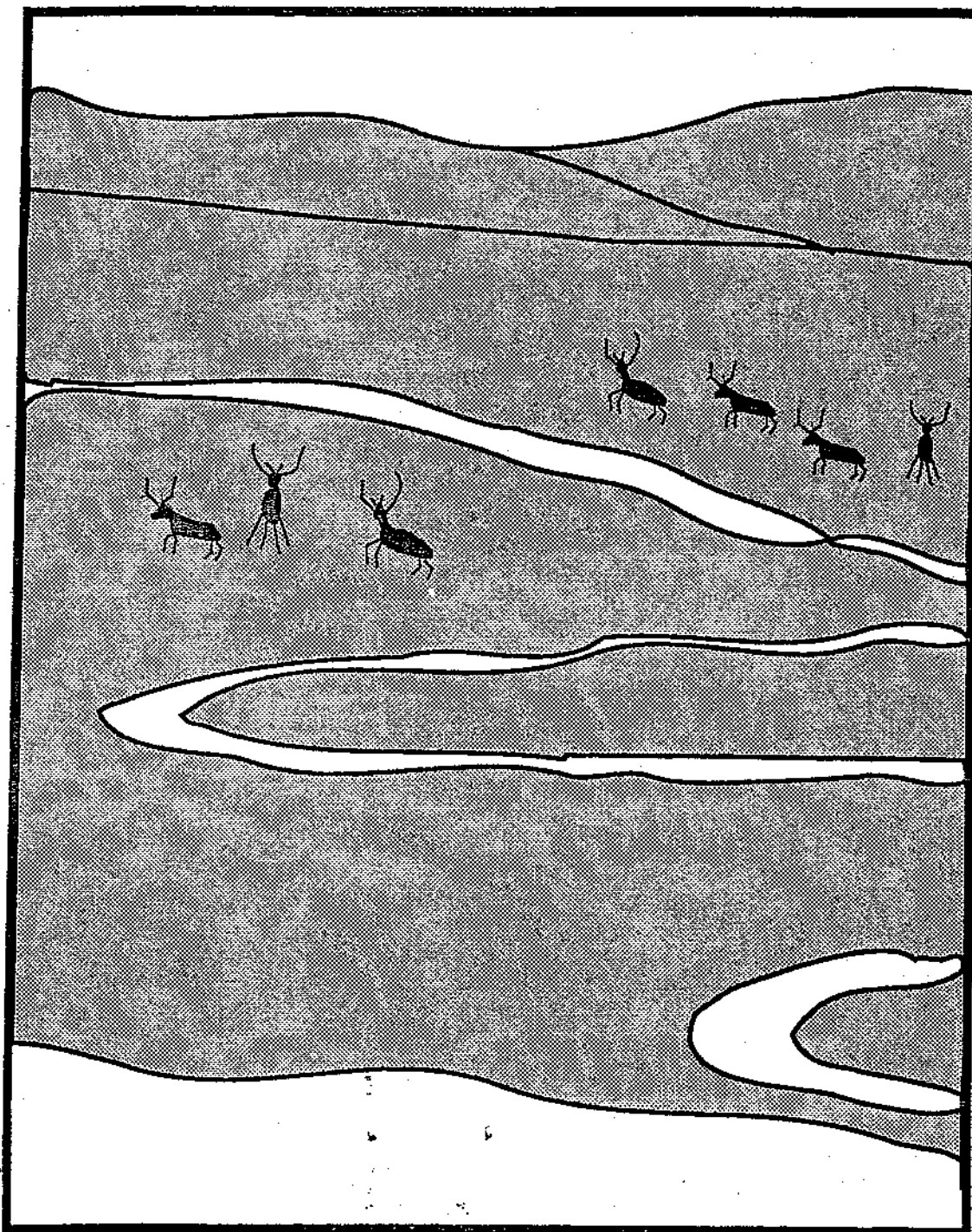


NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN



March 1993

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN
Volume 1 - Plan Document
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APPENDIX A

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN 1.0 INTRODUCTION

WHY IS THE BOROUGH PREPARING A COMPREHENSIVE PLAN?

Voters in the NANA region approved formation of a Borough government in 1986, and adopted a Home Rule Charter in 1987. Under this charter, the Borough adopted powers for providing education, planning and zoning, and taxation. To provide education, the Borough is now administering the Northwest Arctic School District; regarding taxation, the Borough is receiving revenues from the state and federal government and the Red Dog Project. The Borough has elected to prepare a comprehensive plan and adopt land use controls to address planning and zoning. There are other issues relevant to preparation of a comprehensive plan. As part of becoming a municipal government, the Borough is also entitled to select land for borough ownership from the State of Alaska, and has made some initial selections. In recent years, proposals for resource extraction and commercial recreation activities have increased, as has the likelihood of conflicts between these activities and traditional values. The Comprehensive Plan is an important part of adopting land use controls, managing borough lands, and maintaining the traditional way of life for Borough residents.

Borough Planning Objectives

In preparing its comprehensive plan, the Borough has three broad objectives:

1) plan for the future growth and needs of the Borough and its residents, and identify appropriate actions for the Borough

- planning must come from the people of the region; the Borough will take its direction from the villages and other regional organizations
- as communities grow, they need new, expanded or additional housing, water and sewer systems, landfills, roads and airports, and other facilities such as health clinics, schools, community centers; along with the NANA Regional Strategies, the comprehensive plan is a means of foreseeing these needs

Chapter 1.0: Introduction

- actions taken by the Borough should be practical, realistic, cost-effective, and compliment the programs and resources of other regional and state organizations

2) decide what forms of planning and land use controls make the most sense for the NANA region

- traditional uses such as subsistence, preserving cultural and archaeological resources, and protecting fish and wildlife habitat remain the focus of land use policy
- potential commercial, industrial, and economic development must be anticipated, maximizing benefits to local residents while minimizing negative effects
- planning and land use controls will emphasize village involvement and meeting village planning needs

3) provide guidance for the management of borough-owned lands

- the Borough will become a landowner when it receives its municipal entitlement lands from the state
- Borough lands will belong to all the residents of the Borough for their use and enjoyment; management of those lands will emphasize traditional uses by residents

State Requirements for Comprehensive Plans

The Northwest Arctic Borough Comprehensive Plan must also consider state requirements for comprehensive plans. Title 29 of the Alaska Statutes is the state law that sets requirements for adopting planning powers and preparing comprehensive plans. These include the following:

- a home rule borough must "provide for planning, platting, and land use regulations on an area-wide basis"

Chapter 1.0: Introduction

- a comprehensive plan is intended to guide the physical, social, and economic growth of a borough

PLAN ORGANIZATION

The Comprehensive Plan has five major parts:

Issues, Goals and Objectives - what the Borough wants to accomplish in the future, and the direction set for the plan (Chapter 2)

Background Report - a summary of the important cultural, social, economic, land use, institution and physical characteristics of the region that shape the recommendations of the comprehensive plan (this is a separate document called Volume 2)

Forecasts and Scenarios - forecasts of population growth in the Borough and regional and statewide events that can shape the future of the Borough (Chapter 3)

Plan Elements - the recommended Borough actions and strategies to attain its planning goals and objectives; this plan includes land use, economic development, community facilities and infrastructure, and transportation elements (Chapters 4 through 7)

Maps - the comprehensive plan will reference several maps prepared as part of the coastal management program; important subsistence use area and cultural resource area maps from the coastal management plan will be updated and are on file at the Northwest Arctic Borough office in Kotzebue. The NANA Corporation land status map will be referenced as the most current land ownership map.

NORTHWEST ARCTIC Borough COMPREHENSIVE PLAN

2.0 MISSION, ISSUES AND OBJECTIVES

2.1 INTRODUCTION

This chapter of the Northwest Arctic Borough Comprehensive Plan outlines the **mission** of the Borough, **goals** and the **issues** and **objectives** of the planning process. The outcome of the planning effort will be to develop **strategies** to attain the objectives listed in this chapter.

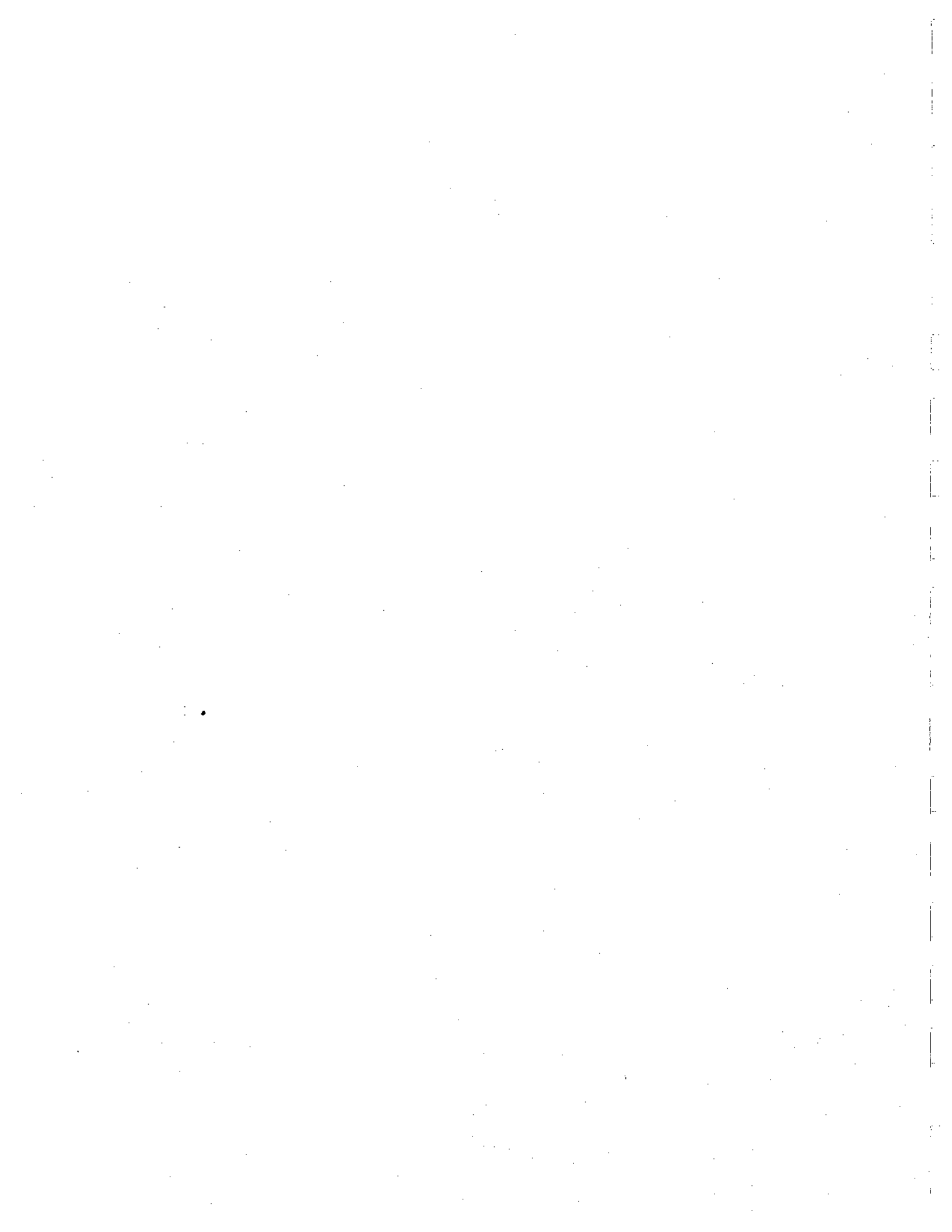
Goals are long-term results or conditions that the residents of the Borough wish to achieve through the Comprehensive Plan. They are relatively broad statements, but provide direction for the balanced use of resources and actions by residents of the Borough, its communities, regional organizations, state and federal agencies, and private industry.

Issues are problems, concerns, or needs expressed by the residents of the Northwest Arctic Borough that are appropriate for the Comprehensive Plan process to address. Within the Borough, some of these issues may be area-wide. Others may be of concern to a specific area or type of development.

Objectives are specific actions which can be taken to achieve long-term results or conditions that the residents of the Borough wish to achieve through the Comprehensive Plan. They will provide guidance to the development of management strategies and implementation of the Northwest Arctic Borough Comprehensive Plan.

Strategies are the specific measures to be taken by the Borough to implement the goals and objectives of the Comprehensive Plan.

The mission statement and general comprehensive planning goals are presented below. Issues and objectives are presented under the headings of each of the major elements of the Comprehensive Plan. These include the Land Use Element (including Subsistence and Cultural Resources); the Economic Development Element; the Community Facilities, Infrastructure and Housing Element; and the Transportation Element. In addition, environmental and health/social service/education issues and objectives are also presented.



2.2 Borough MISSION AND PLANNING GOALS

MISSION STATEMENT: the Northwest Arctic Borough will help the people of the Borough build a higher quality of life while promoting Inupiat cultural values and ways of life

- PLANNING GOALS:**
- maintain the Inupiaq culture
 - promote and maintain subsistence and the traditional way of life
 - protect the environment of the Northwest Arctic Borough
 - support the viability of existing communities
 - support and help develop local self-determination
 - foster appropriate economic development
 - raise the standard of living for Borough residents
 - facilitate implementation of activities and programs by villages, and regional institutions within the Northwest Arctic Borough



2.3 SUBSISTENCE AND SOCIOCULTURAL ISSUES AND OBJECTIVES

ISSUES

- Maintaining traditional values and activities is important to the social, cultural and economic well-being of Borough residents. The Borough should support these values and activities through education programs, land management, and other Borough programs
- Economic and employment opportunities are desirable, but can conflict with pursuing traditional activities and values, and may create social hardship
- Subsistence activities are sensitive to disruption through impacts on fish and wildlife habitat and resources, interference with access to use areas, and competition from commercial sport hunting and fishing
- Archaeological and historical resources are important to Borough residents in that they provide a link between the past and current values and way of life. These resources can be damaged by uncontrolled development activities, and are sometimes taken out of the region without the consent of the local residents

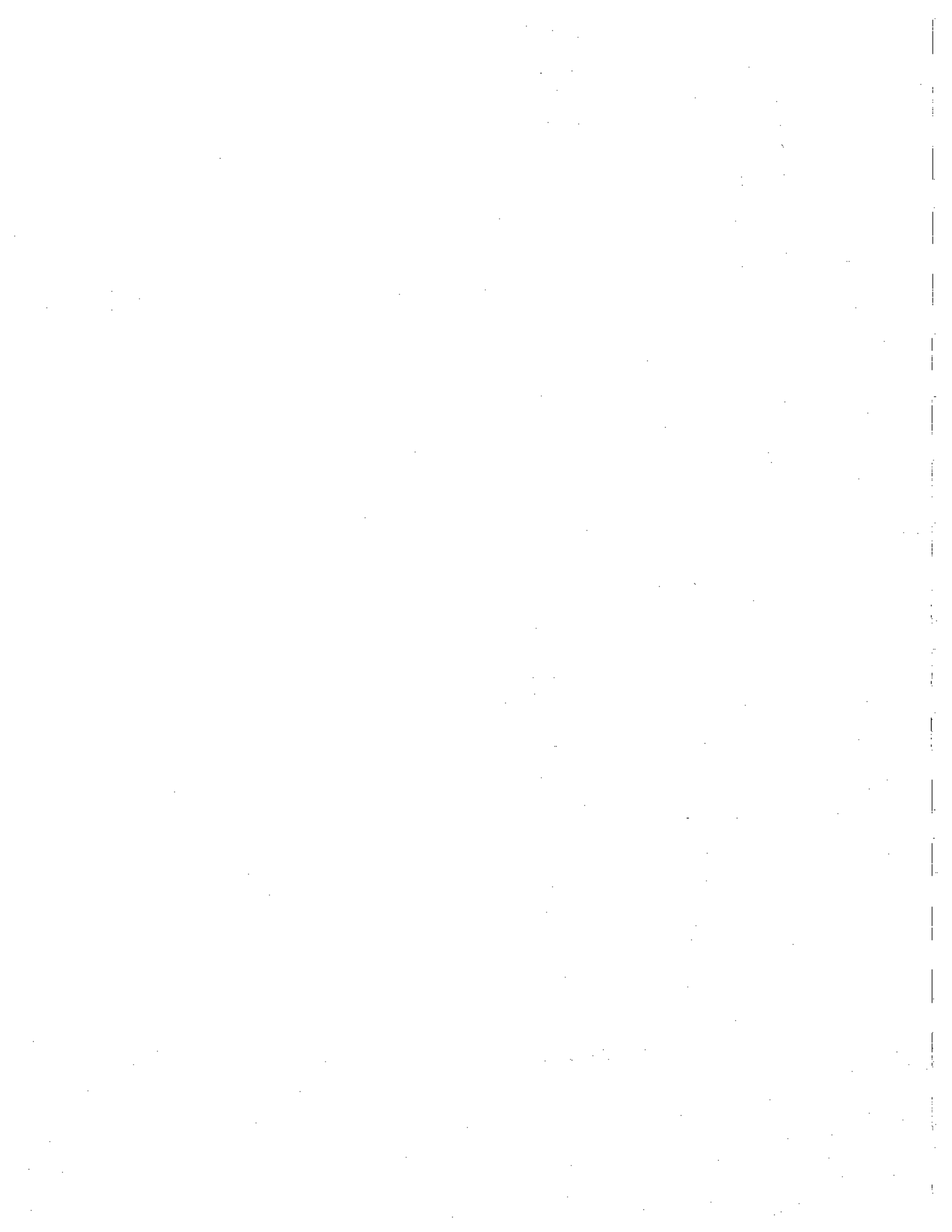
OBJECTIVES

Native culture

- encourage development of programs on traditional language, values and skills, for Borough residents, and for outside workers through workforce orientation programs
- work with villages and regional organizations and programs to reinforce traditional values

Subsistence and Traditional Activities

- use land use controls to protect subsistence, uses, activities and resources



Chapter 2.0: Issues, Goals, and Objectives

- require industrial development projects to address subsistence-related concerns, and to minimize impacts on use of and access to subsistence resources and fish and wildlife
- maximize access to public lands for subsistence activities through local coordination with state and federal land managers
- encourage flexible employment schedules to accommodate subsistence harvest needs
- document subsistence and traditional uses by Borough residents, including use areas, resources utilized, and important periods of use
- to the maximum possible extent, use Borough land selections to protect important subsistence use areas

Archaeological and Historic Resources

- use land use controls to protect archaeological and historic resources during planning for and construction of development activities
- require coordination of archaeological and historic resource research and investigations in the region with the villages, Borough and other regional organizations

2.4 ENVIRONMENTAL ISSUES AND OBJECTIVES

ISSUES

Natural Hazards

- River and coastal flooding, erosion, and permafrost cause property damage in Borough communities; these hazards should be a consideration in planning for community expansion and resource development projects
- Providing protection against natural hazards and repairing property damage is costly, and places financial burdens on residents and municipal governments



Chapter 2.0: Issues, Goals, and Objectives

Fish and Wildlife

- Healthy fish and game populations and habitats are crucial to traditional subsistence activities and to the livelihood of Borough villages. Residents are concerned about potential impacts to fish and wildlife from commercial and industrial development and surface transportation systems
- Management of fish and wildlife resources and their habitat is divided among different federal and state agencies. Local residents need to increase their involvement in management decisions regarding fish and wildlife and ensure state and federal policies are in the region's best interests

Water Quality

- Water quality is important to maintaining subsistence and commercial fish resources utilized by Borough residents. Water quality is susceptible to harmful impacts from development activities and improper waste disposal
- Maintaining water quality is a health concern to Borough residents, in keeping harmful substances out of community water supplies and subsistence foods. Mining activities and petroleum storage have the potential to release harmful substances into surface and groundwater

