approximately 200 students serving a population of over 3,000. By way of comparison, the Unalaska School, which serves a permanent population of between 1,200 and 1,500, has approximately 160 students (in grades K through 12, inclusive). We expect Cold Bay demand for school facilities to rise to as much as 250 during the construction phase, then drop back to approximately 150 to 200 following the beginning of permanent operation of the

facility.

The reason we do not project the school age population in the post construction period to fall as fast as total population has to do with the composition of the construction and post construction groups. Those coming into the community following construction, that is during the operational phase, will be longer term residents than the construction workers. They will therefore be more likely to bring their families with them, including, of course, their school age children. Therefore the drop in the number of school children following construction will be considerably less proportionally than the overall drop in population.

This growth will clearly demand a completely new school facility. Again, Cold Bay must take care not to expand these facilities too much or they will find that they have an unwieldy and expensive facility too large for post-construction demand. Expansion of the present facility to a capacity of approximately 200 students should suffice for the long term needs of the community. During the construction phase it would be preferable to utilize temporary facilities for any enrollment above 200 students.

3.4.8.2 Feedback

Cold Bay's school system will be asked to accommodate a greatly increased student population over the next two decades. There will be a need for temporary facilities during the construction period and permanent facilities during the operational period. The school will continue to offer an essentially college preparatory curriculum, and the students will continue to be, for this region, unusually motivated to do well in school and to go on with their education beyond the secondary level. This will be a result of the fact that they will still be the children of transients with experience outside the community and region and they will continue to lack the disincentives of other children in the region, particularly in the form of the option of commercial fishing.

3.4.9 Health Care

3.4.9.1 Services and Facilities

Cold Bay has only recently succeeded in having a health clinic constructed in the town. This clinic would be ample for future care of Cold Bay residents if there was no or only modest expansion of the population. However, with the large population increases expected if a major facility is constructed in the community health care facilities will have to be expanded.

The construction phase will once again be the most critical period for health care. Both the number of people and the risks of accidental injury involved in construction work in general will demand a major expansion of health facilities. It would be preferable for the community to insist that the companies which are involved in the construction of the facility provide medical care for their workers. This will

probably be the case in any event. If this understanding is reached it may be possible for the community to, following the construction phase of the project, take over operation of whatever medical facilities are established by those companies. In this way the community could both meet the demand for health services during the construction phase and accommodate the somewhat lower demand which should be experienced by the more "permanent" population which will make up the community following the construction phase when the facility begins permanent operation.

3.4.9.2 Feedback

Ultimately we expect Cold Bay to replace or expand its current health care facility into a larger clinic with a doctor resident full time. For a community with a permanent population of a thousand or more this would seem to be a necessity. It should be possible for the municipal government to gain a good deal of the financing for such a facility from the construction and oil companies themselves. This means that we can look for Cold Bay to finally have full medical services, with a medical doctor permanently resident in the community.

3.4.10 Recreation

We have already discussed visiting and vacation patterns of Cold Bay residents in the section on social cohesion above. We will not repeat that material here, but will concentrate on outdoor activities, such as subsistence, sport hunting and fishing, and the use of recreational vehicles and electronic products.

3.4.10.1 Levels and Types of Activity

Recreational activities will be an area of significant pressure in the case of Cold Bay, assuming major oil or gas related development in the community. The areas of stress can be divided into perceptions of crowding on the part of residents and pressure on the recreational resources themselves.

Cold Bay is situated in an area which has multiple recreational possibilities, most of which are, as yet, relatively underdeveloped. We have discussed the patterns of visiting and vacations in the section on social cohesion, so will concentrate here on hunting, fishing and other activities not covered earlier. The area is rich in big game, including caribou and brown bear. It is located in an area in which several major salmon runs occur, notably reds, pinks, and silvers, which afford the opportunity for excellent sport and subsistence fishing. The community is also adjacent to the Izembek National Wildlife Refuge which boasts a multitude of game birds among its transient and permanent populations. All of these resources offer good opportunities for sport and subsistence hunting and fishing.

At present none of these resources is overexploited. The population of just over 200 people is unusual in that they are not heavily involved in the subsistence utilization of these resources, unlike most of the

Native villages in the region. This means that the level of exploitation of the resources is even lower than expected, even given the small size of the community. However, if the population grows substantially by the amount we have projected here this situation will likely change radically.

The most urgent consideration of Fish and Game officials in Cold Bay in the event of growth of the community revolves around utilization of the Izembek National Wildlife Refuge. This is an area currently utilized by Cold Bay residents primarily for bird hunting. However, a large population will put increased pressure on this resource. The major concern is not so much with the resource itself, that is the bird population, which is large enough to absorb a greatly increased demand, but with the land in which the birds congregate. Izembek has few roads, and these are in a purposely primitive condition in order to minimize impact of the land and ecology of the refuge. Fish and Wildlife officials express concern that greatly increased use of the area will result in serious damage to the terrain, and by extension to the wildlife which depends on the area for its survival.