OBJECTIVES

Natural Hazards

- identify problems in and around Borough villages related to natural hazards such as flooding, erosion, and permafrost
- incorporate provisions to address natural hazards into management of Borough lands, village development plans, and plans for commercial and industrial development activities on public and private lands
- identify potential programs and funding sources for addressing community problems related to natural hazards



Chapter 2.0: Issues, Goals, and Objectives

- act as a central clearinghouse for gathering and distributing land use, ownership and permit information to the region
- ensure that activities on public and private lands are compatible with traditional and existing uses
- ensure that land uses minimize destruction, degradation and disruption of the environment and natural systems
- monitor development activities to ensure conformance with permit stipulations
- participate in and influence government and private land use planning and development projects (including state and federal management plans)
- develop cooperative land management implementation with NANA Corporation to ensure efficient and complementary uses of adjacent lands

State and Federal Plans and Activities

- maintain communication with state and federal land managers to make sure that day-to-day decisions are compatible with Borough land use objectives and the interests of Borough residents
- work with federal agencies to implement ANILCA objectives regarding the use of local residents in management of federal lands
- assist in distributing information on use of state and federal lands to the villages
- incorporate the results of the comprehensive plan into updates of the Northwest Area Plan and federal management plans
- work with state and federal agencies on any exceptions or variances to management plans, and on any plan changes or amendments
- develop multi-agency plans for management of the Kobuk and Noatak River corridors



Chapter 2.0: Issues, Goals, and Objectives

- evaluate applying for a General Wetlands Permit from the Corps of Engineers
- assist villages and agencies with site controls (eg. through subdivision standards) for residential and infrastructure development

Borough and Municipal Planning Activities

- manage lands within the Borough to ensure compatibility with subsistence and traditional activities
- institute a Borough permit system for the establishment of new uses on its lands
- monitor uses on Borough lands and enforce the permit system
- incorporate avoidance of natural hazards into Borough land use controls
- help villages plan for future expansion, including consideration of infrastructure requirements, and proper distribution of land uses
- help make land available for community and infrastructure expansion, through land trades or purchase

Implementation of the Coastal Management Plan

- to the extent consistent with Borough goals and objectives, incorporate the elements of coastal management plan into new Borough systems of land management and permitting
- ensure consistency of the Coastal Management Plan with the goals and objectives of the Comprehensive Plan
- amend the coastal management plan to reflect the Borough boundary, increase the effectiveness of plan policies, and revise the Implementation Chapter
- conduct a thorough Borough review of proposed projects and provide timely recommendations and input on consistency reviews

Chapter 2.0: Issues, Goals, and Objectives

- monitor consistency determinations and pursue elevations and appeals where the state determination has not been adequately supported
 - continue to involve residents and regional organizations in consistency reviews
 - evaluate the effectiveness of coastal management policies and revise them when amending the Borough coastal management plan
-

2.6 ECONOMIC DEVELOPMENT ISSUES AND OBJECTIVES

ISSUES

Employment

- Local government, regional organizations, and private industry have an outstanding record in hiring Borough residents. However, there is a need for more employment opportunities for Borough residents, particularly in the villages
- Job skills are limited among village residents, particularly in technical and administrative areas. Identification of required skills and job training is an ongoing need

Small Business and Local Services

- Costs of goods and services within the region are high, due in part to cost of living and transportation, and the lack of enough local demand to make certain local manufacturing and service opportunities feasible. There may be opportunities to lower costs by pooling purchase of goods and services among local groups and institutions
- Obtaining technical assistance and financial resources can be difficult for local residents wanting to start up new business or resource development ventures in the region. Lack of programs oriented towards rural Alaska and accessibility to assistance are problems

Chapter 2.0: Issues, Goals, and Objectives

Tourism

- Tourism creates jobs and revenues for local residents in the Northwest Arctic Borough, and has the potential for growth. However, tourism can intrude on residents and interfere or compete with traditional activities
- There is a need for coordination between the Borough, villages, tour operators and related businesses, and private, state and federal land managers to address tourism in the region

Major Industrial Development

- The Red Dog Mine is an example of a major industrial development project that has been controlled by local organizations and residents to maximize benefits and minimize impacts. It is desirable to follow this example with other development projects
- Unnecessary duplication of transportation systems for industrial development is concern of the region. Use of existing facilities to the greatest extent possible should be promoted

OBJECTIVES

Employment

- maximize local hire opportunities for Borough residents on public and private construction projects
- assist in identifying employment and skill needs for villages and private projects, and identify job training opportunities
- assist with increasing job skills among local residents, through public education and on-the-job training

Small Business and Local Services

- assist in the identification of local demand for businesses and evaluate potential opportunities
- evaluate means of reducing regional costs of goods and services, including import substitution

Chapter 2.0: Issues, Goals, and Objectives

- identify sources of technical and financial expertise that local businesses can use
- provide technical support for small-scale commercial and industrial development by local residents, including reindeer herding, mining, forest products, and home-based industries

Tourism

- work with tour operators, local businesses and state and federal agencies to protect cultural values and to manage use of the area by tourists in a manner acceptable to local residents
- work with villages as requested to determine what forms of tourism and local opportunities are desirable
- work with state tourism associations and agencies to develop promotional material on the attractions of the region

Major Industrial Development

- work with major industrial developers to bring large projects on line using the Red Dog project as a model
- work with the state to plan for major infrastructure associated with industrial development
- encourage joint use of infrastructure by various industrial development projects to minimize need for unnecessary facilities

2.7 CAPITAL PROJECTS AND INFRASTRUCTURE ISSUES AND OBJECTIVES

ISSUES

- Most rural residents live in housing which fails to meet minimum standards for size, insulation and heating, home sanitation and safety

Chapter 2.0: Issues, Goals, and Objectives

- Borough residents rely on expensive and incomplete public utility systems for heat, electricity, water, sewer, communications, public safety and solid waste
- Several villages have public utilities and facilities that are not operating properly, are difficult to maintain and operate, or are in violation of state and federal regulations

OBJECTIVES

Project Programming and Funding

- the Borough should act as a safety net for programs that cannot provide an adequate level of service, or are in danger of losing their funds
- work with communities, regional organizations, and the state and federal government to set priorities to improve/expand infrastructure in villages to improve quality of life
- participate in and influence government and private land use planning and development projects to address infrastructure and service needs
- work with state and federal agencies to provide public facilities and transportation infrastructure and improvements
- assist villages in identifying potential funding sources and in preparing grant applications, as requested

Housing

- coordinate with NIHA to assess the need for a comprehensive housing plan which identifies housing needs and proposes strategies to fulfill the regional housing goals
- assist in resolving confusing and conflicting land status issues to ensure site control and clear title for all housing projects
- help coordinate housing programs with all necessary utilities

Chapter 2.0: Issues, Goals, and Objectives

- assist with establishment of a housing rehabilitation program to bring older houses up to acceptable standards
- help with efforts to provide or fund construction of housing
- help with the development of housing assistance programs
- coordinate with DCRA and AHFC to develop regional housing programs
- help evaluate the need for upgraded building codes for housing

Utilities

- continue efforts to ensure full funding for the Power Cost Equalization program
- work to establish standards of basic levels of service for all utilities within the Borough
- work with villages to develop strategies to upgrade all sub-standard utility systems within the Borough
- coordinate with all community and regional utilities to ensure adequate funding and training for system operation maintenance and upkeep
- work with villages, regional utilities and organizations and strive to find innovative and cost-effective alternatives and technologies to manage and administer public utilities

Facilitation of Community Development

- identify and assist in the development of potential sources of gravel for housing and infrastructure improvements
- work with the Army Corps of Engineers to evaluate developing a general wetlands permit for community related development

2.8 TRANSPORTATION ISSUES AND OBJECTIVES

ISSUES

- Unregulated transportation development can have devastating effects on traditional lifestyles and cultural integrity, and on fish and wildlife resources on which residents depend. Continued industrial development will require a variety of transportation systems, and residents question whether public access to surface systems connected to other parts of the state is in their best interests.
- Air and marine transportation facilities are an important link between Borough villages, and to the rest of Alaska. Such facilities are expensive to maintain, and in some cases, safety related improvements are needed. The Borough should identify maintenance and improvement priorities for transportation facilities.

OBJECTIVES

Transportation Planning

- take the lead role in transportation planning for the region, in full coordination with other agencies and organizations
- work with villages to identify transportation priorities for the region and develop a Transportation Improvement Plan

Transportation Maintenance and Improvements

- transportation improvement and maintenance needs shall be identified for each village
- set priorities for transportation improvement and maintenance, and identify potential sources of funding

Transportation Created Impacts

- consolidate use of existing surface transportation systems to the greatest extent feasible

Chapter 2.0: Issues, Goals, and Objectives

- control access on surface transportation facilities or limit sport hunting and fishing along such facilities to prevent competition with subsistence
- if major surface transportation systems are necessary, create a management group to prepare a transportation corridor management plan
- use ice roads to the greatest extent possible to prevent impacts
- locate and design surface transportation facilities to prevent impacts on fish and wildlife

2.9 HEALTH, SOCIAL SERVICES, AND EDUCATION ISSUES AND OBJECTIVES

ISSUES

- Declining levels of funding are creating difficulties in providing adequate levels of health and social services to Borough residents
- The region continues to suffer from high incidents of substance abuse, suicide and low educational attainment.

OBJECTIVES

- avoid unnecessary duplication of services provided by other organizations
- act as a safety net for programs that cannot provide an adequate level of service, or are in danger of losing their funds
- evaluate ways that the Borough can provide assistance with delivery of health and social services to its residents
- identify sources of technical and financial expertise that local communities and organizations can use to improve efficiency and reduce cost of providing services

2.10 INSTITUTIONS ISSUES AND OBJECTIVES

ISSUES

- The Northwest Arctic Region has been well known in Alaska for the strength and effectiveness of its many regional and community organizations. The Northwest Arctic Borough is a relatively late arrival on the institutional scene, and should pursue objectives that strengthen the activities of villages and other regional institutions
- Changes in state and federal funding formulas may affect traditional programs used by Borough residents. One of the challenges facing the Borough is to supplement existing funds and identify new funding sources
- The use of Regional Strategies to bring together regional interests to meet the needs of residents has been reinstated during the last several years. The Borough should continue its role of coordinating the Regional Strategies or a similar process

OBJECTIVES

Borough Programs

- maintain a Borough grants office that identifies sources of funding and assists villages in obtaining funds
- work with legislators and the villages to maximize capital project funding and state revenue sharing
- work with IRA councils and other village and regional organizations to maximize self determination and local control by Borough residents

Regional Coordination

- assist in improving coordination between villages and regional organizations
- take the lead as regional coordinator for planning and review of

Chapter 2.0: Issues, Goals, and Objectives

commercial and industrial development projects

- function as a local clearinghouse to track permit applications, review of permit applications, and monitoring permit stipulations and performance
- assist in facilitating and coordinating among the villages, regional groups and programs, and providing the forum for discussions or working together to best meet the needs of the residents of the region
- work with other regional organizations to develop unified regional positions on issues and proposals affecting the Northwest Arctic region

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN

3.0 BOROUGH FORECAST

3.1 PURPOSE

Because a primary purpose of the Comprehensive Plan is to provide guidance for future actions by the Borough, this chapter presents a series of potential forecasts for the Northwest Arctic Borough. Forecasts help accomplish the following:

- provide a basis for anticipating change in the Northwest Arctic Borough
- address potential changes in population and social characteristics
- address potential changes in the economic and physical environment
- assist in developing appropriate short-term, medium-term, and long-term actions for the Borough

Forecasts are presented for two topics: population and social characteristics and economic and physical environment characteristics. Each topic includes Low, Best Guess, and High Scenarios. These forecasts are an educated guess of future events affecting the Northwest Arctic Borough from one point in time. Because conditions can change dramatically over a short period of time, the characteristics and forecast information should be updated every year.

3.2 POPULATION AND SOCIAL CHARACTERISTICS AND FORECASTS

Population and social characteristics and forecasts are presented for the Borough and its communities. Key indicators include population, housing, and employment.

Northwest Arctic Borough Population Characteristics

The Borough boundaries approximately match the area of the old Kobuk Census Area. The 1960 population of the area was listed as 3,236. In 1970, the population was 4,048 and in 1980 the number had grown to 4,831. The 1990 population of the Borough is listed by the Alaska Department of Labor as 6,113. The average rate of growth during the thirty years from 1960 to 1990 is about two per cent per year. Two components make up the growth of population. The first is natural increase which is related to the high birth

Chapter 3.0: Borough Forecast

rate in the Borough, and the second is migration, people coming or leaving. Between 1980 and 1990 the natural increase accounted for 1,591 additional people. More people left the Borough during this period than came to live here resulting in a net loss of 309 people from out-migration. Most rural areas of Alaska show a similar pattern. The villages have high birth rates and high rates of out migration, which result in some places having less people over all, and the more urban areas gaining population from in-migration.

The Borough population is predominately Alaskan Native, eighty-five per cent, and young. The birth rate of 36.2 children per 1000 people is the second highest in the state and well above the state average of 24.4. The birth rate is also significantly higher than 1970 to 1980 which was 27.2 births per thousand. Forty-three per cent of the Borough population is less than 18 years old. The mortality rate was also the second highest in the state at 7.1 per 1000 people. This rate was also well above the state average of 4.1 per 1000.

The Borough has remained about 85 percent Native American since the 1980 census. Largest growing ethnic group is Asian, who rose to about one per cent of the total population. The number of whites actually declined slightly to about 13 per cent.

The number of people per household declined from 4.2 to about 3.9. The number of people per household is still 42 per cent higher than the rate in urban areas and about 30 per cent higher than the state average. The total number of housing units listed in the Borough rose between 1980 to 1990 from 1,486 to 1,998. The number of occupied units rose by almost 400 houses.

State population figures for Northwest Arctic Borough 1991 is 7,081. The full value (includes all real and personal property) of all the property in the Borough was \$387,443,000. The per person value was \$54,716. Most of the property value is in Kotzebue and at the Red Dog Mine.

Village Population Characteristics

Table 3-1 and Figure 3-1 show 1980 and 1990 population numbers for the villages in the Northwest Arctic Borough, based on U.S. Census data. Village growth rates over the 10 year period ranged from 4.7% for Deering to nearly 80% for Buckland.

Table 3-1 1980-1990 Population for Northwest Arctic Borough Villages

Village	1980 population	1990 population	change in population	% change	% under 18 years
Ambler	192	311	119	62.0%	50.5%
Buckland	177	318	141	79.7%	51.6%
Deering	150	157	7	4.7%	43.9%
Kiana	345	385	40	11.6%	48.3%
Kivalina	241	317	76	31.5%	42.4%
Kobuk	62	69	7	11.3%	53.6%
Kotzebue	2054	2751	697	33.9%	39.3%
Noatak	273	333	60	22.0%	39.6%
Noorvik	492	531	39	7.9%	45.8%
Selawik	535	596	61	11.4%	48.3%
Shungnak	202	223	21	10.4%	42.6%
other	108	122	14	13.0%	27.9%
Total	4831	6113	1282	26.5%	43.1%

Source: Alaska Dept. of Labor 1991

Borough Villages 1980-1990 Population

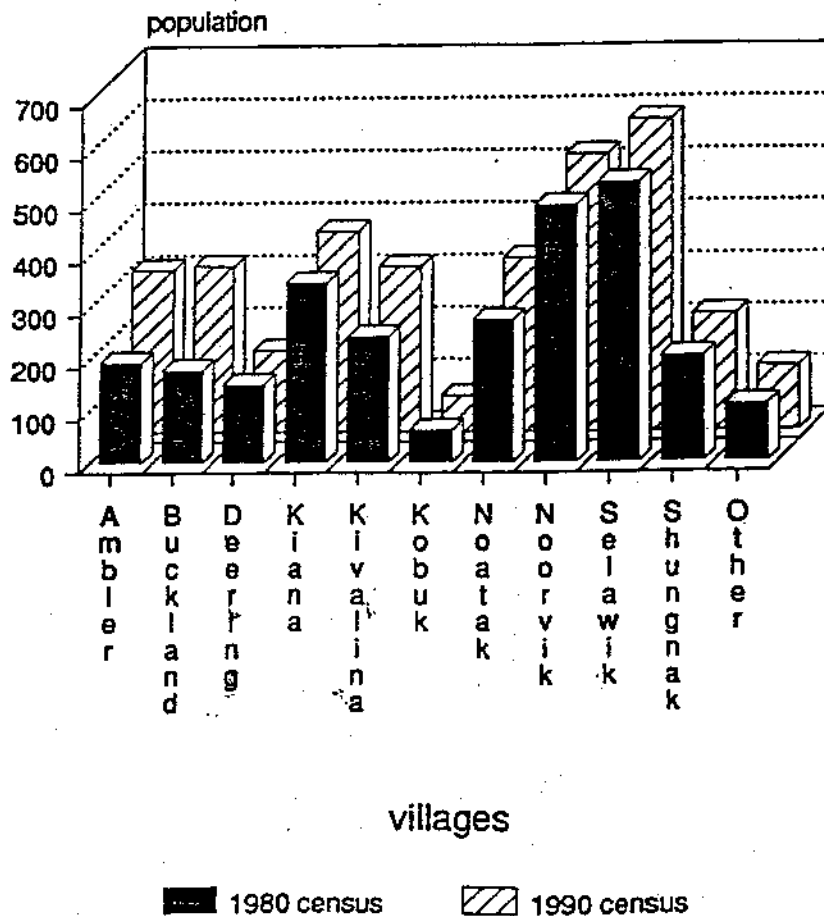


Figure 3-1

Chapter 3.0: Borough Forecast

Kotzebue had the third highest growth rate (33.9%) in the region and largest population increase (697). As with the Borough, the population is young; the percent of the population under 18 years of age ranges from nearly 54% for Kobuk to 39% for Kotzebue. This compares to a statewide average of 31% under 18 years of age. Table 3-2 shows 1980 and 1990 housing characteristics for the villages in the Northwest Arctic Borough, based on U.S. Census data.

Employment Characteristics

Figure 3-2 through 3-4 show selected employment characteristics for the Northwest Arctic Borough area. Status of employment from a Borough sponsored survey in 1988 is shown in Figure 3-2; only 28% of respondents had fulltime employment. Seasonal employment accounted for 27%, and part-time employment 18%; 27% didn't respond or felt the question didn't apply. Figure 3-4 shows jobs by principal employers. Government (federal-state-local) accounted for 25% of employment, followed by the private sector (18%), the school district (14%), and Manillaq (12%)

Population Forecasts

Figures 3-5 through 3-7 show low, medium and high population forecasts for the Northwest Arctic Borough over a 20 year period from 1991 through 2011. These forecasts are based on a combination of natural rates of population increase, recent trends, and assumptions on growth associated with the rise or fall in available federal, state, and local revenues.

Under the low scenario (Figure 3-5), the population peaks (following recent natural growth rates) at 6800 in 2001, and then declines to close to current levels by 2011. This scenario follows the low economic proposal, and assumes a slower rate of increase, followed by an outmigration from the region as federal, state, and local revenues fall off after the turn of the century. The 2011 population returns to close to 1991 levels.

The middle population projection (Figure 3-6) shows greater rate of increase to approximately 7500 by 2003, slowing to a peak of 7750 by 2007, and a gradual decrease to 7600 by 2011. This scenario corresponds to the "Best Guess Scenario" in the following section, in which revenue, employment, and infrastructure stay at current levels, but that major resource development does not take place.