The result of this increased demand on Izembek may be, according to local Fish and Wildlife officials, restriction of entry to Izembek by permit. This will be necessary simply to insure that the refuge is not seriously harmed by large numbers of users. This will undoubtedly result in some upset on the part of current Cold Bay residents. These people are accustomed to being able to exploit the local resources at their leisure, and indeed this is one of the few things which is consistently noted as a positive aspect of living in Cold Bay. Restricted access to Izembek's game bird population would significantly reduce the attractiveness of Cold Bay to many of these people.

3.4.10.2 Feedback

The possibility of the introduction of such policies as a permit system for entry to Izembek could have a more fundamental psychological effect. The feeling would be widespread among those now living in Cold Bay that the area was becoming unnecessarily crowded. Even though population density would remain very low overall, the inauguration of restrictive entry policies of any sort would likely make people feel the pressure of too many people. For many of the residents of Cold Bay this would be unacceptable, as they accepted an assignment to Cold Bay in the first place in an attempt to leave behind the crowded conditions of the city. Such developments might well reduce the attractiveness of the community to those who now find it pleasant.

METHODS, STANDARDS AND ASSUMPTIONS

Introduction

The objective of this study is to develop ethnographic information on historical, contemporary and forecasted economic growth, cultural and social change, and community development in Cold Bay related to potential OCS development in the area. Based on this ethnographic information, projections of social, economic, cultural, and institutional ramifications of specified levels and forms of potential OCS development will be made. We are therefore interested in two separate activities in this preliminary volume: description and projection. The methods, standards and assumptions described herein pertain to these two activities and the proposed manner of their integration.

From an ethnographic standpoint, description can take one of two perspectives. The first, and most often employed, is to describe the events in a specific community and the relationships among these events from the perspective of the investigator. This perspective, referred to as an etic point of view, entails interpretation of customs and behavior in a specific culture as seen by observers or "outsiders". The alternative perspective is that of the community members themselves. This is known as an emic perspective and involves the interpretation of customs and behavior as seen by the participants or insiders of a specific culture.

Sociocultural projections which aim for validity and quantification often rely almost exclusively on the etic perspective. Given the aim of reliability (that is verification of observations and conclusions by other observers), this is quite understandable. However, observer reliability often masks a lack of validity of projections for the members of the communities under study, with the result that local residents can neither understand nor conform to such projections. An emic perspective compensates for the deficiencies of an etic perspective, but in doing so creates new problems. Projections often become characterized by other investigators or policymakers as intuitive in nature and ideographic in content.

Realizing the necessity for both perspectives in the twin objectives of description and projection, we therefore propose to apply two distinct models in the ethnographic study of Cold Bay, Alaska. For the etic perspective we will rely on systems analysis which is well suited for both tasks of description and projection. For the emic perspective, we will employ a variant of the decisionmaking models commonly used in anthropological fieldwork which outlines perceived options, values, and patterns of decisionmaking among community residents.

In addition to presenting the methods to be employed in the ethnographic studies of both communities, this appendix also summarizes the major standards and assumptions guiding our investigation. We define standards as those ethnographic findings established prior to the current investigation. These include matters of undisputed ethnographic fact which have been verified by other sources. Assumptions refer to conditions and relations postulated to exist by reason of extension, logic, and theory, including aspects of ethnographic description unverified by other sources and postulated trends derived from social and cultural theory and related studies in similar contexts.

Systems Analysis

General Concepts

Systems Analysis is an analytical tool which originated in engineering and the natural sciences.

Systems theory is an intellectual tool for studying the relation between the structure of a system and its functioning. More precisely, this theory provides a set of rules by which the function of a system can be associated with a known structure and by which the states of a system as well as its outputs can be associated with the inputs (Cortes, Przeworski and Sprague 1974:5).

It provides a language and a perspective which enables the investigator to understand the interrelations among a unified set of components, whether that set be a biological organism, an information processor, a mechanical device, or a social group. Systems analysis has become a major tool for management in both business and government.

Systems analysis is not to be applied in its entirety in ethnographic studies and projections. Much of the terminology is inappropriate for the desired level of analysis and much of it is derived from the study of "closed systems" (i.e., models where all variables are controlled for and in which interaction occurs within a limited set of parameters). Social groups, on the other hand, are viewed as "open systems" which implies interaction between the unified set of components or individuals and other, independent, variables. Our explication of the model will therefore concern only those aspects of direct relevance to the study of Cold Bay.

"Social system" is a phrase frequently employed in sociocultural studies and projections, but often with unclear meaning or intent. Frequently such definitions leave a good deal of latitude in what is being described or analyzed. A case in point is the definition provided by Parsons:

Reduced to its simplest possible terms, a social system consists in a plurality of individual actors interacting with each other in a situation which has at least a physical or environmental aspect, actors who are motivated in terms of a

tendency to the 'optimization of gratification' and whose relation to their situations, including each other, is defined and mediated in terms of a system of culturally structured and shared symbols (1951:5-6).

Definitions such as these leave too much room for interpretation and variation on the part of different observers. What is needed are precise categories and concepts which are easily understood. Given the possibility for substantial variation in both description and analysis, therefore, some effort should be devoted at the outset to explaining exactly what is meant by a social system.

Although the definition of any of the terms employed by social and behavioral scientists may particularly emphasize the theoretical bias of the investigator, the numerous definitions of social system all share some underlying features. First is the notion of the interrelationships of parts to form the whole. This notion, made explicit for social contexts by Durkheim (1899), underlies all definitions of social system. Second, social systems are usually conceived as interacting with phenomena located outside the social group, whether it be other social groups, ideas, or simply the local ecology, and these "relevant" aspects of the "outside world" are also part of the system. Third, individuals in particular social systems are usually motivated to interact with one another. Usually, this motivation is characterized as the desire to pursue pleasure and avoid pain in ways that enhance their capacity for survival. Fourth, individuals in social systems are provided with certain guidelines which enable them to behave in particular ways with expected consequences. These guidelines, usually characterized as a system of values or norms and embodied in a set of symbols, comprise the culture of the social group.

Real and Abstract Levels of Social Systems

Social systems, in whatever form they assume, must be understood to exist at two different levels. The first is that of the real community; the living, breathing, human beings who constitute that community. Some of these individuals may be more successful at pursuing pleasure and avoiding pain; some more committed to adhering to cultural norms and values than others, but all are members of the same social system. For the purpose of description, an understanding of the social system begins at this level. For purposes of analysis, however, distinctions and generalizations become important and the individuals in the community become abstract categories, often referred to as "actors." The second level, therefore, is an abstract one constructed by the systems model to aid in understanding what transpires at the first level. An understanding of both levels is important, for although a major portion of forecast analysis will examine data at the abstract level, it must always be remembered that we are dealing with real entities populated by living humans.

Components of Social Systems

In a systems framework, a social system consists of more than the sum of a group of individuals residing in a particular community. It also includes the environment with which they interact and their behavior which constitutes a response to that environment. The social system therefore consists of three interrelated components: input, structure, and output. The relationship among the three components is illustrated in the following model.

Figure 1.
Model of a Social System

Input	Structure	Output
ecological a. climate b. terrain c. natural resources	values	
extrasocietal a. government b. commerce c. larger socio-cultural system	organization a. economic b. social networks c. political d. religion e. education f. health care	response a. activities b. feedback i. organization ii. values-structure
intrsocietal a. facilities b. population (demography) c. other subsystems		

Input consists of a series of independent variables which originate outside the system and constitute what is known as the environment. As not everything outside the community has relevance for social behavior, only those variables which have an effect on community life comprise the environment. There are three major types of environmental input in social systems: ecological, extrasocietal, and intrasocietal. Ecological input consists of such variables as climatic conditions, availability of natural resources, local flora and fauna, and geographical boundaries and limitations. Extrasocietal variables include the presence and influence of external government agencies such as federal and state agencies and regional corporations, outside business interests involved in local economic activities, and transportation and communication networks with other communities. The larger sociocultural system, of which the community is a part, is also a source of extrasocietal input. Usually this takes the form of values, innovations, commodities, and technology imported from other areas of the region, state, or country. Thus, a community such as Unalaska is affected by federal, state and regional agencies and policies, outside commercial interests such as Japanese processors and buyers, and urban values, customs, and commodities originating in Anchorage, other parts of Alaska, and the United States as a whole.

In addition to the types of input from the environment, it is important to remember that any of these variables can operate within the system in one of two ways. First, they may serve as a set of demands or pressures to which the community must respond. A natural disaster, crop failures, depletion of subsistence resources, increased tax rates, or the removal of local factories to other communities by a multinational corporation are examples of external variables acting as demands or pressures on a community. In all these cases, the input creates a strain on existing structures to which the community must adapt. Second, independent variables from the environment may serve as a set of resources or supports. Federal grants or state loans, outside control of land, and outside employment opportunities are examples of external variables which provide resources or supports for the community.

The second major component of the social system is the structure. In using the term, structure, within the context of the social system, we follow the lead of Firth:

In studying a field of social relations, whether we are using the notions of society, of culture, or of community, we can distinguish their structure, their function, and their organization. These are separable but related processes. All are necessary for the full consideration of social process. Briefly, by the structural aspect of social relations we mean the principles on which their form depends; by the functional aspect we mean the way in which they serve given ends; by the organizational aspect we mean the directional activity which maintains their form and serves their ends (1963:28).

Of particular concern to us is the distinction between social structure and social organization. According to Firth, "the more one thinks of the structure of a society in abstract terms, as of group relations or of ideal patterns, the more necessary it is to think separately of social organization in terms of concrete activity. Generally, the idea of organization is that of people getting things done by planned action" (1963:35-36).