Table 3-2 1980-1990 Housing for Northwest Arctic Borough Villages /1

Village	1980			1990			1990			Change in Total Units /2	% persons/ change household /3
	Total Units	Occupied Units	Vacant Units	Total Units	Occupied Units	Vacant Units	Total Units	Occupied Units	Vacant Units		
Ambler	75	48	27	79	71	8	79	71	8	4	5.3%
Buckland	45	39	6	70	69	1	70	69	1	25	55.6%
Deering	35	35	0	54	44	10	54	44	10	19	54.3%
Kiana	107	75	32	124	91	33	124	91	33	17	15.9%
Kivalina	37	37	0	71	67	4	71	67	4	34	91.9%
Kobuk	37	16	21	24	18	6	24	18	6	13	35.1%
Kotzebue	690	565	125	911	764	147	911	764	147	221	32.0%
Noatak	78	59	19	85	74	11	85	74	11	7	9.0%
Noorvik	136	91	45	138	107	31	138	107	31	2	1.5%
Selawik	128	107	21	154	129	25	154	129	25	26	20.3%
Shungnak	54	47	7	68	54	14	68	54	14	14	25.9%
other	64	21	43	220	182	38	220	182	38	156	243.8%
Total	1486	1140	346	1998	1670	328	1998	1670	328	512	34.5%

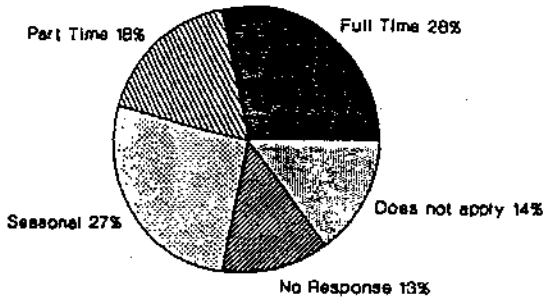
/1 - Doesn't account for condition of housing stock or persons per household

/2 - change in total units

/3- based on 1990 population and total occupied units

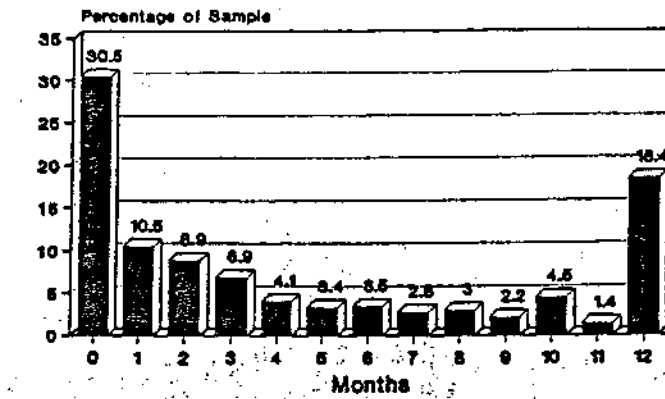
Source: Alaska Dept. of Labor 1991

Status of Employment Figure 3-2



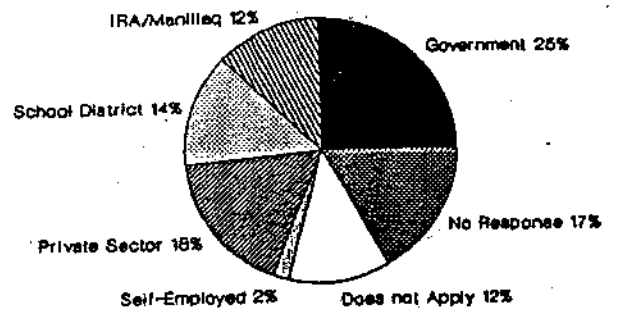
From McNabb, 1989

Figure 3-3: Months Employed April 1988-March 1989



From McNabb, 1989

Principal Employer Figure 3-4



From McNabb, 1989

Northwest Arctic Borough Population:Low Scenario

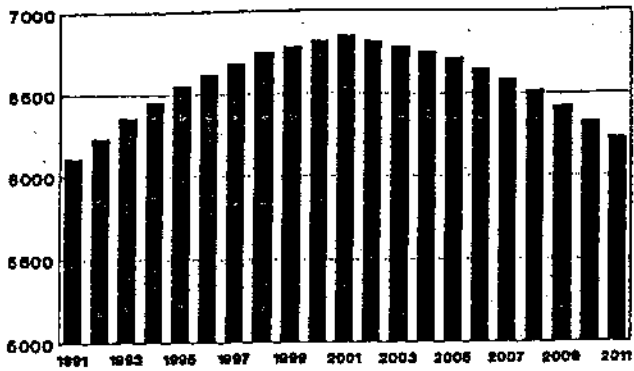


Figure 3-5

Northwest Arctic Borough Population:Middle Scenario

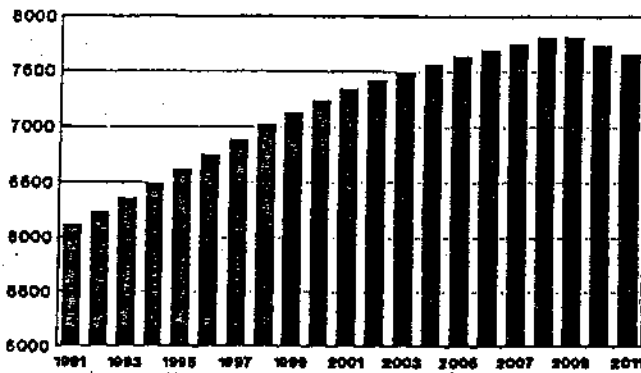


Figure 3-6

Northwest Arctic Borough Population:High Scenario

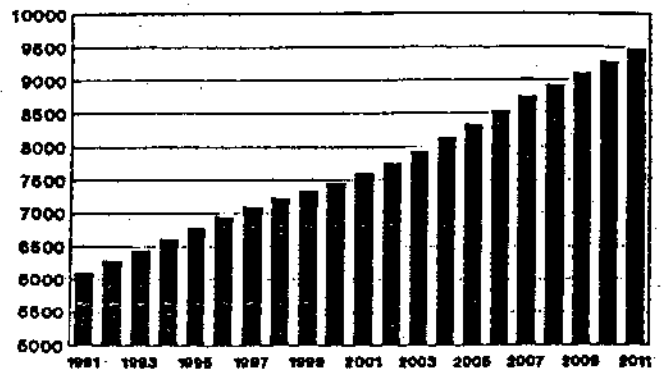


Figure 3-7

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The High Scenario (Figure 3-7) shows the greatest rate of steady increase, from just over 6000 in 1991 to nearly 9500 by 2011. This scenario corresponds to the High Economic Scenario, with major resource development and associated increases in public revenues. Such revenue and economic opportunities would support a more rapidly growing population.

3.3 ECONOMIC AND PHYSICAL ENVIRONMENT FORECASTS

These scenarios represent a "best guess" of different combinations of events that could occur in the future, and none have any greater likelihood of occurring than others. Their purpose is to look ahead, anticipate, and prepare for what might occur. The low scenario is a "bad news comes in bunches" projection; it may appear negative, but the events listed have been discussed in the past and have a possibility of occurring. The best guess or middle scenario contains a mix of positive and negative events, and assumes that current conditions continue or improve slightly. The high scenario is a high economic and development activity scenario. It will probably mean more jobs for residents and revenue for the Borough; there is a potential down side in increased social and cultural stress.

The Low Scenario

The Low alternative assumes the following events take place:

- North Slope oil production goes into permanent decline where new finds do not make up for the decline in Prudhoe Bay production, with precipitous drops in state revenue over the next two decades;
- development in ANWR is not allowed;
- worldwide prices for minerals remain depressed, forcing the slow-down and eventual closure of the Red Dog mine;
- social pressure against the fur industry forces legislation banning the trapping and selling of furs for commercial purposes;
- subsidies for mail delivery end, reducing frequency of air service to villages and increasing costs;
- fish prices remain depressed, decreasing profitability of commercial fishing in the region; neither continued operation or expansion of fish hatchery at Sitkisuliaq is feasible;

Chapter 3.0: Borough Forecast

- subsidies for local utilities end (including power cost equalization), increasing monthly rates beyond the reach of most residents; many utility systems are shut down or operate on a limited basis;
- fuel and heating oil prices increase with no public subsidies;
- rural Alaska loses political influence in Juneau, and the state focuses its limited resources more on urban areas;
- the Western Arctic caribou herd crashes, reducing animals available for subsistence use;
- state and federal funding to regional non-profit organizations is curtailed, resulting in cutbacks in programs such as health, education, job training and social services and higher charges to local residents (proposed regional hospital in Kotzebue is not funded); cutbacks in local employment are also experienced;
- state and local funds to operate and maintain schools declines, forcing the closure of many village schools; students are once again boarded in regional centers such as Kotzebue for the school year;
- NANA Corporation and KIC experience economic hardships, with loss of employment and regional economic activities;
- decreases in state and federal onshore and offshore lease sale activities;
- increased reliance on subsistence and firewood use as cash employment opportunities decrease;

A Low Scenario would have adverse consequences for the economic well-being of the Borough. With a rising population, dependence on a cash economy, and reduction in available animal and fish resources, the Borough might not be able to return to a complete subsistence lifestyle. The viability of many villages could be threatened, if state and federal grant programs decline or end.

Best Guess Scenario

The most likely scenario involves the continuation of the status quo, with gradual steps taken to increase non-renewable resource extraction.

- North Slope production goes into long-term decline, but worldwide oil prices remain steady enough to provide state revenues to cover basic needs;
- exploration in ANWR is permitted, but nothing is found;

Chapter 3.0: Borough Forecast

The High Scenario

In many economic projections, a high scenario is considered a "best" scenario, filled with intense economic activity and positive secondary benefits. While cash economy and service program opportunities would improve, increasing social pressures will affect traditional cultural and subsistence values.

The high scenario brings the following developments:

- Red Dog continues in full production;
- Additional major lead/zinc/silver mining projects are developed northwest of Red Dog;
- development in ANWR is permitted, and enough profitable reserves are found to link up with the Alyeska pipeline system;
- a trans-Alaska gas pipeline is built, increasing statewide employment and revenue;
- coal is exported from the Chukchi Sea coast via a railroad to Nome, potentially resulting in local employment and revenues;
- a major copper mine opens in the Ambler Mining District, connected by road or rail to interior Alaska or the Chukchi Sea; local employment and revenue opportunities are created;
- coal is also produced for local use from the Chicago Creek or Hockley Hills mining areas;
- major offshore oil reserves are found and pipelines are constructed in several locations in the borough; local employment and revenue opportunities are created;
- a haul road and pipeline is built linking many of these new developments with the trans-Alaska pipeline system; after intense political debate, the road is opened to the public;
- population in the borough increases dramatically, but a high percentage of the increase is from non-resident workers;
- tourism also increases as many of the national parks and monuments become more accessible;
- increased pressure is placed on subsistence resources;
- increased federal, state and local funds are available for many social programs, such as public housing and power/utility subsidies;

Chapter 3.0: Borough Forecast

- the Borough starts its own permanent fund

The important outcome of the High scenario is the continued ability of area residents to enjoy traditional subsistence pursuits, combined with increased conventional cash employment opportunities and Borough revenues. Public program would be safe from reductions in funding or complete cancellation, and expanded or new programs would be likely. Potential problems include improved access to the region from the rest of Alaska, and increased sport and commercial recreation activities. Increased employment, activity levels, and outside access could create new pressures on traditional cultural, social, and subsistence values and activities.

The Low, Best Case, and High Scenarios are summarized in Table 3-3.

Table 3-3 Scenario Assumptions - Low Scenario

- o North Slope oil production goes into permanent decline where new finds do not make up for the decline in Prudhoe Bay production, with precipitous drops in state revenue over the next two decades; Development in ANWR is allowed, but no profitable oil or gas is found; Worldwide prices for minerals remain depressed, forcing the slow-down and closure of the Red Dog mine; Borough revenues would be adversely affected; Social pressure against the fur industry forces legislation banning the trapping and selling of furs for commercial purposes; Subsidies for mail delivery end, reducing frequency of air service to villages and increasing costs; Fish prices remain depressed, decreasing profitability of commercial fishing in the region. Neither continued operation or expansion of fish-hatchery at Sikiisuliat is not feasible; Subsidies for local utilities end, increasing monthly rates beyond the reach of most residents. Many utility systems are shut down or operate on a limited basis. Rural Alaska loses political clout in Juneau, and the state focuses its limited resources more on urban areas; State and federal funding to regional non-profit organizations is curtailed, resulting in cutbacks in health and social services and higher charges to local residents; Funds for school administration and maintenance declines, forcing the closure of many village schools. Students are once again boarded in regional centers such as Kotzebue for the school year. Fuel and heating oil prices increase with no public subsidies.

Best Guess Scenario

- o North Slope production goes into long-term decline, but worldwide oil prices remain steady enough to provide state revenues to cover basic needs; Development in ANWR is finally permitted, and enough profitable reserves are found to link up with the Alyeska pipeline system; Global natural gas prices remain low and the proposed gas line is not built; Worldwide prices for minerals hold steady, and the Red Dog mine continues to provide the mainstay for private development in the Borough; The fur industry remains depressed, as social pressure closes many fur outlets; Fish prices remain at current levels. The fish hatchery at Sikiisuliat operates at current levels but expansion is not feasible; Subsidies for mail delivery continue, but remain vulnerable to cancellation; Power cost subsidies continue, providing essential relief from high utility bills. Educational funding continues at present rates; State and federal funding to regional non-profits remains at current levels, maintaining health and social service programs; Within a decade, a second mining project similar to Red Dog is given serious consideration and public review. After lengthy consideration, this second project is approved. The state proposes to construct a road or railroad system linking the Borough with the Railbelt. After an intense political debate, these proposals are tabled; state policy is relatively balanced in attempting to meet the needs of rural and urban residents;

High Scenario

- o Red Dog continues in full production; Additional major lead/zinc/silver mining projects are developed northwest of Red Dog; the trans-Alaska gas line is built, increasing statewide employment and revenue; Coal is exported from the Chukchi Sea coast via a road which connects with the Delong Mountain Transportation System, resulting in local employment and revenues; a major copper mine opens in the Ambler Mining District, connected by road or rail to interior Alaska. Local employment and revenue opportunities are created; Coal is also produced and shipped from the Chicago Creek mining area; major offshore oil reserves are found and pipelines are constructed in several locations in the borough; local employment and revenue opportunities are created; a haul road and pipeline is built linking many of these new developments with the trans-Alaska pipeline system; after intense political debate, the road is opened to the public; population in the borough increases dramatically, but a high percentage of the increase is from non-resident workers; tourism also increases as many of the national parks and monuments become more accessible; increased pressure is placed on subsistence resources; increased federal, state and local funds are available for many social programs, such as public housing and power/utility subsidies; the borough starts its own permanent fund;

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN

4.0 LAND USE ELEMENT

4.1 INTRODUCTION

4.1.1 LAND OWNERSHIP AND MANAGEMENT

4.1.2 LAND USE AND USE CONTROLS

4.1.3 LAND USE PLANNING

4.2 BRIEF DESCRIPTION OF REGIONAL LAND USE AND MANAGEMENT CHARACTERISTICS

4.2.1 LAND OWNERSHIP AND MANAGEMENT

4.2.2 LAND USE AND USE CONTROLS

4.2.3 LAND USE PLANNING

4.3 LAND USE SCENARIOS

4.3.1 LOW SCENARIO

4.3.2 BEST GUESS SCENARIO

4.3.3 HIGH SCENARIO

4.4 BOROUGH STRATEGIES FOR LAND USE AND MANAGEMENT

4.4.1 LAND OWNERSHIP AND MANAGEMENT

4.4.2 LAND USE AND USE CONTROLS

4.4.3 LAND USE PLANNING

4.1 INTRODUCTION

Land is at the center of Inupaq culture; they have used lands within the Borough for thousands of years. Land is viewed as a living thing, and the ideas of owning land and controlling its use are not easy to accept. However, maintaining traditional uses of the land is crucial to the survival of the people and communities of the Borough. Adoption of appropriate local land use controls and selection of Borough lands is an important strategy in maintaining cultural and subsistence practices.

The Land Use Element of the Northwest Arctic Borough Comprehensive Plan addresses the topics of land ownership and management, land use and use controls, and land use planning. It provides a brief description of regional land use and management characteristics and presents Borough strategies for land use and management. Three future scenarios for the Borough that also apply to land use are presented in Chapter 3.0; land use issues, goals and objectives appear in Chapter 2.0. Because a primary purpose of a comprehensive plan is to "provide the basis for adoption of area-wide planning, platting and land use regulations", this element contains a significant amount of details and recommendations. Other more detailed information is contained either in the Background Report or appendices to the Comprehensive Plan.

The Northwest Arctic Borough has, or will eventually have, several responsibilities under land ownership and management, land use and use controls, and land use planning:

- as a endowment of formation, the Borough is entitled to select land from the State of Alaska to be owned and managed by the Borough. The Borough must decide how to select additional lands, and manage these lands once it receives title.
- many municipal governments adopt zoning ordinances, subdivision ordinances, and other forms of land use regulations. The Borough must decide what land use controls are needed and what forms are most appropriate for the region, its villages and public and private landowners.
- the Borough is the local district administrator of the Northwest Arctic Borough coastal management program, which is implemented through review of and

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comment on particular local, state, and federal. In addition to its role in reviewing federal, state, and local permits through the program, the Borough can initiate other activities related to the program, such as conduct special area planning (AMSA's), and adding or modifying plan policies.

- many federal, state and private landowners prepare plans for management of their lands and waters; the Borough will have the opportunity to participate in those plans, or initiate cooperative planning efforts to address problems of mutual concern. In addition, Borough villages may request assistance with local planning activities.

The section of this chapter on Borough strategies for land use and management, and associated appendices, address these responsibilities and options in detail.

4.2 BRIEF DESCRIPTION OF REGIONAL LAND USE AND MANAGEMENT CHARACTERISTICS

4.2.1 LAND OWNERSHIP AND MANAGEMENT

Federal Lands: The Northwest Arctic Borough has a land ownership pattern characterized by large blocks of land managed by a small number of organizations. Much of the land in the Borough is under federal ownership and management. The federal areas include lands managed by the Bureau of Land Management, National Park Service, Fish and Wildlife Service, the Department of Defence and the Federal Aeronautics Administration. By far the largest holdings are those administered by the Park Service and Fish and Wildlife. These areas were established by congress and the President under the Alaska National Interest Lands Conservation Act (ANILCA). They include a National Park, a National Monument, two National Preserves and two National Wildlife Refuges.

State Lands: The State of Alaska is also a major land owner in the region, having selected and received title to federal lands as a result of statehood. State lands are located in four major areas of the Borough: north and east of Kivalina; north and east of Ambler and Shungnak; along the Baldwin Peninsula south of Kotzebue, and south of Deering and Buckland. The state also has title to the all tide and submerged lands within three miles of the ocean shore and title to all land under navigable waters. State statute

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(AS 38.04.060) requires that the Department of Natural Resources inventory state water and land and the resources and values associated with the areas. The inventory operates as sort of a very general plan to guide uses on state lands. The inventory is to give priority to areas of potential settlement, economic development, and critical environmental concern. The state is beginning a final round of major selection from federal (BLM) lands. This selection may add additional areas of state land within the Borough.