In our application of the systems model, structure has two subcomponents: values, or norms, and organization, or behavior. Values or norms provide guidelines to behavior; they define not only the goals of social interaction but the means to obtaining those goals. In essence, they constitute a set of rules (Bailey 1969:10) about how one behaves. These rules include normative injunctions (how one should behave in a particular circumstance) as well as pragmatic advice (how one must actually behave if he or she is to obtain a culturally defined goal). These values or norms are arranged in a hierarchical fashion with some values more important than others. Thus, in a particular community, family responsibility may be more important than independence, or cooperation may be more highly valued than competition, depending upon the arrangement of these values in a hierarchy.

This value hierarchy, in turn, serves as a set of constraints on the second subcomponent of structure, social behavior, allowing for its

regularity and expectability in the form of social organization. Organization refers to the observed patterns of behavior. These patterns are based on both the structure of the rules which act as constraints to behavior, and the function or purpose the behavior is designed to accomplish. Thus, the act of reciprocity serves to maintain social solidarity, promote family obligations, and maintain egalitarianism while redistribution can promote the accumulation of wealth, social stratification, and competition. More will be said about structure in our consideration of subsystems.

The third major component of a social system is the output. This represents the response of the community to the perceived environmental input. This response can be deliberate and planned or it may be accidental. It may be direct or indirect. Oftentimes the response is an adaptation to changes in the environment, to make the best of existing circumstances. Not all output is productive however. Increases in the rates of morbidity and mortality, crime, and levels of conflict can all be potentially disruptive to the community. There are two major types of system output or response. The first type consists of activities represented by social indices such as population growth rates, income levels, crime statistics, morbidity and mortality rates, and marriage and divorce rates and the levels of conflict within a community. The second form of response is labelled "feedback." Whether the response is to change for the better or to suffer, it is bound to have an impact on the rest of the system. If enough members of a community, for instance, spend greater amounts of time and energy participating in a commercial activity, and less time and effort on subsistence activities, the structure of the local economy will accordingly be altered making a cash economy a permanent feature of the structure of the local system. Feedback measures the extent to which the systemic response influences the structure of the system as well as the input from the environment.

Relationships Among Components

It is possible to use the analogy of types of variables to characterize the relationships among environment or input, structure, and response or output. The variables originating from the environment are usually characterized as being independent in nature. In an open system, these variables are difficult to control for and are subject to unpredicted changes. The response or output of the system can be likened to a set of dependent variables. The variation in this response constitutes the focus of our study. The structure of a community's social system is comparable to a set of intervening variables. How a particular input generates a specific response from a community depends upon its structure, the combination of value hierarchy and organized behavior. Thus the same set of environmental pressures or resources may produce two different responses from communities, or ethnic groups within a single community, with different structures.

One of the major limits of this analogy, however, lies with the concept of feedback. If a community's response to a certain set of environmental inputs has an impact on the structure of the community's social system, and perhaps even on the environment itself, then the distinction

between dependent and independent variables becomes complex. What is a dependent variable in one context may be an independent variable in another. Relationships of causality are not linear and the systems model takes this into account when examining all three components of the system.

One of the advantages of the systems model, moreover, is its ability to tie together concepts of structure, function, and process in the same set of relationships. The model does not give undue emphasis to any one of these aspects of social systems to the detriment of the others and regards all three as equally important in understanding both existing social relations as well as projecting the course of these relations in the future.

Subsystems

While it is easy to conceptualize a specific community (or social groups within a community) as a social system, for the purposes of analysis, it is perhaps convenient to approach the community from a more discrete level. As noted above, systems consist of a set of interrelated parts. Each of these parts serves a specific purpose or function which collectively maintain the system. In a social system, these parts may be viewed as subsystems. Any collectivity of individuals organizes its behavior for the performance of specific tasks. That behavior labeled economic usually involves the tasks of production, distribution, and consumption of material goods and subsistence items. Political behavior is concerned with the allocation of scarce values and the distribution of power. Religious behavior is concerned with the belief in the supernatural as a means of explanation and expression of social solidarity. Kinship is concerned with the organization of individuals into groups, defined consanguineally or affinally, for the purpose of controlling resources through descent, inheritance, or succession and making alliances through marriage.

Each of these units of behavior, therefore, can be viewed within the context of subsystems and analyzed from the perspective of the components of input, structure, and output. For the ethnographic study of Cold Bay, eight specific subsystems have been selected for examination. The economic subsystem includes that part of the community's social system which is concerned with the production and distribution of commodities or subsistence goods. This subsystem can be further divided into commercial and subsistence sectors. The commercial sector is further divided into harvesting and processing sectors, entrepreneurial activity, alternative forms of employment, market relations and patterns of distribution.

The second subsystem is that of social networks. In any social group distinctions among members and the identification of networks of social interaction are based on identifiable criteria. Kinship, for instance, comprises a set of rules organizing individuals in social networks. The quantity and quality of kin relations may serve to differentiate members of a social group, creating boundaries between segments of the group itself. Ethnicity, friendship, neighborhood, place of work and length

of residence can also be used as a basis for the formation of distinct networks of social relations. These networks often assume the forms of voluntary associations. Kin and non-kin relations can also serve to link two or more communities or ethnic groups.

The political subsystem is the third major unit of analysis. It includes those aspects and elements of community life concerned with the authoritative allocation of scarce values, distribution of power, and regulation of competition. Local government activities, including local leaders, organizations and decisionmaking processes, mechanisms of social control and external relations are included in this subsystem.

Religion constitutes the fourth major subsystem. It involves those aspects of the community related to belief in the supernatural, providing a sense of order and meaning to otherwise inexplicable events. The integration and cohesiveness of society is another of the major functional consequences of religious activity and belief. Included in this subsystem are such variables as number of participants, facilities, and personnel.

The fifth major subsystem to be examined is education. The major functions of this subsystem are socialization and enculturation. Educational curricula, grade levels and test scores, teaching personnel, school facilities and their location, funding, and prospects for advancement are all part of this subsystem.

Health Care is the sixth major subsystem to be examined. It comprises all of those aspects of the community's social system designed to prevent illness and disease and promote health and well-being. It includes medical facilities and personnel, health care practices, costs of health care, and the array of expected forms of mortality and morbidity.

Social Services is the seventh subsystem examined. While not possessing the same degree of significance in all social systems as the first six subsystems, social services nevertheless play an important role in the structure and organization of rural communities. Included in this subsystem are facilities for and personnel for the provision of counselling, referral and assistance in helping members of the social system, whether city residents or members of a specific ethnic group, deal with certain social and psychological problems such as alcohol abuse, domestic violence and mental illness.

Recreation is the final subsystem examined. Recreational activities and their organization within a community depend on several factors, including values, resources and social networks. Within rural Alaskan communities, the recreation subsystem includes subsistence activities, home entertainment, visiting and vacations, and community events.

Each of these subsystems will be examined using a systems format. An analysis of the economic subsystem will include those variables from the environment which act as input for economic activities. The values regulating the organized behavior in the commercial and subsistence sectors and the behavior itself constitute the structure, and the levels of

income and productivity will serve as the output or response of the community. Such an analysis will enable us to determine which specific aspects of the environment affect particular aspects of the subsystem under investigation as well as see how each of the subsystems are inter-related, serving in turn as inputs to each other.

Social Change

At its most abstract level, one can say that societies are motivated in their behavior by the desire to survive. Social systems are more or less constructed with that goal in mind. If that goal is either facilitated or threatened by changes in the environment, then individuals change their behavior and the social structure undergoes revision. Whether the environment is in a state of flux or is relatively constant, individuals within social systems are motivated to change their behavior for certain positive or negative reasons. A positive motivation for change is the desire to improve the quality of life (to pursue pleasure). A negative motivation for change is the desire to minimize certain forms of psychosocial and physiological stress and strain (to avoid pain). Actually, both positive inducements as well as negative avoidances generate certain types of stress to which a community must respond. Not all members will want to respond, nor are all members capable of responding. Innovators, for instance, are usually characterized as members of a community who are able to recombine existing ideas into new ideas, usually under circumstances of ecological stress (Bee 1974:180). They possess both the capability and the motivation to change their behavior which ultimately leads to changes in the social system.

A social system can be characterized as existing in a state of equilibrium or a state of change. Under a state of equilibrium, one of two possibilities may exist. Either the input, structure, and output all remain constant or the environment may change but the structure is insulated from it. An example of this second possibility is the isolation of Japan from changes in the larger world during the Tokugawa period. Under a state of change, one of two possibilities may also occur. A change in the input occurs which creates stress on the community's social system. If the community's response does not adequately meet its needs under these new circumstances, the organized behavior may undergo some revision. A new pattern of organization may emerge, even though the value hierarchy providing the guidelines or rules for behavior remains relatively intact. This is known as adaptive change. If the stress is so severe that a major modification of patterns of behavior is demanded, then the values which regulate those patterns may also undergo revision and a new value hierarchy emerges. This scenario is viewed as one of radical change.

Whether the change is adaptive or radical, it is usually seen as originating in the environmental component of the system (Bailey 1969:190). The impetus to change, however, stems not only from the environment, but also from the structure itself. Easton explains that "regardless of the degree of structural differentiation and specialization, no system is endowed with so many channels that it has an infinite capacity to carry

demands" (1965:121). Likewise, Bailey hypothesizes the possibility that new resources may become available and the value hierarchy or norms may not give sufficient guidance for their use (1969:190). In either case, a community cannot foresee all of the potential changes in the environment and develop guidelines and forms of organized behavior to meet and adapt to all contingencies. The more the environment changes, the harder it is for the system to be adaptive.

The extent to which environmental input provides an incentive for change can be observed in the systems output, the community's response to environmental demands or supports. This response, as noted above, can take the form of various social indices such as population size, crime rates, morbidity and mortality rates, or income levels. It can also take the form of conflict between values and between social groups adhering to different sets of values. According to Bailey, the greater the conflict between normative and pragmatic rules, the greater the potential for change in the value hierarchy, the condition for radical change (1969). Changes in the structure—the value system--, therefore, are the third form of response in which systems change may be observed. Our analysis includes all three forms of response when projecting changes for the community of Cold Bay.