Native Lands: The two native corporations, NANA Regional Corporation (NANA) and Kikiktagruk Inupiat Corporation (KIC), dominate the private land ownership picture. NANA and KIC received their lands as a provision of the Alaska Native Claims Settlement Act. NANA corporation holds title and rights to both the surface and subsurface while KIC received only the surface rights. The KIC surface rights do include gravel and material sources. KIC lands are located around or near the City of Kotzebue. NANA corporation lands are spread throughout the Borough and include lands near the villages because of the merger of the regional and village corporations. Management of these lands is by the respective corporations who have management staff and permit systems that regulate some activities. The use of each corporations lands are guided by a list of policies adopted by the respective corporate boards. The policies are updated as required and generally allow non-shareholder temporary use or access through a permit system. Most major development activities require approval by the respective corporate board. Because of the merger of the village corporations with the regional NANA corporation the areas around the villages is controlled by the regional corporation, with input from the IRA councils. A large number of 40 acre to 160 acre allotments are owned by Native residents throughout the region

Municipal Lands: The cities in the Borough are in the process of receiving land from the regional corporation under the terms of the Alaska Native Claims Settlement Act (ANCSA) section 14 C. They are also receiving excess land from the townsite trustee program of the federal government. These land transfers are very important because the land is located within and immediately adjacent to the developed areas in the Borough. The need for land for residential development is acute in all the villages. Additional land is also needed for municipal services, schools, airports and roads. Many of the residents of the Borough are young people who were born after the adoption of ANCSA. These people are now young adults who need their own lands and property. These transfers to the

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cities are first chance many have had to acquire property. Several cities are planning sales of lands to provide their residents places to live and raise families.

The Northwest Arctic Borough will become a major landowner in the near future. The Borough is entitled to receive up to 285,000 acres of land under the provisions of the State Municipal Entitlement Act. The Borough staff has worked with the state to file timely and appropriate selections. The approval of the selections will give the Borough direct management over these lands. The selections are generally along river corridors to protect traditional and ongoing activities by Borough residents, and also include some lands with resource development or transportation corridor potential where the Borough can have a role in regulating development. The transfer of land to the Borough is frozen until the state completes its selections from the federal government in 1994. All of the land that will be transferred to the Borough from the state is in remote areas far away from the village centers of activity.

4.2.2. EXISTING LAND USE AND USE CONTROLS

Subsistence/Traditional Land Use

To some people, the Northwest Arctic Borough appears as a vast empty land of rivers, lakes, mountains and coastline. The area is most often seen by visitors from outside the area from a jet or small airplane traveling at great speed. This appearance of emptiness is misleading; most all of the area is occupied and used. Many of the traditional land uses that are occurring are hard to detect from evidence on the ground or disturbance to the area. Trapping, fishing, hunting and even sizable uses of the land such as reindeer herding leave little evidence in the way of permanent marks associated with the conventional idea of land use. The traditional subsistence-based land uses in the area require abundant open space and many uses are not conducted at the same site day after day or even in consecutive years. Much of the Borough has a land use pattern that has been very stable for hundreds of years; changes that have occurred in the use of the land in the Borough have taken place during the last 30 years.

The Native people of Alaska have pursued subsistence as a way of life for untold generations; subsistence is well recognized as essential to the economy, social structure and cultural traditions, nutrition, and identity of those who participate in it. The foundation of their sociocultural systems is the utilization of the natural environment and its biological

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resources. Subsistence foods constitute a significant portion of the diet of Native Alaskan communities, particularly in smaller villages where imported foods are not readily available or too expensive. Subsistence resources represent income; the combination of subsistence and employment are the foundation of the overall village economy.

Subsistence harvest patterns are seasonal, responding to biological cycles, proximity of resources, environmental conditions, and ease of travel and access. These patterns have a historical basis, and have been modified with the establishment of permanent settlements. Each community relies on specific subsistence resources to varying degrees, depending on their abundance, seasonal distribution and proximity to the village.

In the Northwest Arctic Borough, nearly all the lands are used for subsistence. They may not be used continuously, but will be used over time in one form or the other. Particular areas may only be used for a short period, but as in the case of beluga whale hunting or along caribou migration routes, an intense harvest period is economically and culturally important. Some areas have been traditionally used by particular families for generations, and are the locations of seasonal camps. Others are located along traditional transportation routes: the river corridors and the coast. Areas within a day's boat or snowmachine trip from a village are particularly sensitive to conflicts with other land uses.

Subsistence Maps: Through a series of village meetings, the Borough has prepared a detailed map of most of the important subsistence use areas within the Northwest Arctic Borough. Because of its size, this map is not easily reproducible and is kept at the Borough office in Kotzebue. These maps will be used in several ways:

- developing the boundaries of zoning districts
- identifying villages affected by proposed development activities
- applying policies and standards related to development in specific districts

It should be emphasized that because residents of the Borough use many areas, it is impossible to put all important sites on a map, and that the map may not represent all important sites. The best way to avoid land use conflicts is to work with Borough and village representatives to site non-traditional uses in appropriate locations.

For more information on subsistence activities and patterns, refer to Chapter 5 of the Background Report.

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Archaeological, Historic and Cultural Land Uses

The Northwest Arctic region has a long history of human habitation and is rich in archaeological, historic and cultural resources. Use of the area about 10,000 years ago by people of the American Paleo-Arctic Tradition has been documented. The Noatak River Basin was occupied by people of the Northern Archaic Tradition approximately 6,000 years ago and by people of the Arctic Small Tool Tradition between 400 B.C. and 400 A.D. Habitation of the region appeared to drop off between 400 A.D. and 1200 A.D.; Native people moved back into the upper River valleys between 1200 A.D. and 1400 A.D.

There are several known areas of major archaeological sites, including Cape Krusenstern, the Noatak River Valley, Onion Portage, Eschscholtz Bay, and the Choris Peninsula. Some of these sites have special status as archaeological districts or are on the National Register of Historic Places. It should be stressed that these are only known sites that have been documented through extensive research, and that there is a high likelihood of encountering additional extensive sites, particularly along the river valleys and sea coasts.

In addition to these sites, there are numerous sites of local cultural importance throughout the area that are obvious through village oral history, such as old village sites, locations of battles, and areas of other special events. Because of historic patterns of habitation, many are located along river valleys. Disturbance of these areas is of great concern to the Borough and local residents, and such sites should be avoided by potential development activities

Archaeological, Historic and Cultural Resource Maps: There are several sources of information on important archaeological, historic and cultural resources. These include the State Historic Preservation Office (SHPO), the Northwest Arctic Borough Coastal Management Program, and NANA Regional Corporation maps; the Borough recently mapped additional sites during village meetings. As with subsistence resources, it is impossible to put all important sites on a map, and that the map may not represent all important sites.

The best way to avoid land use conflicts is to work with the SHPO, NANA Regional Corporation, the Borough and village representatives to site non-traditional uses in appropriate locations.

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Non-Traditional Land Uses

Non-traditional land uses are concentrated near Borough communities, and in scattered locations on federal, state and private lands. Eleven permanent communities are scattered along the coast or major rivers. Many other seasonal and temporary sites exist throughout the Borough. A typical village will have a school, airport, single family housing and community building as the central focus. Usually each village has some small commercial enterprises which service the local residents with various goods. Village roads and trails are best suited to ORV traffic and few car or trucks are used outside of Kotzebue. A large network of seasonal (winter) trails connect the different villages. The only durable road outside of a village is the Red Dog mine to port road. The most urbanized area in the Borough is the city of Kotzebue. It is the regional center of the Borough with jet-capable paved airport, barge services, many commercial uses, hospital, regional service organizations, state and federal offices.

A very active mining district for hard rock minerals is located around Ambler and Bornite. Placer gold mining accounts for most of the activity, although the Jade mountain area produces stone commercially. Another major mining area is in the south part of the Borough around Candle, Klery Creek, the Kiwalik River, Buckland, Deering and Chicago Creek. This area produces gold and has produced coal in the past. The newest and most significant mining area is in the north east area of the Borough at Red Dog. This recent project produces zinc and lead in very large quantities; it is a world class modern operation and the associated land uses are more well defined than in other mining areas. A road links the mining site with the coast (called Portsite) where ore is stockpiled and shipped during the summer. This operation, when at full capacity, will double the United States output of zinc.

Other significant land and water uses include commercial fishing, reindeer herding, and recreation/tourism. Commercial fishing has had a small impact on land use in the Borough. A state operated hatchery is located northeast of Kotzebue 10 miles upstream of the mouth of the Noatak River. Almost all of the commercial fishing activity takes place in or near Kotzebue. Reindeer herding still occurs on lands in the southern part of the Borough. Aside from a few corrals this activity has resulted in little change or impact on the use of lands in the Borough. Non-resident recreation and tourism has the potential to grow, and can both benefit and adversely affect local residents. Tourism currently centers in Kotzebue, where it can be supported by local infrastructure and businesses.

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Non-resident recreation, in the form of sport hunting and fishing, float trips on rivers, and hiking, are taking place along rivers and in federal and state lands. These uses are increasing, and are beginning to cause conflicts with traditional activities and Borough residents.

Land Use Controls

Various types of land use controls are used by the region's land owners and government agencies. Land use controls attempt to ensure that a proposed activity is in the best interest of the public. They include permits, other regulatory programs, and local government mechanisms such as zoning and subdivision ordinances.

- **Permits** - Permits for land and water uses are the primary land use control, and include permits for materials, timber and minerals found on specific lands, and permits required for certain types of activities, regardless on whose lands they occur. Federal and state agencies, and Native corporations require permits for many types of activities on lands they manage. Some activities which involve dredge and fill, alteration of wetlands, air emissions, or waste-water discharge may require specific federal and state permits. The Borough's coastal management program is implemented through review and approval of federal, state, and local government permits.

- **Other regulatory mechanisms** - other regulatory mechanisms include lease sales involving lands, waters, or the resources they contain. Lease sales may be competitive or non-competitive but all address whether the sale is in the best interest of the public or private owners. The leases issued by public agencies and private owners may contain conditions which restrict the use of the land.

- **Zoning and Subdivision Ordinances** - the City of Kotzebue is the only municipality within the Borough that has a zoning ordinance, which identifies what types of land uses are allowed to occur in specific areas of the City. The City and the Borough each have a subdivision ordinance, which governs how parcels of land may be subdivided.

4.2.3 LAND USE PLANNING

There are several types of federal, state, and local land use plans that apply to lands and waters within the Northwest Arctic Borough which guide the management of those lands and waters. These plans are summarized below:

Federal Plans

- **U.S. Fish and Wildlife Service Comprehensive Conservation Plans** - the Department Interior has adopted Comprehensive Conservation Plans for each of the three refuges in the Borough: the Selawik National Wildlife Refuge, portions of the Alaska Maritime Wildlife Refuge, and the Koyukuk National Wildlife Refuge. These plans establish the management policies and actions for the each of the refuges. The Fish and Wildlife Service has adopted a minimal management alternative for management of all three refuges.
- **National Park Service General Management and Land Protection Plans** - these lands include the Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Kobuk Valley National Park and Noatak National Preserve. General Management and Land Protection Plans establish the management policies and actions for each of these units. In general, the management plans underscore the preservation of the natural features of the area and the continuation of the existing land uses in the area; they protect and interpret these cultural resources, work in cooperation with Native Alaskans, protect habitat for wildlife and fish, and protect the viability of subsistence resources.

State Plans

- **Northwest Area Plan** - The state of Alaska has adopted a plan for state lands in northwest Alaska. The Northwest Area Plan describes how the state Department of Natural Resources will manage state lands, including uplands, tide, shore and submerged land. The plan determines land classifications, land disposal locations, remote cabin areas, areas open to mineral entry, and guidelines for leases and permits. The plan encompasses an area much larger than the Borough, but it does include all state land within the Borough

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Local and Intergovernmental Plans

- **Northwest Arctic Borough Coastal Management Plan** - The Northwest Arctic Borough Coastal Management Plan was developed and adopted prior to formation of the Borough. The Borough assumed responsibility for local administration of the plan from the NANA CRSA as part of its home rule powers. The plan guides development on private, state, and federal land and waters. At the time it was approved, the Borough coastal plan was the only planning document in effect in the Borough which was developed primarily by the people of the Borough. For nearly five years, the consistency review process was the only formal permitting and review process in operation for the entire Borough. The plan is used to make a local consistency recommendation on actions taking place on private, state or federal lands which require state or federal permits.
 - **Kotzebue Comprehensive Plan** - the City of Kotzebue has prepared a comprehensive plan as the basis for adoption of area-wide planning, platting and land use regulations. The plan was prepared in 1982, and covers the area within Kotzebue municipal limits.
-

4.3 LAND USE SCENARIOS

This section presents three alternative futures for the next 25 years, not particularly as forecasts, but as possibilities of what might happen given certain economic and political assumptions. The goal of presenting alternative futures is to better prepare the Borough for the future. By anticipating possible future events, the Borough can be better prepared to ensure that whatever happens fits within the goals and wishes of local residents. The three alternative futures reflect a Low, Best Guess, and a High Growth scenario.

The Low Scenario

With regard to land use and ownership, a Low Scenario would have many potential negative consequences for Borough residents. The assumptions for the Low alternative are presented in Table 3-3. Without new development, there would be no dramatic changes in land use patterns. However, it is likely that decrease in revenues to both the Borough and NANA Corporation would affect land management, and perhaps require

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selling land to raise revenues. With a rising population, dependance on a cash economy, and more demand on animal and fish resources, many of the Borough residents would find it difficult maintain to a complete subsistence lifestyle. The viability of many villages would be threatened, as state and federal grant programs decline or end. Kotzebue would gain in population, as village populations decline, increasing demands on the infrastructure (water, sewer, electricity, housing) in Kotzebue while reducing such demands in the villages.

Best Guess Scenario

The most likely scenario involves the continuation of the status quo, with gradual steps taken to increase non-renewable resource extraction. The important outcome of the Best Guess scenario is the continued ability of area residents to enjoy traditional subsistence pursuits, combined with some additional non-renewable resource changes in land use. This could also be termed the "hang-on" scenario, since no public program would be safe from reductions in funding or complete cancellation, and expanded or new programs would be unlikely. Changes in village land use associated with growth would occur, and should be factored into planning. With astute leadership and careful coordination, conditions in the Borough would remain stable and perhaps gradually improve.

The High Scenario

A high scenario is usually considered a "best" scenario, filled with intense economic activity and positive secondary benefits. While cash economy and service program opportunities would improve, increasing social pressures will affect traditional cultural and subsistence values and use of resources.

This high scenario would bring many changes to the borough, not all of them desirable. Opportunities for local employment and revenue would increase, along with the potential for creating more locally-owned businesses. Increased state and federal revenue could be used for programs to improve the standard of living for borough residents. However, increased development, the influx of outsiders, and availability of cash could also increase social pressures and pressure on subsistence resources and traditional values.

This scenario would create substantial changes in existing land use patterns. Resource development and tourism could increase conflicts with traditional land uses. Growth in

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villages would require expansion, along with lands for housing and infrastructure. Borough land use controls and planning activities would have to be adjusted to anticipate and control land use.

4.4 BOROUGH LAND USE AND MANAGEMENT STRATEGIES AND IMPLEMENTATION

The Northwest Arctic Borough must seriously consider the need to adopt regulations and undertaking planning efforts in the following areas:

- **management of borough lands** - how municipal entitlement lands will be selected and managed
- **land management regulations** - zoning, platting, building codes, and other forms of land management regulations
- **land use planning** - coastal management, planning for villages, and participation in planning with state and federal agencies

4.4.1 MANAGEMENT OF NORTHWEST ARCTIC BOROUGH LANDS

Borough Land Selection Policies

Upon formation, a municipality is entitled to select land from the State of Alaska. The Borough has selected about 133,000 acres of land and will be able to select another 150,000 acres under House Bill 243. State lands eligible for selection must be classified as Vacant, Unappropriated and Unreserved lands (VUU). Municipal selection only entails the surface rights (which includes gravel) to the land and not the subsurface rights (minerals and oil and gas). Once land has been selected by the Borough, the selections are submitted to the Department of Natural Resources (DNR), which reviews the selections against Borough entitlement and other factors such as land classification. When approved, the selected lands are surveyed, and then conveyed to the Borough, which receives fee simple title.

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Borough lands have been selected for a variety of reasons. The DNR requires that each selection be accompanied by a justification that the land is capable of supporting municipal purposes. The state recognizes justifications based upon areas selected for aiding community development or expansion, generating revenue through sales or leases, providing public recreation opportunities and traditional uses if such uses are an important part of the overall economy within the municipality.

Selections which have been approved and conveyed by the state are under the control and management of the Borough. The Borough is responsible for the activities on these lands. The use of these lands should conform with the original selection objective. The majority of Borough land selections are justified as being for traditional uses. This term is not defined by the state but is generally accepted to equate with subsistence related uses. The Borough should keep a record of why a particular area was selected and strive to manage the area in compliance with the original objective for selection.

Each selection block should have an inventory of the resources and uses within the area. Selections with useful stands of timber, pockets of gravel or potential for locatable minerals should be identified. Some areas may have been selected because of current uses. Areas with preexisting activities should be noted. State leases and permits "run with the land" and will be transferred to the Borough to administer. Unauthorized activities should be noted. A decision about what to do with unauthorized uses will have to be made. Some existing uses may be allowed to continue without Borough approval. Areas which have potential for mineral development should be noted. The minerals belong to the state and access to them for prospecting (also known as "locating") is protected by federal and state statute. Access to and development of these minerals as part of a commercial operation may require approvals from the Borough.

A permit system or whatever controls the Borough applies to its lands or land owned by others will need to be based on strategies which are intended to achieve goals and objectives which are accepted by the residents of the Borough.

Borough Land Selection Strategies

- 1. The Borough needs to develop a strategy for the selection of the remaining municipal lands to which it is entitled. Borough land selection should be**

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coordinated with NANA and KIC Corporations, to take into account existing ANCSA over-selections and future management implications.

2. Selection of additional Borough lands should evaluate the following land categories:

- State lands where there are use conflicts with villages - river corridors and important subsistence areas
- economic development lands - land where there is a potential for economic development, either to generate borough revenues or increase Borough land use control
- transportation lands - land likely to be part of a transportation corridor (railroad or road) or facility, either to generate borough revenues or increase Borough land use control
- village expansion lands - lands near villages that could be used for village expansion (housing, infrastructure, transportation facilities)
- ANCSA over-selection lands - high-value lands in an over-selection category for NANA and KIC, that could be used to protect subsistence or for economic development

Borough Land Management Strategies

1. The Northwest Arctic Borough needs to develop strategies for the management of Borough-owned lands. Several detailed management choices, some of which conflict with each other, are presented in Appendix A

The Borough may wish to establish a joint management agreement with NANA Corporation. NANA has been actively managing its lands for several years and has many of the tools and skills necessary already in place. Since many areas of borough lands adjoin NANA lands the consolidation of management is a good concept. The Borough may consider a different approach to the long-term

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management of lands it receives. The Borough could consider sale of its lands in increments over the long-term to the NANA Corporation.