Limits of Systems Analysis in Projecting Social Change

Systems analysis, while essentially an etic model, is perceived to be of significant value in accomplishing the tasks of ethnographic description and projection of social change. However, there are also limitations to applying this particular model which should be noted at the outset. First, systems analysis, although perfectly suited for conceptualizing social relations and the patterns of interaction among components of a social system, was initially designed for quantitative applications. According to Cortes, Przeworski, and Sprague (1974), ideally, the social system can be reduced to a series of mathematical operations, and the structure explicated in a series of algebraic equations. This process, however, requires considerable quantitative data. For our study, quantitative data are accessible only through secondary sources and their limited scope prohibits their use in a systems format. We are therefore faced with the problem of employing qualitative data in a model designed originally for quantitative use. While this does not impair the display and analysis of interrelationships among the major components and subsystems of the social system, it does not possess the degree of sophistication and accuracy it would with statistical data. It will also mean that the assigning of weights to the variables to control for the different forces of change and their consequences is only a rough approximation, albeit a better approximation than can be obtained by employing other models of change.

A second major limitation of the model is one which plagues all forms of sociocultural projections. In a controlled experiment or closed system, it is possible to control the independent variables to achieve verifiability, that is to repeat the analysis and achieve the same results. However, this is rarely the case in human societies. It is virtually impossible to predict which changes will occur in the environment, even

for a relatively short period of time. Given the complexity of modern society and the rapid rate of social and cultural change, it is extremely difficult to control for all possible changes which may affect the social systems of the two communities. We are therefore forced to rely on existing trends or changes we know will occur within the projection period and attempt to leave as many alternatives open as possible. Although we will not be able to predict the course of change, the model is well suited to making projections based on existing information.

Third, as has been noted above, the systems model is essentially an etic model and reflects the perspective, biases and interests of the investigator. While this perspective may approximate the study objectives of the Minerals Management Service, it may diverge radically from the perspective, biases and interests of the communities under investigation. In other words, unless the investigator can take into account his own culturally constituted set of theoretical and methodological limitations, he can never hope to understand the present patterns of social relations or make projections concerning future changes in the social, cultural, economic, and institutional life of the communities. In order to secure this understanding and make these projections with any confidence, an insider's perspective is necessary. This perspective is sought through the use of an emic model which outlines options and consequences of change as perceived by local community residents.

Options Model

Decisionmaking Theories

The basis for an options model is the assumption that one of the fundamental activities of individuals in any society is the making of decisions or the exercise of choice. Decisionmaking has been examined from several different perspectives and the study has begun to approach an exact science with links to information sciences, psychology, sociology, and anthropology. As has been the case with systems analysis, decision-making theories have developed a language and perspective of their own for the analysis and description of how options are perceived and choices made.

There are at least three discrete stages to the exercise of choice. The first stage involves the acquisition of information. Such a task involves use of the human senses, language, and the world view provided by a culture. The second stage is the evaluation of alternatives. This evaluation is based on past experience as well as the expectations and preferences provided by the value hierarchy or set of norms of a social system. The third stage is the exercise of choice as one of the alternatives is selected and the others are presumably excluded, if only for the moment.

Each of these tasks can be analyzed in terms of its structure or guidelines. The acquisition of information is usually constrained by both language and world view. Both act as constraints as to how the individual perceives and interprets the world (Sapir 1921, Whorf 1956). The

evaluation of alternatives is structured by the value hierarchy of the decisionmaker and presumably approximates the set of norms adhered to by the social group of which he is a member. Such a decision may be made on the basis of a good or poor understanding of the options available. As Fjellman notes:

On the basis of their own experience, people in the real world define, from cues in the environment, the situations in which they must make a choice between alternative courses of action. They may define the boundaries of the situation well or badly, and with varying degrees of explicitness. In any social setting, there may be a readily available typology for some decision situations. On the other hand, a good deal of human action flows through series of choices made without such articulable awareness. In such cases personal understanding of the decision process often takes the form of rationalization. The boundaries of the situation, and the relevant possible choices, are constructed after the fact (1976:4).

These boundaries, and the "relevant possible choices", are themselves culturally constituted, as Fjellman goes on to note:

An individual's discovery of possible future states, given present conditions, is based on knowledge from and experience in her or his cultural environment. These ultimate end states are ordered according to certain criteria. It is here that we need to speak of culturally based motives (1976:5).

The exercise of choice usually proceeds along the lines of maximization or "satisficing," a term coined by Herbert Simon to refer to a course of action chosen which is "good enough," i.e., that meets a minimal set of requirements.

People normally satisfice rather than maximize. That is, rather than trying to get the best conceivable result, even if he or she could possibly know what that might be, a decisionmaker divides the payoffs into two groups: those that would be generally satisfactory and those that are not good enough. An individual will then act so as to get one of the results in the satisfactory group rather than the best possible one (Simon 1976:301).

An options model may also be employed to examine social and cultural change. Geohegan's (1969) model of decisionmaking in the context of post-marital residence provides a precise manner of examining sociocultural change from a quantitative perspective "specifying when a change has taken place in the ideational order as well as in terms of on-the-ground frequency" (Black 1973: 561).

It is apparent that these decisionmaking models examine many of the same components of social life as the etic models. The difference, however, is one of perspective. Using these models we are able to view the social system through the eyes of the participants, or "actors." At the

same time, in conjunction with a systems model, we are able to examine the same sets of data from two different perspectives, integrating them within the framework of the subsystem as the unit of investigation.

Construction of an Options Model

The construction of this model involves the acquisition of data and the organization of these data relying on Native (or local) models of organization as well as on a few assumptions based on decisionmaking theories. It is assumed, for instance, that options will be perceived, evaluated, and acted on in a manner which displays substantial regularity among all members of the social group. These tasks will occur in accordance with a set of rules established by the constraints of world view, value hierarchy, and fundamental processes such as "satisficing".

To employ the options model, the first objective is to observe the making of decisions. This can be done in a natural setting, or under artificially constructed circumstances. In the first instance, decisions which are expressed publicly, such as those articulated in city council or Native corporation meetings, social gatherings or other public forums, are those constructed by the sociocultural context itself. In the second instance, the investigator may create hypothetical situations and ask the informant to make decisions based on existing information. This second procedure is of limited use, however, and is employed primarily for the construction of taxonomies. The first instance provides a more realistic set of data. In this context, the investigator must determine what is perceived by community members to be the most important aspects of their life and what aspects of their environment are most salient. From this initial information, community members are asked which alternatives are viewed as viable in particular situations and which are viewed as most desirable. The investigator is then able to observe social behavior to determine which alternative is selected and how the choice corresponds with the evaluation of options or alternatives.

The use of an options model, supplementing the systems analysis format, provides us with two types of data. First, by viewing individual perceptions of available options under specified parameters, baseline information on behavior and values of various groups within a social system can be derived. This aids in categorizing members of a community along different dimensions of behavior and beliefs. Second, by obtaining individual perceptions on the available options under certain scenarios such as groundfish industry or OCS development, the refining of forecast projections can be made to allow for an emic perspective, one ultimately responsible for responding to environmental change.

Finally, a word should be said about the limitations of such options or decisionmaking theories. Most of the problem here arises from confusion over normative as opposed to descriptive decisionmaking theory. Normative decisionmaking theory concerns the way people in a social system should make choices in particular situations (Fjellman 1976:6).

Descriptive decisionmaking theory concerns the ways in which people actually do choose one thing or act over another, regardless of how they choose. We will concentrate on the descriptive perspective. As Fjellman notes:

Descriptive approaches are the result of the curious anomaly that people in experimental situations, not to mention real life, often make choices that normative theory, given its particular assumptions, doesn't predict (1976:5).

COLD BAY

Standards

The standards to be employed in the study of Cold Bay consist of those ethnographic factors which have been established as reliable through previous research in the area. Predominantly these consist of ethnographic data gathered by the principal researcher, and presented in Technical Report #75, as well as information gathered by Alaska Consultants, Inc. in Technical Report #59 of the Alaska OCS Socioeconomic Studies Program sponsored by the Bureau of Land Management. These standards are divided here into population composition, sociopolitical, educational, and social indices. Our assumptions regarding Cold Bay will be limited here to minor economic parameters of future development and to OCS-formulated assumptions of projected OCS-related development. in this community.

Population

Cold Bay is an unusual community for this region of Alaska in that it is not a Native community but is largely populated by people associated with state and federal government agencies, the Air Force, or with civilian transportation or communications firms and this is reflected in the population statistics. Cold Bay has experienced wide fluctuations in population in the period since its establishment during World War II. For most of its history population has consisted primarily of transients, reflecting the importance of the community as an airlines and communications center. Population in 1970 was 256, and in 1982 had dropped to 226, an indication of the reduced importance of the community as a waystation for the movement of men and material from the United States to the Viet Nam war theater.

Cold Bay's population is overwhelmingly white (83.6%) with small numbers of Indian (2.0%), Eskimo (2.0%), and Aleut (6.2%). Males outnumber females by a ratio of more than three to one. The majority of the population is long term transient, many of whom are

employed in the military (members of the Air Force), or in related civilian capacities at the airport or in support positions. In recent years the male to female ratio has improved somewhat and the percentage of the population represented by transients has declined, though they still represent a majority of the population. Cold Bay has a smaller percentage of its population in the age groups below twenty than is characteristic of other communities in this region, another reflection of the transient nature of the inhabitants.

Economy

The economy of Cold Bay remains dominated by the operation of its airport and the Air Force Station. Employment is therefore primarily related to the transportation, communication, and governmental sectors. Cold Bay has the largest and best equipped airport in the Aleutians and serves as the stepping-off point for the entire peninsula and chain of islands to the west, as well as, to a certain extent, a refueling stop for planes flying the great circle route from the "lower forty-eight" to Southeast Asia and other points in the orient.