2. **The Borough will need to make the following decisions regarding Borough Land Management Strategies.** These are summarized below, with detailed options presented in Appendix A:

- Who gets to use Borough lands
- What uses are allowed on Borough lands
- Compensation for Use of Borough Lands
- Permitting and approval authority for use of Borough lands
- Public Notice of Use of Borough Lands
- How Uses of Borough Lands are Treated
- Permits For Use of Borough Lands
- Administrative Considerations for management of Borough lands
- Use of Standard Stipulations with permits for use of Borough lands
- Leasing of Borough Lands for long-term uses
- Monitoring activities on Borough owned property

4.4.2 LAND USE CONTROLS FOR NORTHWEST ARCTIC BOROUGH

The idea of land ownership is not part of the traditional Native way of thinking about the land; people are responsible for the health of the land. Western European ideas are based on past history where kings and emperors owned everything and passed ownership of land down to others, who could do as they wished and didn't take favorably the opinions of others. Despite the mix of cultural beliefs, people remain concerned about the responsibility for what happens on the land, especially in the longer term. Land ownership, land surveys, and land use laws are affecting the way people live and the character of the villages in the region. Borough residents want to have meaningful input from the community about the use of lands in the village where they live and in nearby areas, regardless of who owns the land.

Federal, State and Local (Boroughs and Cities) governments have the power to regulate and restrict the use of private property. Planning, land use, building codes, subdivision regulations and environmental laws are some examples of this authority.

Subdivision of Land

Platting is the process that governs the creation of new parcels of land, and the modification of existing parcels. Its purpose is not to determine where land uses occur, but to assure that lots are created in accordance with community standards, and are properly surveyed and recorded through a public review process. The Borough has a rudimentary platting ordinance, but given previous site control problems in villages, and recent land use conflicts in other areas, an improved ordinance is needed.

A basic platting ordinance should have the following components:

- administration - outlines how the platting ordinance will be administered
- general provisions - sets out the purpose and scope of the ordinance, and general procedures for when it applies, enforcement, fees, and amendments to the ordinance
- definitions - provides a legal definition of key terms in the ordinance
- plats - outlines requirements for preparation and submittal of preliminary and final plats
- subdivision application procedure and approval process - classifies types of subdivisions, describes the application process, procedures for review and approval of plats, and other procedures such as applying for vacations and variances to the development standards
- subdivision development standards - establishes standards for the subdivision of land, such as streets and rights-of-way, sewer and water, and lot size requirements

Appendix B presents a draft subdivision ordinance that could be modified for Borough use.

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Zoning of Land

Basic concepts and parts that make up a traditional zoning ordinance are presented below. Key words and concepts are in **bold face**.

Concepts

- **Zoning** is the most widely used system of land use control in existence. It separates incompatible land uses into different areas called **districts**. The basic idea is that a physical separation between certain uses will reduce conflicts and lessen dangerous situations. Another principal purpose of controls is to plug local people into the development process at an early stage and to provide notice prior to an activity taking place.

- **Uses** are the activities and development that are allowed in the district. Uses are grouped into the **districts** based upon their compatibility with each other. The uses in each district are further divided into approval categories. Sometimes uses are only permitted if they comply with certain requirements, these are usually referred to as conditional uses or special exceptions. The decision to allow conditional uses is made by the planning commission and requires a public notice and public hearing to provide the community and neighbors an opportunity to voice their opinions.

Allowed uses are those activities which are compatible with the surrounding area and other uses in the district. In many ordinances no review is required of these uses.

Administratively approved uses require a short administrative review and limited public notice. The approval may include some stipulations by the administrator to ensure that the use will be compatible with the area. The public notice and approval criteria are often less complex than for approvals which need Planning Commission approval. Administrative approvals can be set up so that they may be sent to (elevated) the Planning Commission for review and approval.

Conditional uses are those types of development or activities that can be compatible with the surrounding area and uses if it is sited and conducted properly.

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A general notice is usually given when a request is made to establish a conditional use. The planning commission conducts a hearing and measures the proposed use against criteria which are listed in the ordinance. They also consider comments people make at the hearing and the comments received during the public notice. Conditional uses are very specific and the planning commission will usually attach specific conditions unique to their approval of the request.

Administration

A large part of the ordinance is devoted to the administrative details. This section establishes the mechanics of how things get done and who is responsible for what job. **Definitions** and **notice** requirements are an important part of this section. The procedures for issuing permits, granting approvals and enforcement, the process to amend both the text and the map are spelled out. Courts will sometimes overturn land use decisions because the process outlined in this section is not followed.

Map

The zoning map is an official map of where the districts are physically located and where the lines are drawn are extremely important. **Rezoning**s establish, by changing the zoning map, new or expanded districts in which many different uses occur. A Rezoning follows a process similar to conditional uses but needs the approval of the Borough Assembly under the ordinance process. The establishment or modification of the district lines on a base map of a borough or city can be a difficult process.

Dimensions

This part of the ordinance establishes size requirements for uses of specific parcels of land (also called the zoning envelope.) These are usually things like **setbacks**, **lot sizes**, **height limitations** and **parking requirements**. The sometimes **variance process** is used to allow people to bend or be excused from the rules in this section. The section addresses concerns about fire safety, appearance and density of development. Because the Borough would not

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presently exercise zoning authority within Kotzebue, this part of the ordinance could be omitted, until such time the Borough adopts zones for high density areas.

Setbacks are the minimum distances that structures may be located away from streets, lot lines and other buildings. This controls the amount of open space around buildings. This open space is used for outside storage of vehicles and equipment. The separation between buildings is important in fire control and emergency access.

Height requirements govern how high buildings can be built. High buildings can block sun light, put too many people on one lot and be a problem if they catch fire. High or bulky building can also change the feel, appearance and character of a neighborhood.

Lot sizes are the minimum requirements for a parcel of land in a individual district. The amount of land needed for a single family residence may be different for the amount for a commercial or multifamily use.

Other Considerations

A zoning or land management ordinance can incorporate a variety of other measures to protect the public interest. One example is a requirement for a **master plan or site plan** for a specific development proposal prior to consideration of approval (eg. as a conditional use or rezoning) by the Borough. The master/site plan would have to address specific concerns identified ahead of time, and require approval by affected villages. Once approved, uses in the master/site plan would be considered allowed uses within a zoning district.

A second consideration is whether the Borough wishes to **incorporate all or portions of the coastal management program** into a zoning or land management ordinance. This could strengthen the Borough's use of its coastal management program. Other options include use of the CMP as an overlay district in the comprehensive plan, and incorporating the enforceable policies as conditional use requirements or performance standards for certain types of uses.

BOROUGH LAND USE CONTROL STRATEGIES:

Subdivision Ordinance

- 1 - Amend or replace the existing Borough subdivision ordinance based on the draft presented in Appendix B**
- 2 - Develop standards to guide Borough approval of plats**
- 3 - Establish standards to guide decisions on the design of subdivisions. These will address lot configuration, setbacks, road standards, and other design features. The villages should decide what types standards are appropriate for their villages.**
- 4 - Establish standards for access requirements for subdivisions, both within the villages and outside the villages. What is acceptable access may include road, boat, or air access; the Borough may wish to apply different standards for subdivisions outside the villages.**
- 5 - Develop a two step platting process that provides a preliminary plat for Borough review**
- 6 - Identify special information requirements to be provided by subdividers. These may include sites of cultural and subsistence importance, traditional access easements, and other local concerns.**
- 7 - Establish a formal role for the villages and other regional organizations in the review and approval of plats**

Zoning Ordinance

The Northwest Arctic Borough is a vast area with many established communities and land uses. The application of land use controls to this will not be easy or even popular to some of the residents. However, the Borough must take this step to assure maximum local input into proposed development.

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- 1 - The Borough should move quickly to adopt a simple yet comprehensive system of land use controls based upon a traditional zoning approach. This incorporates specific zoning districts, with allowed, and conditional and prohibited uses, and a link to the coastal management program.
- 2 - The system will divide the Borough into six types of districts -- Subsistence Conservation, General Conservation, Commercial Recreation Conservation, Resource Development, Village, and Transportation Corridor:

- Three districts, the Subsistence Conservation, General Conservation, and Commercial Recreation Conservation Districts, will cover most of the land in the Borough and be oriented towards conservation of habitat, renewable resources and protection of the existing subsistence uses.

The Subsistence Conservation District is intended to conserve the ecosystem, plant and animal resources, and access to and use of the resources for subsistence purposes. It would prohibit development that would negatively affect subsistence uses.

The General Conservation District would encompass the undeveloped areas of the Borough outside the boundaries of other districts. Intended to conserve the ecosystem, plant and animal resources important to subsistence, resource development could be accommodated on a limited scale.

The Commercial Recreation Conservation District would accommodate commercial recreation activities as long as they are consistent with the conservation of wildlife habitat and other resources in the district, and the effects on subsistence could be properly mitigated.

- The Village Districts would cover the boundaries of each of the villages in the Borough. The Borough will need to work with villages to determine what types of uses and approvals will be appropriate in each village. It will reinforce traditional lifestyles and values, and will provide protection from unwanted uses and some community control over development. This district

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will in some cases establish dimensional requirements to ensure safe conditions in the community.

- The Resource Development District would be applied to areas to allow major resource development such as Red Dog. This district will provide areas in the Borough for the development of natural resources and industrial uses. This district could be combined with use of a site plan or master development plan, so that once an area is designated for these uses, the general development for the use can proceed without the need for lengthy reviews and approvals.

- The Transportation Corridor District is intended to allow the Borough some control over the location and development of major transportation corridors within Borough boundaries (such as road, railroad, or pipeline projects). It would provide for transportation facilities associated with a specific project or development, and require a Master Plan for the facility prior to development.

3 - The zoning ordinance should contain the basic components previously outlined:

- allowed, conditional, and prohibited uses by district
- administrative procedures
- identification of districts and preparation of a zoning map
- dimensional requirements
- site plan, master plan, and coastal management requirements

4 - Develop appropriate standards to be applied to allowed and conditional uses within the seven zoning districts. These could take the form of policies, performance standards, and/or stipulations attached to these uses.

4.4.3 LAND USE PLANNING ACTIVITIES

There are three types of planning activities where Borough action is recommended: coastal management, planning with villages, and participation in planning with state and federal agencies.

Northwest Arctic Borough Coastal Management Program

Prior to adoption of the Borough Comprehensive Plan and Land Use Regulations, coastal management was the Borough's only active form of land use regulations. Under the guidance of the federal Coastal Zone Management Act of 1972 and the Alaska Coastal Management Program, the Borough's coastal management program was prepared by the NANA Coastal Resource Area, approved by the State in 1986 and by the federal government in 1988. It is applied implemented through review of activities requiring local, state and federal permits during a coordinated state consistency review process. The coastal management plan establishes boundaries that make up a coastal area, within which certain types of proposed activities are reviewed. The coastal area is further separated into General Use, Intensive Resource Use, and Sensitive Use areas, with specific policies that apply to activities in those areas. Proposed activities must demonstrate their consistency with the applicable policies; during the consistency review, the proposed project is reviewed and determined to consistent, consistent with conditions, or not consistent with the Borough coastal management plan. The consistency determination can be appealed through a process called "elevation".

For several years prior to adoption of the Comprehensive Plan, the Borough experienced limited success in using its coastal management program. The Borough has recognized that effective use of the program to achieve its goals and objectives requires an understanding of the state permitting and consistency determination systems. In addition, while a local coastal district like the Borough is given a strong legal role in the process, it also has the burden of making a convincing case for its position. Proposed activities on state lands and waters, and in federal waters are likely to remain the major areas where the coastal management program will be applied.

Recommended Coastal Management Strategies

Three Borough actions related to coastal management are recommended:

- 1 - proceed with the process to amend the Borough coastal management program to 1) adjust the coastal boundary boundary, and update the Resource Inventory and Resource Analysis; 2) review the effectiveness of current coastal management policies and revise where necessary; and 3) revise the implementation chapter to reflect the transition to Borough

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administration of the program. State funding is available for such an effort, and the Borough should continue applying for funds through the Division of Governmental Coordination and Department of Community and Regional Affairs

- 2 - **increase effectiveness in making coastal management consistency recommendations, through training and more frequent coordination with agency staff and other coastal districts**
- 3 - **evaluate the need for and pursue special project funding for Areas Meriting Special Attention or other projects (the Bristol Bay CRSA used such funds for the Nushagak-Mulchatna Rivers Recreation Plan).** New federal and state funding guidelines make more money available for special projects by coastal districts

Planning with Villages

A traditional role for Borough government planning staff is to provide planning assistance to communities upon request. The Northwest Arctic Borough will look to the villages for direction on providing planning assistance. Several potential areas have been identified from meetings held in the villages on the Comprehensive Plan, the Regional Strategy Conference and from dialogue with regional institutions. These areas are summarized below:

- **site control** - construction for public housing and community facilities are sometimes complicated by confusion regarding land ownership and survey boundaries. The Borough should provide assistance by adopting subdivision standards, or other measures setting site control standards.
- **village zoning** - several applications have been mentioned: separation between incompatible land uses (eg. fuel storage and housing), and setting aside appropriate areas for future growth needs (eg. housing and community facilities). The Borough should work with those villages interested in community land use controls to develop workable regulation which are customized for the particular community.

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• **land trades** - finding land for village expansion that is both suitable and available is a common problem in villages. In addition to owning school sites and lands, the Borough will receive title to other lands. There may be instances where the Borough can trade its lands to provide opportunities for expansion of community housing and facilities. The Borough should work with the villages to help facilitate land trades that are in the best interests of the community.

Recommended Village Planning Strategies

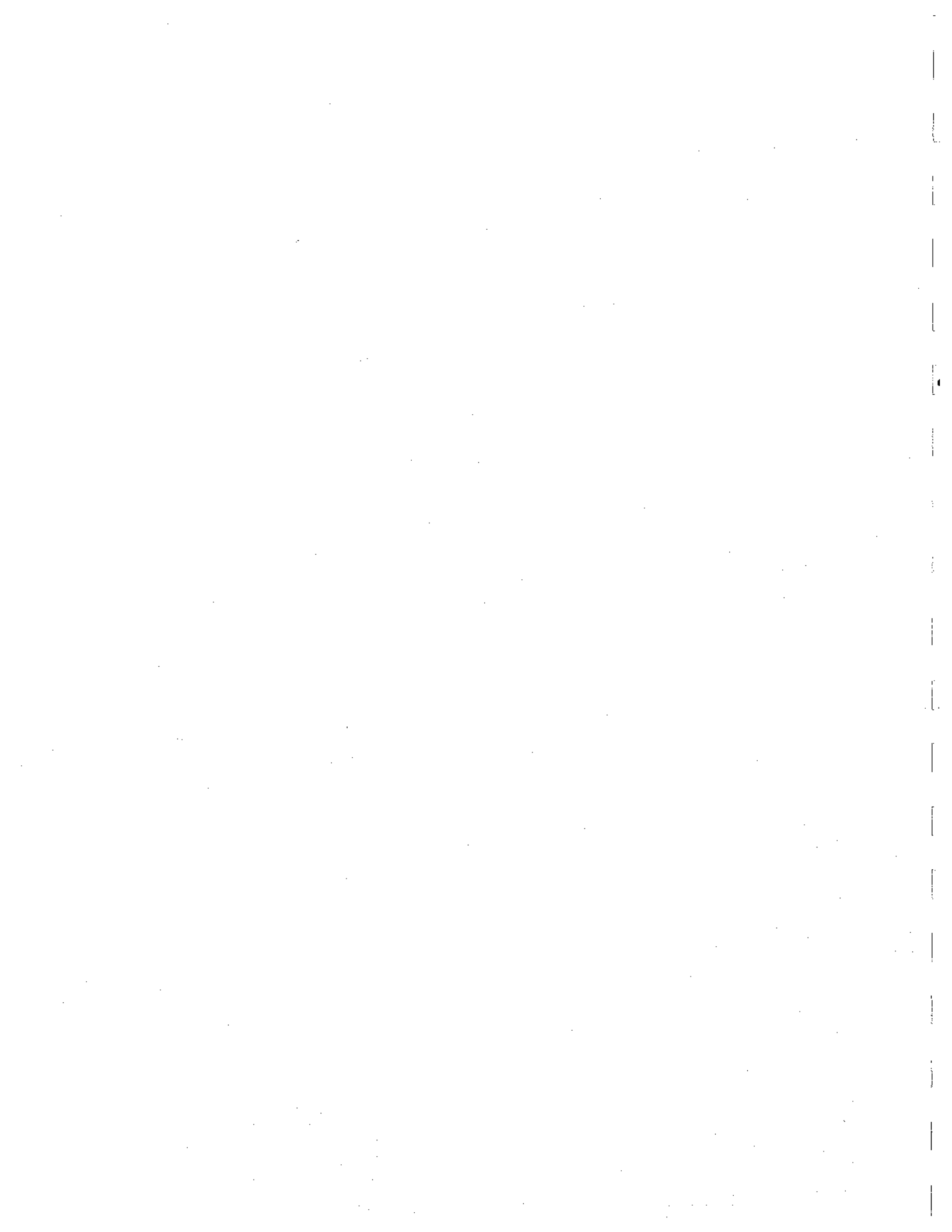
- 1- The Borough should continue to seek guidance on appropriate levels of planning assistance to villages, through the Regional Strategies, village meetings and other forums.**

State and Federal Agency Planning Opportunities

As the dominant local planning power in the region, the Borough will continue to be provided with opportunities to participate in State and federal planning, such as Area Plans, OCS lease sales, oil spill contingency/response plans, and federal park and refuge management plans. Many of these plans are updated on a regular basis.

Given recent Borough concern regarding applications for private activities on state lands, the state area planning process is of particular significance. If other mechanisms are not available, it is worth considering asking the Department of Natural Resources to amend the Northwest Area Plan to comprehensively address recreation and commercial development on state lands, rather on the current piecemeal basis.

Finally, the Borough should take the initiative and suggest cooperative management planning to address issues where federal, state, Native, and Borough lands are involved. An example is a cooperative river corridor management plan to address recreation and traditional uses (similar to the Nushagak-Mulchatna Rivers Recreation Plan). Federal agencies may share Borough concerns and support such a plan; sources of funding such as coastal management may also be available.



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Recommended Borough State and Federal Planning Strategies

- 1 - The Borough should press for a significant role in these planning processes, and use that role to address regional and village concerns.**
- 2 - The Borough should take the initiative and suggest cooperative management planning to address issues where federal, state, Native, and Borough lands are involved.**
- 3 - The Borough could work with the Corps of Engineers over the long term to develop a General Permit procedure for activities in Borough villages.**
- 4 - The Borough should investigate adopting building codes appropriate for an arctic environment; the code could be applied to standards for upgrading HUD housing, to the benefit of villages.**

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN

5.0 ECONOMIC DEVELOPMENT ELEMENT

5.1 Introduction

5.2 Brief Description of the Regional Economy

Subsistence

Barter & Trade

Reindeer Herding

Traditional Arts & Crafts

Trapping

Commercial Fisheries

Timber

Recreation & Tourism

Commercial

Transportation

Government Services

Non-Renewable Resource Extraction

5.3 Employment & Income Characteristics

Regional Employment & Income Characteristics

Local Employment & Income Characteristics

5.4 Borough Strategies for Economic Development

5.1 INTRODUCTION

This chapter presents a brief overview of the economic activities in the Borough which includes the conventional cash economy and the traditional subsistence based non-cash way of life. The information presented describes an economic system which is only partially dependant upon cash. The importance of coordinated, cooperative efforts in the development of an expanded cash economy in cooperation with subsistence is emphasized. A cash economy should not supplant the subsistence way-of-life. The new economy must enhance and support subsistence and traditional values as a permanent part of the economy of the Borough.

There are more technical reports that have documented quantitative aspects of the regional economy. This portion of the comprehensive plan focuses more on general descriptions of the economy.

5.2 BRIEF DESCRIPTION OF THE REGIONAL ECONOMY

Subsistence

Archaeological remains in the Borough span over 10,000 years. During almost all of this period the only economy of the region and people was what is known today as subsistence. The traditional subsistence activities remain a significant part of the day-to-day livelihood of the Borough residents. More than 70 percent of the region's residents rely on hunting, fishing and gathering for over half of their diet. The pursuit of subsistence activities continues to provide the foundation for the cultural values and the economy of the Borough and the communities within it. Subsistence activities are very sensitive to disturbance and the track record of preserving and continuing subsistence activities and native culture has been marked by significant failures (see the Background Report for more details on subsistence).

Barter & Trade

Barter and trade have been an important and necessary ingredient of the culture of the area since the first human occupation. The best documented example of the barter and trade system prior to European contact is the trade fair at Sisoalik. In July, the people of the region moved to Sisoalik to participate in a trade fair, in which some 2,000 to 3,000 people from all parts of northern Alaska and Russia were involved. The Russian

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Chukchis were frequent traders at Sisoalik and probably passed goods and information on to Russian traders in the mid 17th century. European voyages of exploration were often coupled with the pursuit of commerce. By 1833 the Russian-American Company had established a trading post at St. Michaels as a part of the Russian effort to tap into the existing trade and barter system.

In 1847 the British who had explored the region looking for a Northwest Passage backed up their activities with a Hudson's Bay Company post at Fort Yukon. Contacts with European trading vessels became more common during the mid-1800's. Trading in this early period usually involved the exchange of furs and ivory for European high-technology of the time.

This tradition of the exchange of local resources and skills for the goods and products of the industrialized world has continued into the present day. Much of the cash acquired in today's economy is converted to hardgoods such as clothing, equipment and tools which are used in pursuit of subsistence. The present city of Kotzebue, which is located near the traditional summer trade fair site, still serves as the entryway into the region for most conventional goods and services. Since opportunities in the villages for a conventional cash economy are limited, the traditional exchange and barter system remains very strong. Much of the exchange involves the direct trade of skills or services for goods rather than cash.

Reindeer Herding

The latter half of the 19th century was a time of hardship for the people of the Borough. Measles, influenza, diphtheria and other diseases introduced from outside the region had taken a heavy toll on the people. The caribou population also declined during the 1870's in several areas. Declines in the seal and fish resources accompanied the loss of the caribou. This loss of the part of the subsistence resource led to several famines between 1870 and 1885. The combined death toll may have exceeded 50 percent among the local population.

In response to this disaster, the Department of Interior Office of Education initiated plans to import reindeer and establish self-sufficient reindeer herding operations. It was hoped that reindeer husbandry would provide both food and marketable products. Reindeer herding was initially successful and several villages in the Borough participated in the program. The reindeer project suffered a market crash during the depression of the 1930's. The herds continued with a low level of management until the early 1980's when

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NANA Corporation became actively involved in management and marketing the resource. The scattered herds were recombined and both meat and reindeer horns were marketed. NANA is no longer involved in reindeer herding, and other herds continue at low levels.

Traditional Arts and Crafts

Native arts and crafts have been sold to visitors and collectors for decades. The only long-term program in the Borough to professionally market and sell arts and crafts is conducted by the NANA Corporation through the NANA Craft Company in Kotzebue. Arts and crafts are screened for quality, and the corporation hopes to make money on the mark-up on goods purchased. Demand for quality arts and crafts should continue to grow, and organized marketing efforts which reward the local artisan for his/her time will help diversify the economy.

Trapping

Trapping and the fur trade has always been importance for a source of trade goods and living necessities for the people of the Borough. The fur trade as a source of income assumed importance during the early 1900's until the mid 1930's when the depression drove prices down. Many residents still trap both for food and fur. The demand and price for many different types of furs has shown unpredictable cycles. A few furs such as wolverine and lynx have exhibited price stability. The Marine Mammal Protection Act limits the sale of raw furs from marine mammals. Furs and skins from these animals must be made into a product prior to sale. The Borough has many residents who turn their raw furs into garments for sale in retail outlets or to other residents. Small fur items for the tourist trade such as face masks are produced and sold in Kotzebue. People in the villages still depend upon furs and meat from trapping. This use of furs, skins and meat considerably offsets the cost of living for many Borough families.

The future of commercial trapping is in jeopardy, as owning fur garments is becoming socially unacceptable in many urban centers. Urban dwellers are concerned over the potential loss of animal species and alleged suffering of animals at the hands of trappers. There is little understanding or rural and traditional lifestyles.

Commercial Fisheries

The vast majority of the fish harvested in the Borough are used by the residents for food. In recent years several small commercial fish enterprises have been conducted. These commercial fisheries supply a significant part of the part time wage employment and income for the western area of the Borough. An Alaska Department of Fish and Game,

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Subsistence Division survey in 1987 for Kotzebue reported that participation in commercial fishing and processing was widespread, but of short duration. Major commercial fisheries are described below:

Salmon: A salmon fishery has operated in Kotzebue for several years. The main target species was Chum salmon; both fish and eggs are exported. An experimental salmon hatchery was built at Sitkisuliuq Springs off the Noatak River in the early 1980's, by the Alaska Department of Fish and Game. There is currently a proposal to the Alaska Legislature to fund expanded production at the hatchery; in order for this to occur, it may be necessary to establish a local non-profit aquaculture corporation to run the hatchery.

Whitefish: An experimental whitefish fishery was recently discontinued for lack of a target market. Test markets in California and other locations were successful, however. This fishery is much less seasonal and will operate for a longer period of the year than the salmon fishery. This fishery could establish an employment opportunity with a high value product which is more widely available within the Borough.

Pike: Selawik has occasionally made local pike available for regional residents to buy. While small scale and infrequent, these fish are very popular locally.

Timber

Despite its location on the Arctic Circle, the Borough has some significant areas of forested lands. Timbered lands are located primarily along the river valleys in the upper Kobuk River area and along the lower Noatak. The growth rate for trees this far north is very slow and replacement of mature trees will take much longer than other areas of Alaska. Most harvested wood comes from private land near the villages or is gathered as driftwood by the people who live along the coast. All of the timber harvested is used locally for fuel or building, such as house logs. The availability of large diameter trees near some villages is limited and residents have to go further to find logs for home construction.

The use of timber for fuel and building is very important to the residents of the Borough. The cost of transporting conventional lumber makes its use the exception in the Borough. However, the remoteness of the timber resources from outside markets and transportation facilities makes large scale commercial harvest unlikely. The state of Alaska has no

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plans for a commercial harvest in the Borough, but has designated forestry a secondary use on forested lands. This designation is to allow continuation of forest resource production to meet user demand for personal use. Much of the timber harvested for personal use is not sold but given to those who want it. No data is available on the amount or cash value of the wood harvested in the Borough. However, the value of the continued availability of this resource to the residents of the Borough is extremely high.

Recreation & Tourism

The use of areas in the Borough for recreation has been increasing in recent years. Kotzebue is the major hub for most of the tourist activity from tour operators. Tour packages to Kotzebue have been a popular add-on for Alaska-bound tourists for decades. Kotzebue has a hotel, bed and breakfast, museum, and information centers for federally managed lands. The summer tourist season is short beginning in late May and lasting until the end of August. Much of the locally produced native arts and crafts are sold at this time to the tourists on package tours.

The establishment of many large federally managed areas under the Alaska National Interest Lands Conservation Act (ANILCA) in 1980 has drawn attention to these areas in the Borough. Visitation to these generally remote areas has increased as a result of the designations as National Parks, Monuments and wildlife areas. These new federal parks have encouraged a number of independent travelers, not part of an escorted tour. They usually stay longer than the one-night package tour to Kotzebue, but they sometimes spend less money locally (a major exception being local air taxi operators).

The direct economic impact of tourism in the Borough is difficult to assess. Visitor day data compiled by the federal agencies also includes subsistence users. This means that a subsistence user who makes 30 trips into an area is counted as 30 visitor days. The conventional tourist package traveler is limited to a set agenda and the numbers of tourists are limited by airplane seats and rooms available. Categories of tourist activities outside of Kotzebue are discussed below.

Guides: Several registered guides operate in the Borough. Much of the activity during the hunting season is based out of Kotzebue in the west and out of Bettles or Fairbanks near the east side of the Borough. Recent Alaska Supreme Court decisions have thrown the status of guides into turmoil. The operation of guides in the area has brought little direct economic benefit to the residents of the Borough. Most supplies and food is purchased outside the Borough and little or

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no cash or goods is left behind. The killing of animals exclusively for their horns or skin is considered a wasteful practice by the residents who depend upon game for subsistence; guided hunting and fishing activities can create significant interference with subsistence, and result in competition for limited resources.

Lodges: Only one lodge operates within the Borough outside of villages. It is on the Wulik River east of Kivalina. The lodge is primarily a sport fishing operation. Some supplies are purchased in Kotzebue but the lodge is staffed and operated by people from outside the Borough. The small economic benefits from this operation are offset by the disturbance and removal of the fish resources of the Wulik which are utilized for basic living needs by the people of Kivalina and Noatak. There are now a few lodges operating in villages, including Shungnak and Ambler.

Individuals: Private individuals are coming to the Borough for recreation as news of the opportunities spreads. Many of these people utilize the services of an outfitter for their first excursion, but may return on their own once they gain familiarity with the area. Most purchase supplies outside the Borough and the most direct economic impact is to the local air carriers.

There are no organized programs in the Borough for tourists to visit villages outside of Kotzebue. Village tourism can be a sensitive subject, since many communities would rather have their privacy, than be subject to visits from strangers. If carefully organized and guided, however, small-scale programs could add important dollars to local economies. To the south in the Bering Straits region, the villages of White Mountain and Shaktoolik established lodges in the community operated by the local village corporations. The Community Enterprise Development Corporation (CEDC, Inc.) operates village tours to St. Lawrence Island and other rural locations.

Recreation opportunities are important for many residents of the Borough, especially those who reside in Kotzebue. Most residents participate in some form of outdoor recreational activity and enjoy the access to remote areas. Many of these activities are hard to distinguish between traditional cultural and subsistence pursuits; and contribute to local and regional economies in the same manner, primarily in the purchase of fuel, local supplies, and air taxi service.

Commercial

The private sector is the smallest segment of the borough's economy, and focuses on providing goods and services to the public sector. For example, private companies are collectively the third, fifth and seventh largest employers in Kotzebue (Table 5-1):

Table 5-1 Kotzebue-based Employment:

- 1) Northwest Arctic School District - 420 employees;
 - 2) Maniilaq Association - 202 employees;
 - 3) Retail and commercial stores - 101 employees;
 - 4) City of Kotzebue - 86 employees;
 - 5) Airline companies - 72 employees;
 - 6) State of Alaska - 59 employees;
 - 7) NANA Corporation - 44 employees.
-

Borough officials estimate that about 200 businesses operate within the region. Major private companies include the NANA Regional Corporation, NANA's operations at the Red Dog Mine, Kikiktagruk Inupiat Corporation (the village corporation for Kotzebue), barge and airline companies and retail and commercial stores. The city of Kotzebue is the main commercial hub for the Borough. Through this community pass most of the goods and supplies which are imported into the Borough.

Transportation

In an area as large as the Borough, transportation plays a major role in the economy. People, goods and services must be transported great distances. The Borough does not have any permanent inter-village road system and most materials must travel by water or air to reach their destination. The Alaska Department of Labor statistics for Kotzebue list transportation consistently as the third largest private sector employer. Employment in this sector is somewhat seasonal with the highest levels of activity in the summer months.

The Borough is served by two barge lines, Alaska Tug and Foss, who bring freight to Kotzebue. Because of shallow water the freight is off-loaded on smaller vessels, operated by Arctic Lighterage, and brought to shore. Alaska Airlines operates jet passenger service from Anchorage daily and for an international route to the Soviet Far East. Several local carriers offer passenger and freight to the outlying villages. MarkAIR

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hauls passengers and cargo into Kotzebue year-round. Baker Aviation offers charter service to Russia.

Winter roads are marked for snow machine and ORV travel. During late winter numerous temporary trails connect the villages within the Borough, and support smaller movements of goods and services (one exception is the hauling of gravel over snow and ice roads).

Government Services: Municipal, State and Federal Government; Military, Health, Education

Local, state and federal government are the largest component of the regional and village cash economies. Government is the largest employment category, and is a vital part of the regional economy. The region should not be characterized, however, by an over-supply of government agencies and organizations; rather, the region has the same governmental services as other areas of Alaska, with a disproportionate lack of private services.

An important trend has been the gradual transfer of power from federal authorities to state agencies, and recently to organizations in the borough such as Manillaq Association and the Borough itself. This evolutionary trend can be expected to continue. Kotzebue remains the dominant government and regional center. The roots of Kotzebue's prominence as a modern center for the region relate to the establishment of major government facilities in the city. The Public Health Service Hospital was built shortly prior to World War II and war-time and post war-time construction included the following:

- Military support facilities such as DEW line and Weather Bureau Station,
- Civil Aeronautics Administration (CAA now FAA)
- Airport Expansion for military planes
- Alaska Native Service School

This fundamental structural feature of the economy-- the dominant role of public sector employment-- remains intact. The Borough has a large number of these public sector jobs available and relatively few jobs in the private sector.

Non-renewable Resource Extraction

The Red Dog Mine, owned by the NANA Corporation and operated by Cominco, Inc. is the first of what many analysts believe will be several large-scale mining operations in the borough. Red Dog is a world-scale lead/zinc/silver mine employing about 250 people.

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Development of the operation was a major cooperative effort between NANA, Cominco and the State of Alaska. The Borough estimates the mine should provide a steady wage base of \$7 million to \$10 million per year.

The Borough and Cominco Alaska Incorporation (CAI) signed a cooperative agreement in 1987 which provides for quarterly payments from CAI to the Borough over a 14-year period. Total payments over the period equal \$25.9 million. These funds are to be used by the borough for "... community purposes, facilities, or services for the good of the NAB to the extent the NAB is authorized by law to exercise the power necessary to accomplish the purpose or provide the facility or service." This agreement provides a significant source of revenues to the borough.

NANA also operates a jade mine at Jade Mountain. Other smaller placer mines are also in operation, particularly in the Candle and Squirrel River areas. The Borough contains many other mineral areas which appear to be promising for future development. These include:

- lead/zinc/silver deposits northwest of the Red Dog Mine;
- copper in the Ambler River mining district;
- coal deposits near Chicago Creek on the Seward Peninsula;
- placer deposits in the south part of the Borough around Candle, Klery Creek, the Kiwalik River, Buckland, Deering and Chicago Creek

A recent proposal to extract coal deposits at Aluaq on the Chukchi Sea in the North Slope Borough illustrates how regional development may affect the borough. The Arctic Slope Regional Corporation hopes to convert diesel-burning power plants in Nome and Kotzebue to coal burners as part of demonstration of overall feasibility for a major mining and export program. The arctic reserve holds a potential 3 billion tons of coal. The Alaska Industrial Development and Export Authority provided \$200,000 to study prospects for a road or rail system from the Aluaq coal mine. Coal would be shipped over the road to the coast for shipment and export; the study found that this proposal would not be feasible at this time.

5.3 EMPLOYMENT AND INCOME CHARACTERISTICS

Regional Employment and Income Characteristics

Borough residents experience an extremely high unemployment rate by conventional standards. According to the Boroughs' 1988 employment survey, the unemployment rate was 63% with an average income of only \$10,000. At the time, the national unemployment rate was less than 8%, while the state unemployment rate was 13%.

Conventional unemployment statistics do not present an accurate portrayal of job opportunities, however. For example, people engaged in either part or full time subsistence will appear to be "unemployed" by conventional economic terms. A 1988 NANA Region Social Indicators survey of four Borough communities provides insights into the regional economy. The survey revealed that:

- Over half (54 percent) considered themselves unemployed during the entire year and desired jobs.
- 29 percent of the heads of households has less than two weeks of work in 1986.
- Only 23 percent worked for two or more weeks during each month of the year.
- 23 percent of the sample heads of household worked away from their home community during 1986. This rate appears to indicate a scarcity of jobs or an uneven distribution of jobs among villages.

Similar economic surveys by the Borough have indicated that unemployment is a chronic problem. In 1987, 60 percent of the surveyed labor force indicated that they were unemployed. In 1988, this rose to 63 percent. The 1980 Kobuk Census reported that 53 percent of the working age population was unemployed. Average yearly household income is \$25,390. The median is only \$20,000 and about one-quarter were \$8,000 or less. This indicates that a small amount of high income jobs are held in the area.

The NANA/Cominco Red Dog mine is the first major private development in the region. A major effort has been made to train, hire and retain local residents. Efforts to employ borough residents at the Red Dog Mine with schedules compatible with subsistence patterns have been partially successful. The mining operation provides about 360 direct jobs and about 200 of these are held by Borough residents. The mine jobs are usually on a two week shift and time off is provided for subsistence activities.

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This work pattern is familiar and acceptable to most residents based upon past experience with the Trans Alaska Pipeline construction and job opportunities with NANA Development Corporation's operations at Prudhoe Bay.

5.4 BOROUGH STRATEGIES AND IMPLEMENTATION FOR ECONOMIC DEVELOPMENT

The most important task facing the borough concerning economic development is to understand and carry out its proper role, particularly in how it works in a partnership with the villages and regional organizations. The Borough will have the lead responsibility in some activities such as OEDP, management of borough lands, and land use planning and controls. In other cases, such as manpower training, and activities on private lands, a support role is more appropriate.

From the perspective of the Comprehensive Plan, the most important roles of the borough concerning economic development are to 1) understand and represent the wishes of the people, 2) to provide a permanent forum for regional coordination and information exchange, 3) use the OEDP, management of borough lands, and land use planning and controls to maximize local economic and cultural benefits while avoiding negative impacts, and 4) to continuously monitor the economic health of the region.

1- Represent Residents' Goals and Objectives for Economic Development

In the face of world economic developments where local governments have relatively little control, it is imperative that everyone speak with one voice. Although the region has many excellent and long-established public and private organizations, the Borough is recognized by state and federal authorities as the legally constituted representative government. The Borough must take the lead in articulating and defining the position of the region concerning overall economic development policy and specific development proposals and actions.

However, the Borough should not ignore or replace economically-related programs conducted by other organizations. In fact the majority of citizens in the Borough are shareholders of NANA, which has been responsible for economic development in the past and will continue to do so in the future. Similarly, KIC plays a major economic role in the Kotzebue area. Coordination with these organizations is

essential to representing the interests of the region. The issue of effectively representing the interests of the region leads to the second major role - acting as a coordinator through the Regional Strategy.

2 - Use the Regional Strategy to Provide Coordination, Monitoring and Communication

The Northwest Arctic Borough is blessed with an abundance of individual talent and well-regarded organizations. However, in the latter half of the 1980's, communication decreased between many of the organizations, and there was very little ongoing communication with the private sector in the region. The Regional Strategy is an excellent vehicle for providing both definition and consensus on important issues. It is strongly recommended the Borough become the permanent coordinator for an active Regional Strategy. In addition to the traditional village and regional groups, this revised strategy must include involvement of the private sector (e.g. commercial, retail, transportation and financial) in the region.

3 - Use the OEDP, ARDOR, EDC, Management of Borough Lands, and Land Use Planning and Controls to Support Sound Economic Development

• **OEDP, ARDOR, EDC** - the OEDP, ARDOR, and EDC will be the primary Borough programs to directly initiate economic development in the region, and the Comprehensive Plan will rely on the OEDP for implementation. The OEDP should continue to support small scale, local development and marketing of renewable and non-renewable resources, such as harvest of fisheries and timber, arts and crafts, and development of coal for local use. In coordination with villages and regional organizations, the OEDP should also address opportunities for establishing local businesses in villages, identify and meet manpower training needs, and assist villages with economic development.