Most employment in the community is thus centered on the airport or the Air Force post, with the result that a disproportionately large percentage of the population is transient and does not call Cold Bay permanent home. Two thirds of the approximately forty-five men employed at the Air Force Base are civilians (employees of R.C.A.), with the remainder military. Though several attempts have been made to initiate a fish harvesting or processing industry in the community, all have failed and there is little prospect for success in this area in the near future.

As a result of the nature of employment in Cold Bay the community is unusual in that most members of the work force are employed full time year round, rather than seasonally as is the more frequent pattern for this region. In addition to airline and Air Force and related employment there is a small sector employed in restaurant, store, bar, and package complex in town.

Sociopolitical

Cold Bay, as a result of the transience of the majority of its population, is also in an unusual position sociopolitically. Most of the population is relatively "unconnected" to the area and is uninterested or unable to become politically involved in the affairs of the community or region.

Cold Bay is not an organized community in the sense to which we are accustomed for this region. Since most of the employment opportunities are filled by transients there is extremely little emphasis on kinship or kin relations as a basis of social interaction. A great many of the inhabitants are single males who have families and ties in greatly removed areas of the United States, many in the "lower forty-eight". Therefore kinship and lineage affiliations do

not form the basis for social organization as they do in other communities in the region.

The social structure of Cold Bay is essentially determined by the nature of employer-employee relations and consists of individuals with few kinship relations with one another. This is reflected in the housing statistics for the community. In 1980, according to Alaska Consultants, there were 61 occupied housing units in Cold Bay, and of these only three were owner-occupied. That is, the vast majority of housing is owned and provided by employers rather than being privately owned and occupied. Most socializing is determined by common employment rather than by kinship.

Politically Cold Bay has recently become more organized through the incorporation of the community as a second class city in 1982. There is a city council and mayor, and the municipal government is still in the process of organizing and defining its areas of interest and power. The nature of the community as dominated by transient employees has meant that community cohesion is relatively low and political interest somewhat lacking.

Nonetheless, the municipal government has moved ahead on several fronts and defined the general concerns which will occupy Cold Bay politically for the next decade. These concerns include the take-over ^{of} by the city of utilities now operated by the Federal Aviation Administration and the Department of transportation, the definition of city limits, the acquisition of a firefighting capability, and so on. Underlying all of these issues, however, is the issue of land. Above all this has been the major political concern of the council - to get some land from the state or federal government for municipal and private use. The lack of such land is the major roadblock to community integration.

Education

Cold Bay is a part of the Aleutian Region School District and has a school which offers classes from kindergarten through the twelfth grade. Classes are provided for each grade on a yearly basis as needed according to the number of students requiring them. The low number of children in the community, compared to other communities in the region, results in a lack of demand for certain grades periodically.

The school building was constructed in 1961 and consisted originally of a single classroom with living quarters for one teacher. Since that time two additional classrooms have been built. There are now a total of four teachers, usually divided two apiece for elementary and secondary grades, although this depends on the yearly demand and is subject to adjustment. School enrollment has fluctuated widely, but has remained more or less steady despite declining population in the community over the last decade. This is at least partially due to the changing population composition in which transient single males are declining and traditional families

are increasing.

Social Indices

Health care was, until recently, provided by the major employers in the community as there was no central public facility. However, in the summer of 1982 a modern clinic was constructed near the Reeve Terminal and the community now has, for the first time, adequate health care. The community plans to attempt to arrange with a doctor in either Kodiak or Unalaska to make periodic visits to the clinic to provide more intensive health care than is now available. The fact that Cold Bay is a relatively young community means that there are less health problems than would otherwise be expected in a town of its size. Serious medical problems call for removal from the community and transport to Anchorage.

The fact that Cold Bay is essentially a full employment, young, well-paid community means that crime problems are minimal. Cold Bay has not suffered the schism between those who are able to gain limited entry permits and those unable to gain such permits which has characterized other communities in the region, and this has meant there is less likelihood of high crime rates. Nor has the community suffered the social stresses such as suicide, alcoholism, and other stress-related disorders, which have attended such incomes in other communities in the region since most employment is unrelated to the fishery but is instead related to major outside employers. Problems of ethnic friction have also been minimal since the vast majority of residents are white and from outside the immediate area.

ASSUMPTIONS

Sociopolitical

Cold Bay is unique in this region of Alaska in that economic factors are not the dominant variable directing the nature of community development. Without a doubt this position belongs to political and sociopolitical factors. This is illustrated most directly by the fluctuation in population of the community and the relation of those fluctuations to political and military events greatly removed from the community itself.

The community originated at the instigation of outside political forces as a staging base for the Aleutian campaign in World War II. After the war Cold Bay was primarily a refueling base for aircraft flying to the Aleutians and its population dwindled. However, other political events, first the Korean conflict and then the Viet Nam War, resulted in an explosive growth in population as the airstrip was used as a stopover for aircraft bound for these areas. At the end of the Vietnam War the community again experienced a precipitous drop in population. The presence of the Air Force station and the strategic location of the community with its excellent airstrip insure, however, that the community will continue to survive.

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