As part of the OEDP, it is important to have staff that can help with identifying economic development opportunities, identify sources of funding, and assist in preparing grant applications. It takes staff to obtain adequate funding and create more revenue through economic development.

• **Land Use Planning** - The Borough will face the potential for development of natural resources on federal, state and private lands, and in state and federal

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waters. Borough land use planning should anticipate where development is likely to occur, including access and transportation requirements, and potential adverse impacts to communities and residents. Land use plans should then designate areas suitable or not suitable for resource development, while fostering traditional forms of economic and cultural activity, such as subsistence. Planning mechanisms are discussed in more detail in Chapter 4.0, Land Use.

- **Land Use Controls** - the Borough has several types of existing or potential land use controls that can guide the location and nature of economic development. These include coastal management (existing), zoning (potential), platting (partially existing), and land management regulations (potential). Land use controls should be utilized to provide benefits to local residents while minimizing negative impacts.

- **Management of Borough Lands** - the Borough has selected 133,000 acres of municipal entitlement land from the State, and is entitled to additional selections. These lands can be selected and managed to facilitate economic development that provides benefits to local residents, or protect traditional resources and activities from negative impacts.

4 - Continuously Monitor the Economic Health of the Region

In discussions with the Borough and other organizations, it became clear that no one had accurate quantitative data from which to measure the economic health of the region. While some conclusions can be drawn from such information, it is imperative for the Borough to develop a set of reliable economic indicators. Without comparable quantitative information, the Borough will be unable to tell whether economic and other goals and objectives are being achieved. There will be no accurate way to know if conditions are getting better or worse each year. Setting up such a monitoring system involves the following tasks:

- deciding what information is essential to monitor (eg. number of new business licenses, phone hookups);
- coordinate with the Alaska Department of Labor on availability and appropriate types of data
- obtaining agreement from all sources to provide this information;
- setting up benchmark year data from which to compare change; and
- monitor and publish an annual report on the state of the regional

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economy.

A monitoring system should be designed and implemented through the Economic Development Director and OEDP.

5 - Other General Implementation Actions

There are several other general Borough implementation actions for economic development that can be considered:

- The Borough should always seek local advice and approval from communities which may be affected by development.

- The Borough should continue to assist communities in obtaining federal and state funds. The Borough should identify those projects which absolutely need to occur and apply for State and Federal funding while there is still money available.

- The Borough will seek opportunities to maximize matching public funds or may consider the possibility of bonding, a special temporary tax or special assessment district to raise revenues for projects with high value to the residents of the Borough.

- The Borough will work closely with the State of Alaska Departments of Community and Regional Affairs, Commerce and Economic Development, Environmental Conservation, and Transportation/Public Facilities to obtain funds for programs and capital projects.

- The Borough should develop a yearly (two year) priority list for projects which need federal or state funds. A process similar to the Regional Strategy process can be used to develop the list and ranking. In the fall or early winter (Aug-Oct), the Borough staff could travel out to the communities and meet with the City and IRA governments to develop and then update the priority list. The Borough could then prepare a report of the proposed priority list for Planning Commission and Assembly approval. Once the report is approved, it will be submitted to the legislators representing the Borough on the State and Federal levels. These requests should complement the Comprehensive Plan policies. The request package will have supporting material such as project description, estimate cost, maps, and resolutions prepared by the Borough for formal submittal.

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- Borough staff should remain small and self-sufficient. Rather than assume local operation of programs and services in the Borough communities, the Borough should help the villages continue their own programs.

**NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN
6.0 COMMUNITY FACILITIES, INFRASTRUCTURE
AND HOUSING ELEMENT**

6.1 INTRODUCTION

**6.2 BRIEF DESCRIPTION OF COMMUNITY FACILITIES, INFRASTRUCTURE AND
HOUSING ELEMENT**

6.2.1 UTILITIES AND INFRASTRUCTURE

6.2.2 OTHER REGIONAL AND COMMUNITY FACILITIES

6.2.3 HOUSING

6.3 COMMUNITY FACILITIES AND INFRASTRUCTURE SCENARIOS

6.4 BOROUGH STRATEGIES

6.4.1 POWER GENERATION

6.4.2 WATER, SEWER, AND SOLID WASTE DISPOSAL

6.4.3 OTHER COMMUNITY FACILITIES

6.4.4 HOUSING

6.4.5 CAPITAL PROJECT PROGRAMMING

6.1 INTRODUCTION

The Community Facilities, Infrastructure, and Housing Element provides a brief description of facilities, infrastructure, and housing characteristics of the region; summarizes the issues, goals and objectives that appear in Chapter 2.0; and presents Borough strategies for community facilities, infrastructure and housing.

The Borough does not have the primary responsibility for providing community facilities, infrastructure and housing, but can work with villages, regional organizations, and state and federal government. This element emphasizes actions that the Borough can take to assist with providing, operating, and maintaining cost effective facilities, infrastructure, and housing. More detailed information on community facilities, infrastructure and housing is contained either in the Background Report or appendices to the Comprehensive Plan.

6.2 BRIEF DESCRIPTION OF COMMUNITY FACILITIES, INFRASTRUCTURE AND HOUSING ELEMENT

6.2.1 UTILITIES AND INFRASTRUCTURE

Public utilities and infrastructure include electricity, telephone, water and sewer, and solid waste (landfills) systems. In the Northwest Arctic Borough, these services are provided by either utility companies, municipal government, or village IRA councils. Electricity is provided by Rural Electrification Area (REA) cooperatives (such as Kotzebue Electric Association and Alaska Village Electric Cooperative), municipal government, or village IRA councils. Municipal government or village IRA councils traditionally provide water, sewer, and solid waste services.

Power Generation: High electricity costs are a common problem in rural Alaska. The State of Alaska's Power Cost Equalization Program (PCE) provides significant reductions in monthly electric charges for homes, businesses and public facilities throughout rural Alaska. The goal of the PCE program is to provide economic assistance to customers of electric utilities in rural Alaska where, in most instances, the kilowatt-hour charge for electricity is three to five times higher than in urban Alaska. Local utilities such as KEA are looking at other ways of reducing costs, such as changes in generating technology,

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alternate fuels (coal), use of waste heat to defray costs or encourage other development, bulk fuel purchase, and energy audits to identify measures to reduce consumption.

Water, Sewer, and Landfill: Municipal and IRA council governments have traditionally operated water, sewer, and landfill facilities for communities within the region. There are several types of problems that are common to many of the villages systems:

- lack of proper maintenance or shutting down safeguards to save costs
- keeping trained personnel operating and maintaining the systems in the villages
- system failures due to improper construction, extreme environmental conditions or improper maintenance
- fiscal or compliance problems resulting from changes in state and federal regulations (eg. water system testing and landfills in close proximity to airports)

Improvements to municipal water, sewer, and landfill projects are usually beyond the financial ability of local communities.

Funding is competitively available from state and federal sources. The Village Safe Water (VSW) Program is the construction arm of the Alaska Dept. of Environmental Conservation (DEC); VSW oversees roughly 100 active projects and 40 projects that are funded each year through the annual capital projects bill. Historically, the NANA region ends up with about 12% (\$1-3 million) of the state budget of \$9-27 million; the average cost for a new water system is \$8-10 million; other sources of funding are required to get enough money. Projects that are selected by VSW for funding must have the following characteristics:

- designated as the number one community priority by resolution from village council;
 - should have a utility study, plan or master plan with cost estimates, and relationship to other projects such as housing;
 - show a proven ability to reliably operate the system (eg. track record in operation and sampling) and trained operators;
 - adopt ordinances for fee structure, enforcement, and fee collection (VSW will check with DCRA on this issue);
 - indicate any health-related implications that are factor in facility improvements;
- and

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- demonstrate self-funding, or other leveraged funds available (eg. other federal and state sources).

DEC's Division of Environmental Quality is responsible for planning, identification of needs and concerns, coordination on enforcement and compliance related to air and water quality regulations in rural Alaska. They develop community/DEC agreements related to public health and environmental issues; set out agenda timeframes, and suggest solutions to problems. DEC also reviews plans for new subdivisions and fuel storage for compliance with regulations and grant requirements. DEC is participating with the Northwest Arctic Borough in studying the feasibility of establishing village and regional recycling programs and facilities (\$40,000 grant from DEC to study recycling opportunities in the villages).

6.2.2 OTHER REGIONAL AND COMMUNITY FACILITIES

There are other regional and community facilities of importance that should be mentioned in the Borough Comprehensive Plan. These facilities usually are beyond the ability of villages to fund by themselves, and include the following:

- village health clinics
- municipal/council offices,
- community centers and recreation facilities; and
- regional facilities such as cultural centers, job vocational centers, and elders facilities

In many of the villages, health clinics are not big enough, or have structural and mechanical problems that limit their use or create hazards. Funding for health clinics has traditionally come from the Public Health Service, agency grant programs like DCRA's REDI Grants, and through State of Alaska legislative grants. Local coordination is traditionally provided by Maniilaq Association.

New or improved municipal and IRA Council Offices are often village capital improvement priorities. They suffer from problems similar those described for health clinics. In addition, offices are often shared between organizations and are overcrowded. Funding comes primarily from agency grant programs like DCRA's REDI Grants, and State of Alaska legislative grants.

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Community centers and recreation facilities are important for cultural activities and general community well-being. Space is needed where people and groups can gather, and where young people can pursue recreation and other activities. Funding comes primarily from agency grant programs like DCRA's REDI Grants, and State of Alaska legislative grants.

Village and regional strategies have identified the need for specific-purpose regional facilities. These include job/vocational training centers, cultural retreats and facilities for elders, and drug rehabilitation facilities. Like the other facilities described in this section, they compete for specific state program funds, and general legislative funds.

6.2.3 HOUSING

Housing Characteristics

A 1988 state survey summarized several characteristics of homes in the Northwest Arctic Borough. They are among the smallest of all regions in the state. Northwest Arctic Borough homes average just 731 square feet, and contain 5.3 members per households - the highest number in the state. These statistics imply that the Northwest Arctic Borough has large households living in small houses. The number of family generations living in the same household is another measure of living standards. While different generations of the same family may choose to live together, it may also reflect a lack of options for each generation to establish their own household. Overcrowding is also shown by comparing the percentage of residents living in various size homes. In the Northwest Arctic Borough, about 30% of all residents had 100 or fewer square feet per person, equivalent to a 10 x 10 foot room. Over half (52%) of borough residents live in less than 150 square feet and 87% live in less than 300 square feet per person.

One-half of all borough homes fail to have this minimum insulation, and significantly, 72% of borough homes cannot be maintained at 70 degrees F. during periods of cold weather. The primary heating source in the borough is wood stoves (70%), although oil pot (30%) and oil furnaces (32%) are also prevalent. The state survey found that 47% of all windows and doors in borough homes need replacing. Although most homes were hooked up to electricity, 72% lacked running water and 73% of all homes lacked a sewer system. Bringing substandard housing up to acceptable living conditions is a major concern of Borough residents.

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Housing Costs

The state survey found that \$116,000 was the average cost to build a new house in rural Alaska. The average cost to undertake major repairs in rural Alaska is estimated at \$25,000 per unit. However, using \$25,000 as an average, the cost to repair the 814 homes listed in the Borough as needing repair is \$20,350,000. The amount and cost of new construction to replace homes in poor condition and to provide homes for third and fourth generations were estimated at 287; some \$33 million would be required to fund construction of 287 homes in the Borough. In addition to the above requirements, new homes are required to relieve overcrowding. The number and cost varies depending on the minimum sized home deemed acceptable. The survey developed scenarios for replacing all homes with less than 200 s.ft, 250 s.ft and 300 s.ft per resident. Costs range from \$38 million to \$48 million, depending on the minimum size/resident standard adopted.

Housing Providers

The Northwest Inupiat Housing Authority (NIHA) provides critically-needed housing assistance throughout the borough. The NIHA currently had a 1990 budget of \$9 million, and is undertaking projects in all borough communities. Projects range from repairs to existing housing in all villages to constructing new housing in several communities. Funding is provided primarily by the Department of Housing and Urban Development (HUD) for low-income housing, through the Public and Indian Housing Programs. In addition to housing construction and maintenance, NIHA provides assistance with fuel and water payments for housing residents.

Limited funding for housing is also available from other programs. The Alaska Dept. of Community and Regional Affairs has several programs related to housing:

- state loan program for non-conforming housing
- senior citizen housing loan program, (new 1991; based on AHFC bond sales and aimed at reconstruction/rehabilitation of congregate housing)
- grant funds for support of infrastructure development (available after housing agreements have been signed)

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Alaska Housing Finance Corporation (AHFC) provides some low and moderate income housing financed by bond sales, although have traditional been in urban centers such as Anchorage and Fairbanks. AHFC has identified problems providing housing to moderate and high income people, particularly in rural areas where lending institutions do not have programs. They are looking at providing seed money for housing and have a new multi-family housing program.

6.3 COMMUNITY FACILITY SCENARIOS

This section presents three alternative futures for the next 25 years, not particularly as forecasts, but as visions of what might happen given certain economic and political assumptions. The goal of presenting alternative futures is to better prepare the borough for the future. The three alternatives represent reasonable boundaries of future events; in other words, the next 25 years will likely witness some events from all three scenarios. By understanding the boundaries of what might happen, the Borough can be better prepared to deflect, to guide, to coordinate, to ensure that whatever happens fits within the goals and wishes of local residents.

The three alternative futures reflect a Low, Best Guess, and a High Growth scenario. Each of these three alternatives have elements of reality, but predicting the future is a murky art at best.

The Low Scenario

With regard to community facilities and infrastructure, a Low Scenario would have many potential negative consequences for Borough residents. The assumptions for the Low alternative are presented in Table 3-3. Without new development, there would be dramatic changes in State funding for facilities and infrastructure, and additional sources of revenue would be required, including selling borough land to raise revenues. With a rising population, dependance on a cash economy, and more demand on animal and fish resources, many of the Borough residents would find it difficult to maintain a complete subsistence lifestyle. The viability of many villages' community facilities and utilities would be threatened, as state and federal grant programs decline or end. Kotzebue would gain in population, as village populations decline, increasing demands on the

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infrastructure (water, sewer, electricity, and housing) would occur in Kotzebue while lack of funds would reduce such demands in the villages.

Best Guess Scenario

The most likely scenario involves the continuation of the status quo, with gradual steps taken to increase non-renewable resource extraction. The important outcome of the Best Guess scenario is the continued ability of area residents to enjoy traditional subsistence pursuits, combined with some additional non-renewable resource changes in land use. This could also be termed the "hang-on" scenario, since no public program would be safe from reductions in funding or complete cancellation, and expanded or new programs would be unlikely. Demand for facilities and infrastructure in village associated with growth would occur, and should be factored into planning. With astute political leadership and careful coordination, conditions in the Borough would remain stable and perhaps gradually improve.

The High Scenario

A high scenario is usually considered a "best" scenario, filled with intense economic activity and positive secondary benefits. While cash economy and service program opportunities would improve, increasing social pressures will affect traditional cultural and subsistence values and use of resources.

This high scenario would bring many changes to the Borough, not all of them desirable. Opportunities for local employment and revenue would increase, along with the potential for creating more locally-owned businesses. Increased state and federal revenue could be used for programs to improve the standard of living for Borough residents, and be used for infrastructure improvements. However, increased development, the influx of outsiders, and availability cash could also increase social pressures and pressure on subsistence resources.

This scenario would create substantial changes in existing facilities and infrastructure. Resource development and tourism could increase demands for facilities. Growth in villages would require expansion, along with lands for housing and infrastructure. Borough planning activities would have to be adjusted to anticipate and control infrastructure demand.

6.4 BOROUGH STRATEGIES

The Northwest Arctic Borough has no direct powers related to providing or maintaining utilities, infrastructure and community facilities, and housing. There are four general areas where the Borough does or should consider providing assistance to villages and regional organizations: Agency and Program Coordination; Funding and Grant Writing Assistance; Land Availability and Site Control; and Technical Assistance to Villages. The Borough has already been successful in obtaining grant funds for related programs, and in coordinating with agencies on infrastructure system needs and regulatory non-compliance problems. Providing assistance in the other areas is primarily a question of staff availability (salary costs) and expertise. However, because either the villages or other regional organizations have direct responsibilities in some of these areas, the Borough should coordinate its activities with these groups.

An additional area where the Borough could take the initiative is in developing a *regional capital improvement program process*. This idea was discussed during the 1991 Regional Strategies Meeting in the Communities Facilities Task Force Meeting.

6.4.1 POWER GENERATION

The Borough has no direct involvement in the generation of electricity; however, there are actions the Borough can take with regard to agency and program coordination, grants and funding, land availability and site control, and village assistance.

1 - Agency and Program Coordination

- work with the appropriate villages, utilities and the Alaska Energy Authority to gain support and funding for the following programs: waste heat utilization, energy audits, bulk fuel purchasing and storage, and alternative power generation technologies and fuel sources

2 - Funding Assistance

- continue lobbying for maintaining or increasing funding to the Power Cost Equalization Program (PCE)

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3 - Village Assistance

- work with villages, AVEC, and KEA to determine the feasibility of conducting village energy audits on power generation systems and public facilities, and consolidation, maintenance, and management alternatives

6.4.2 WATER, SEWER, AND SOLID WASTE DISPOSAL

The Borough has not adopted direct powers to provide water, sewer, or waste disposal services; however, there are actions the Borough can take with regard to agency and program coordination, grants and funding, land availability and site control, and village assistance.

1 - Agency and Program Coordination

- work with Maniilaq and state and federal agencies to improve training for public utility system operators in villages (potential link to regional vocational center)
- continue to work with DEC Division of Environmental Quality to identify regulatory compliance problems and acceptable solutions
- help provide a central hazardous waste collection site for the region; the Borough could provide assistance, including possible use of Red Dog barges if they have space available
- coordinate waste and water use reduction , and recycling programs
- evaluate the feasibility of a regional facility to reduce costs

2 - Funding Assistance

- assist villages, as requested with preparing grant applications and funding requests related to water, sewer, and solid waste disposal systems
- continue applying for funds to address regional infrastructure needs (eg. solid waste and recycling)

3 - Land Availability and Site Control

- adopt village plans and platting ordinances to assist with site control for village infrastructure projects

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- work with NANA and villages to increase availability of land for village infrastructure, including the possibility of trading future Borough lands

4 - Village Assistance

- assist villages as requested to compile background information on infrastructure system characteristics, problems, and needs (particularly factors that will increase the likelihood of successfully obtaining grant funds)
- help villages improve their track record in infrastructure operation by supporting staff training and other appropriate technical assistance

6.4.3 OTHER COMMUNITY FACILITIES

The Borough has not adopted direct powers to provide water, sewer, or waste disposal services; however, there are actions the Borough can take with regard to agency and program coordination, grants and funding, land availability and site control, and village assistance.

1 - Agency and Program Coordination

- work with villages and local utilities to incorporate energy conservation measures into community facility design and building codes

2 - Funding Assistance

- assist villages, as requested with preparing grant applications and funding requests related to community and regional facilities

3 - Land Availability and Site Control

- adopt village plans and platting ordinances to assist with site control for village infrastructure projects
- work with NANA and villages to increase availability of land for village infrastructure, including the possibility of trading future Borough lands

6.4.4 HOUSING

The Borough has no direct authority regarding housing; however the Borough can help with agency and program coordination, grants and funding, land availability and site control, and village assistance. The Borough should coordinate with the Northwest Inupiat Housing Authority (NIHA), NANA Corporation, and villages to determine appropriate areas of assistance.

1 - Agency and Program Coordination

- work with DCRA and NIHA to take advantage of their housing programs for the NANA region (non-conforming housing, senior citizen housing, infrastructure development)
- work with AHFC and NIHA to identify potential regional housing projects that could be funded by the state
- work with NIHA and local utilities to incorporate energy conservation measures into housing design and building codes

2 - Funding Assistance

- help identify potential state sources of funds for housing construction, rehabilitation of substandard housing, and related infrastructure development

3 - Land Availability and Site Control

- adopt village platting ordinances to assist with site control for village housing projects
- work with NANA regional Corporation, KIC and villages to increase availability of land for village housing, including trading future Borough lands

4 - Village Technical Assistance

- provide assistance as requested by villages to plan for future housing and infrastructure requirements

6.4.5 REGIONAL CAPITAL IMPROVEMENT PROGRAMMING

The Community Facilities Task Force of the 1991 Regional Strategies discussed the need for a regional process for establishing Capital Improvement Program (CIP) priorities, in which the needs of the region are looked at as a whole. Currently, individual villages prepare their own capital improvement needs, look for funding sources, and work with area legislators to obtain funding. Success in obtaining funds varies among the communities, and there is little assessment of regional need for capital improvements. Questions for the Borough, villages, and regional organizations to consider are:

- 1) is there interest in developing a regional capital improvement programming process that takes village and regional project needs, screens and evaluates them, and assign priorities for various funding sources?
- 2) if so, is this something that the Borough should take responsibility for?

Some of the ideas discussed in the Regional Strategies are presented below as an action item for Borough, regional organization, and village consideration:

- use a mayors or city administrators panel to evaluate and rank projects,
- develop a priority/ranking/grading system for projects, and have city councils ratify such a system by resolution
- have each village set a #1 priority or #2 priority for consideration
- match projects with grant programs where they have the greatest chance of success, and may have to consider whether proposals are competitive despite need
- health and safety standards should be the first priority (Maniilaq Health Board is currently doing this)
- provide assistance in deciding what is a fundable range on a project, or break a big project into fundable, stand-alone pieces or different grant programs or funding phases
- give villages technical assistance to establish viable projects, then send them to the borough for assigning priorities, then match the projects with the best sources of funding
- track what has been funded, what hasn't, and why, for guidance in future evaluation and funding

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- work with the state and federal agencies with technical and funding responsibilities to prepare a competitive project, and get project requests to them to in the right point at their planning and funding cycles

**NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN
7.0 TRANSPORTATION ELEMENT**

7.1 INTRODUCTION

7.2 REGIONAL AND LOCAL TRANSPORTATION SYSTEM CHARACTERISTICS

7.2.1 REGIONAL TRANSPORTATION FACILITIES

7.2.2 LOCAL TRANSPORTATION RESOURCES

7.2.3 TRANSPORTATION PLANNING

7.3 TRANSPORTATION SYSTEM SCENARIOS

7.4 BOROUGH STRATEGIES FOR TRANSPORTATION DEVELOPMENT

7.4.1 LOCAL TRANSPORTATION IMPROVEMENTS

**7.4.2 REGULATION OF RESOURCE DEVELOPMENT AND INTER-REGIONAL
TRANSPORTATION**

7.1 INTRODUCTION

The Northwest Arctic Borough, like most of rural Alaska, relies on air and marine transportation to link the Borough with the rest of the state. No overland route connects the Borough to road or rail systems in other parts of the state. Kotzebue is the transportation center for the region, and serves as a trans-shipment point for the villages.

Within the region, airports are a crucial link to other villages, Kotzebue and the rest of Alaska. However, traditional transportation routes methods are equally important. Boats travel on the river systems and along the coast during open water, and snow machine travel the frozen rivers and overland routes during the winter. People use boats, snow machines, ATV's, and dogsleds to for travel and traditional harvest activities. Each village has its internal road system, with connections to airstrips, landfills and other facilities.

The road from the Red Dog Mine to a port site near Kivalina is a special transportation system dedicated to the mining operation, and is not open to the general public. It could be used to support additional resource development in the Borough from mineral prospects to the west of Red Dog. It has also been mentioned as an alternative for shipping coal produced from lands to the north in the North Slope Borough.

The Transportation Element of the Comprehensive Plan provides a brief description of regional and local transportation system characteristics, a discussion of the implication of the forecast scenarios to transportation facilities, and present a Borough Strategy for transportation system improvements and development.

7.2 REGIONAL AND LOCAL TRANSPORTATION SYSTEM CHARACTERISTICS

7.2.1 REGIONAL TRANSPORTATION FACILITIES

Kotzebue

Kotzebue has been a regional center for many hundreds of years. Its location on ocean water near the discharge point of several major rivers has made the site a hub for ancient arctic trading and modern commerce. Most of the goods and fuel brought into the

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Borough are shipped through Kotzebue by air or barge. Several major air carriers, air cargo, and air taxi services serve the region out of Kotzebue.

Red Dog Mine Complex

The development of the mine at Red Dog included a full complement of transportation facilities to handle the operation. The mine site has an airfield with a lighted runway capable of handling 737 passenger jets and C-130 cargo planes. This air connection and the ability to commute has led to unanticipated secondary effects, primarily the outmigration of some locally-employed residents to the Anchorage area. A helipad supports helicopter operations. The mine site is connected by a 57 mile long industrial gravel road to A Port site along the Chukchi Sea. The road is used by ore-carrying trucks, mining equipment and company vehicles. No private traffic is allowed and the road environs is subject to monitoring to protect the subsistence resources in the area. Port site facilities include a causeway, dock and storage facilities. These facilities are the farthest north of any port in North America, and are ice-free three months of the year. Ore concentrate is mined year-round and stored at the dock site for the short open-water shipment season. The dock is designed specifically for loading ore onto ocean-going ships.

7.2.2 LOCAL TRANSPORTATION FACILITIES

Each of the villages has an internal transportation network consisting of local roads, trails, waterways and airstrips. River travel by small boat is common during summer months. Travel sometimes is easier in winter when frozen tundra and rivers create opportunities for designated ice roads and overland snow machine travel. While snow machines are prevalent in winter, dog sled use is almost always for recreation and for racing. None of the villages are linked to each other by road, except for winter ice roads and snow machine trails. Each community has a gravel airstrip, and some have simple dock facilities for receiving fuel and supplies.

Each village has its own transportation needs. Common problems include keeping airport navigation aids in working order, and keeping village roads maintained. Where roads to airstrips or landfills cross wetland areas, maintenance problems increase. Road access to sources of gravel is becoming a major concern to keep up with improvements to village infrastructure and transportation systems.

7.2.3 TRANSPORTATION PLANNING

There are previous transportation planning efforts that addressed regional transportation needs and new facilities that could be developed in support of resource development. In the early 1980s, the Department of Transportation & Public Facilities (DOT&PF) sponsored the Western and Arctic Alaska Transportation Study. Known as the "WAATS" Study, these engineering analyses examined the potential for future marine, aviation and overland transportation corridors and facilities. Overland modes included roads, railroads and slurry pipelines. In the NANA region, the study identified several new potential overland corridors, including intra-regional connections to Kotzebue, and inter-regional connections to the Seward Peninsula and the Dalton Highway.

Airport plans, sponsored by the Alaska Department of Transportation and Public Facilities (DOT/PF), have been completed or are underway for several communities, including Kotzebue and Noorvik. These plans will be used as a basis for funding and scheduling necessary airport improvements. DOT/PF also prepares 6 year Transportation Improvement Plans (TIP's), which are updated every year and are used as a basis for state funding of transportation improvements. Village and regional transportation system funding priorities should be given to DOT/PF for inclusion in the TIP revision process.

While residents have supported improvements to village transportation systems, they have expressed serious concerns about unregulated transportation associated with resource development and overland links to other parts of Alaska. Regional leaders have long understood the problems with unregulated transportation access into the region and maintaining cultural integrity and traditional lifestyles. NANA Corporate land was used as a negotiating tool for arriving at terms and conditions for development of the Red Dog Mine, including such issues as transportation access, trespass, village involvement, and protection of habitat. The Northwest Area Plan, Trails and Transportation Resource Report, issued by the Alaska Department of Natural Resources in 1989, reinforced the above policies. According to this report, the "...overwhelming consensus among public meeting participants was against the building of any road to or from outside the region..." The need to designate future resource access corridors was opposed by most participants because of the potential adverse impacts on subsistence resources.

7.3 TRANSPORTATION SYSTEM FORECASTS

The transportation system forecasts use the same assumptions as presented for other elements and summarized in Table 3-3. Currently, transportation system improvements are highly dependent on state and federal funding, and changes in availability of public revenue will dramatically affect transportation systems.

Low Scenario

With regard to transportation systems, a Low Scenario would have many potential negative consequences for Borough residents. Any decrease in revenues to both the Borough and the State would affect funding for transportation maintenance and improvements. A significant decrease would likely result in the deterioration of regional and village transportation systems, adding costs to passenger and cargo movement, and increasing the isolation of the region. Similarly, without new resource development, there would be no associated new transportation facilities. With a rising population, dependence on a cash economy, and more demand on animal and fish resources, many of the Borough residents would find it difficult to maintain a complete subsistence lifestyle, particularly with increased passenger, fuel and commodity costs. Under this scenario, it is possible that the Red Dog transportation system would see decreased or suspended traffic levels in response to lower levels of mining activities.

Best Guess Scenario

The most likely scenario involves the continuation of the status quo, with gradual steps taken to increase non-renewable resource extraction. The transportation outcome of the Best Guess scenario is continuation of current levels of transportation system improvements and funding (which is not particularly high). This could also be termed the "hang-on" scenario, since no public program would be safe from reductions in funding or complete cancellation, and expanded or new programs would be unlikely. Village transportation systems would be maintained at current levels, but with no major improvements. The Red Dog transportation systems would continue to operate at current levels, but there would be no associated new transportation facilities.

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The High Scenario

A high scenario is usually considered a "best" scenario, filled with intense economic activity and both secondary benefits and negative effects. While cash economy, capital improvement and service program opportunities would improve, increasing social pressures will affect traditional cultural and subsistence values and use of resources.

This high scenario would bring many changes to the borough, not all of them desirable. Opportunities for federal, state and local revenue would increase, along with funding for more regional and village transportation improvements. Increased state and federal revenue could be used for programs to improve the standard of living for borough residents. However, increased development, the influx of outsiders, and availability cash could also increase social pressures and pressure on subsistence resources.

This scenario would create substantial changes in existing transportation access, resulting from resource development, and potentially linkage to the Railbelt transportation system. If left unregulated, resource development and tourism traffic could increase conflicts with traditional land uses and cultural activities. Growth in villages would require expansion of their transportation systems, and access to more gravel. Borough land use controls and planning activities would have to be adjusted to anticipate and control transportation impacts. Borough revenue might be expected to increase as a result of taxation or other methods of generating revenue from industrial development.

7.4 BOROUGH STRATEGIES FOR TRANSPORTATION DEVELOPMENT

At this time, the Borough has not adopted any road, port, or other transportation-related powers, nor are there excess revenues available that could be committed to transportation improvements. The recommended strategies for Borough action have two components. Under the first, the Borough should consider providing assistance to villages and regional organizations in four areas: Agency and Program Coordination; Funding and Grant Writing Assistance; Land Availability and Site Control; and Technical Assistance to Villages. The Borough has already been successful in obtaining grant funds for related programs, and in coordinating with agencies on transportation system needs. Providing assistance in this area is primarily a question of staff availability (salary costs) and expertise. With regard to the second component, Borough land use controls

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should anticipate and appropriately regulate transportation development associated with resource development, inter-regional linkage, and tourism to minimize negative effects.

7.4.1 LOCAL TRANSPORTATION IMPROVEMENTS

Agency and Program Coordination

- work with the appropriate villages and the Alaska Department of Transportation and Public Facilities to identify sources of funding for transportation improvements
- work with DOT/PF to site transportation facilities and develop appropriate sources of gravel and other construction materials
- become familiar with the DOT/PF TIP process and project justification and timing requirements for successfully obtaining funds
- work with DOT/PF and DEC on issues related to landfills and airport clear zones

Funding Assistance

- continue lobbying the State for increased funding for village transportation improvements
- assess opportunities for federal funds for transportation facilities

Village Assistance

- work with villages to identify new and improved transportation facility needs
- work with villages to understand state and federal funding opportunities and application requirements

Land Availability and Site Control

- adopt village plans and platting ordinances to assist with site control for village transportation projects
- work with NANA and villages to increase availability of land for village transportation projects, including trading future Borough lands for lands near villages

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7.4.2 REGULATION OF RESOURCE DEVELOPMENT AND INTER-REGIONAL TRANSPORTATION

- represent Borough and regional interests and participate in state and federal plans related to transportation development
- incorporate transportation concerns into development of Borough land use controls, including development of zoning districts and transportation corridor management plans
- use the Red Dog project transportation corridor as a model for minimizing negative effects and maximizing village involvement in transportation planning
- require completion of transportation alternatives and economic/ financial feasibility studies of any proposed railroad or road corridor projects prior to design and construction

APPENDIX A STRATEGIES FOR MANAGEMENT OF BOROUGH OWNED LANDS

This Appendix presents options for management of lands selected by the Northwest Arctic Borough under its municipal entitlement. The following items should be carefully considered in developing policies and ordinances for the management of Borough-owned lands:

Use of Borough-owned Lands

Who gets to use Borough lands

- Borough lands are not public domain lands open to anyone who wants to use them.
- Borough lands belong to all the residents of the Borough for their use and enjoyment.

What uses are allowed on Borough lands

- Borough lands are reserved primarily for subsistence.
- Non-subsistence uses of Borough lands must be compatible with and not interfere with subsistence.

Compensation for Use of Borough Lands

- Compensation for the taking or use of certain types of resources on Borough lands will be required and the fee related to the fair market value of the resource. *(Please keep in mind that "resources" applies to those things which are on or in the land which are not reserved to the state or under the jurisdiction of another body. Fish and Game resources are an example of things which do not come with the land.)*
- The Borough will adapt its fee schedule for the use or removal of resources when the fee is determined to be in the public interest.

Appendix A

Permitting and Approval Authority

- The Borough Planning Director may issue permits for the temporary use of Borough lands and for the removal of certain resources.
- The Borough Planning Commission and Assembly must approve all leases and sales (long term uses).
- The Borough may assign its permitting authority to a village for certain permits in areas near the village.
- The Borough Planning Director must keep a record of all permits, leases and fees received. The Director must report permit activity and violations to the Planning Commission and Assembly in a monthly report.

Public Notice of Use of Borough Lands

- The Borough will give notice and an opportunity to comment to the neighboring community of an application for permit or lease.
- The Borough will require a public hearing prior to the sale or lease of Borough land or resources.

How Uses of Borough Lands are Treated

- The establishment of permanent structures on Borough lands requires a prior approval.
- Pre-existing uses which are not covered by a prior state or federal permit and uses in trespass will be evaluated on a case by case basis.
- Removal of certain resources from Borough lands requires a permit or, for long term activities, a lease.
- The removal of subsistence resources such as berries does not require any Borough approval.

Appendix A

- Entry on to Borough lands for some temporary purposes is by advance permit only.
- Borough land in some areas may be closed seasonally to protect subsistence resources.

Permits For Use of Borough Lands

The Borough will establish a simple tracking system. This will build a record of uses without requiring many stipulations to modify or direct peoples behavior. The Borough may develop a more complex tracking system in the future. This system would have detailed permit stipulations and policing and fines and etc. The more conditions, the greater the need for someone to monitor and enforce them. Specific permit requirements are presented below.

- Permits can be issued to an individual for an activity or for multiple activities.
- Permits can be restricted to a specific area or season.
- Permits can set specific amounts of resources to be used.
- The harvesting of timber or materials for sale to other people requires permit approval by the Planning Commission.
- Permits for the removal of resources on Borough lands are valid for a specific length of time or quantity.
- Permits and leases are not transferable without prior approval by the Borough.
- At sites utilized by more than one individual or family the Borough may issue joint use permits or declare the area a public site for permitted uses.
- Open burning may be prohibited during times of high fire danger by the Planning Director.

Table 3-2 examples of activities that could be subject to permits:

Table 3-2 Potential Use of Permits on Borough Lands

Personal Use Permit Uses

- Fish Camps
- Overnight Camping Sites
- Traplines
- Dog Camps
- Summer/Winter camps and cabins.
- Airplane landing areas

Personal Use Permit Resources

- Firewood
- House Logs
- Sand and gravel
- Xmas trees

Leases for long term use or removal of large amounts of resources (Approved by the Planning Commission and Assembly)

- Transportation Corridors and Right of Ways
 - Commercial uses
 - Industrial uses
 - Year around Residential (8 months or longer)
 - Trapping cabins
-

Administrative Considerations

Permit applications in each community to be filled out by applicant. Applicant keeps receipt with standard stipulations as proof of license. Borough will contact within 6 working days if additional stipulations or information required. The application includes an approximate legal description and a sketch of the area showing planned improvements.

When the permit system is initiated the Borough should have an open application period for existing uses. This period should be widely publicized to let everyone know that an application now will establish the use as preexisting and avoid possible fines or prosecution as trespass.

Appendix A

Examples of Standard Stipulations

- No live tree cutting or material removal less than 100 feet from shoreline.
- The permittee must conduct the activity in a safe manner and especially minimize disturbance to the shoreline and natural vegetation in the area.
- The permittee must contact the Planning Department when the activity is completed.
- Permits expire after the activity is completed or 60 days unless an extension is granted by the Borough.
- Existing roads and trails shall be used whenever possible. Trails and campsites must be kept clean. All solid waste shall be buried.
- The activity must be conducted in accord with adopted Borough Policies and the Borough Coastal Management plan if the activity is in the coastal boundary.

Other standard stipulations may be developed for specific activities such as off road vehicle use and gravel extraction.

Off Road Vehicle Use Stipulations (Examples)

- Motorized vehicles less than 1000 pounds do not require a permit to cross Borough lands.
- Stipulations for vehicles that weigh more than 1000 pounds will be developed from the standards used by the North Slope Borough, state and federal agencies.

Gravel Pit Stipulations (Examples)

- Excavation, placement of fill, grading, removal or disturbance of the topsoil of more than 10,890 square feet (¼ acre) or removal of more than 100 cubic yards of material on land, tidelands or submerged land requires a permit if the material is to be used for commercial purposes. Applicant must submit a grading plan. Planning Director shall inspect the site at intervals during operation or reclamation. Stipulations will address timing of the operation, fencing, reclamation plan and surety bonding.

Appendix A

Leasing of Borough Lands

The commercial, long term use or the granting of large amounts of Borough owned resources should be done by lease or sale. Permits will be used to address short term individual use. In some exceptional cases the sale of Borough lands may be considered. Leases and permits may be given out in either a competitive or non-competitive fashion.

Leasing Considerations

- Application for lease goes to Planning Commission for approval. The Commission will hold a hearing on the lease. Approval sends lease on to Assembly to review and ratify. The Assembly should have the option of holding another public hearing.
- Lease rates are at fair market value as determined by the Planning Commission or Assembly. The Borough may hire an appraiser to determine fair market value. Economic hardship or an offsetting benefit to the residents of the Borough may provide cause for a lease rate at less than fair market value. Leases to municipalities may be at less than fair market value.
- Lease periods are for the minimum time feasible to conduct the activity. The Borough will avoid long term leases unless direct benefits such as local employment or substantial direct revenue are derived from the activity.
- Lease conditions will require periodic review of the performance and the lease rate.

