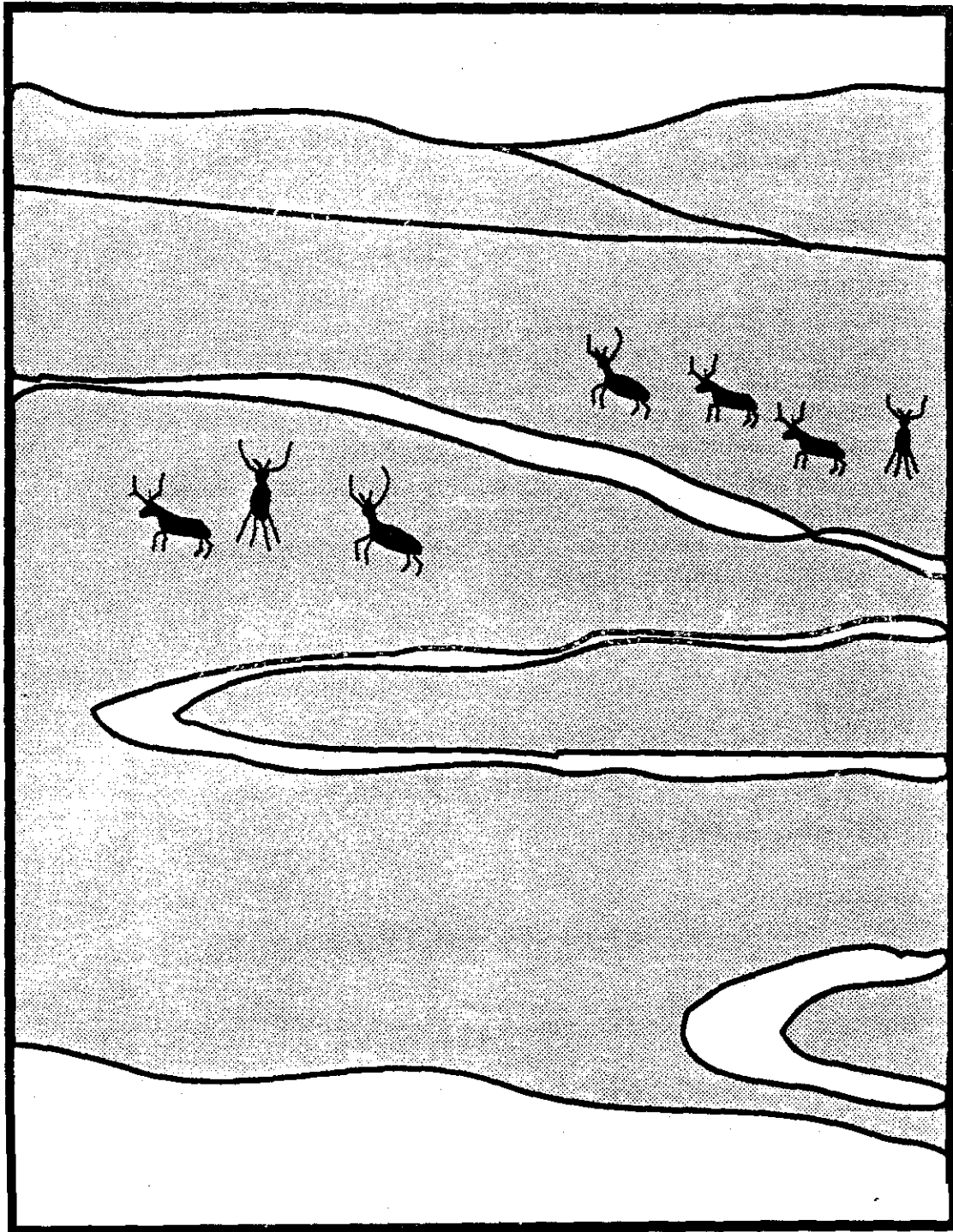


NORTHWEST ARCTIC BOROUGH  
**COMPREHENSIVE PLAN**



(effective October 1, 1993)

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

## NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN 1.0 INTRODUCTION

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### 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

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#### 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

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## **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

Fish and Wildlife

- manage lands within the Borough to protect and enhance important fish and wildlife habitat
- work with state and federal land managers to manage fish and wildlife resources and habitat to ensure that residents' concerns are addressed, and increase local participation in management decisions
- use land use plans and controls to protect and enhance fish and wildlife resources and habitat

Water Quality and Supply

- manage lands within the Borough to protect and enhance water quality, including groundwater, rivers, lakes and streams
- utilize land use plans and controls to protect and enhance water quality, including developing stipulations to protect water quality
- monitor mining and other commercial and industrial development projects to ensure that stipulations related to maintaining water quality are being followed
- help identify safe and adequate sources of water supplies for Borough villages

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## 2.5 LAND USE ISSUES AND OBJECTIVES

### ISSUES

- Lands within the Borough are managed by a variety of federal, state and local government and private groups; each has its own management plans and land use controls. Managers have worked hard to obtain local input in plan development; however, coordination with local organizations in implementing plans should be strengthened through mechanisms like the Regional Strategies

## Chapter 2.0: Issues, Goals, and Objectives

- Increasing public and commercial recreational use on major rivers and other areas within the Borough has created conflicts with traditional activities conducted by local residents. Federal, state and local land managers need to address this issue
- the Borough has not been able to use it's coastal management program and participation in state and federal planning efforts to successfully accomplish all of its land use objectives; local land use regulations would give the Borough more local control over land use activities within its boundaries
- The Borough will eventually receive title to lands under its municipal entitlement, and needs to develop a system for managing those lands in the best interest of Borough residents
- The lack of local land management standards has created problems in Borough communities, including difficulties in providing affordable or accessible land for housing and development of infrastructure. The Borough should assist communities and regional organizations in identifying and solving these problems

### OBJECTIVES

#### General Land Management

- develop an appropriate system of zoning, permitting and other municipal land use controls to attain Borough goals
- utilize existing plans and tools to the greatest extent possible, including the coastal management plan, the Northwest Area Plan, federal management plans and research, and private land management policies
- monitor land use to ensure compatibility with Borough and community goals
- ensure that residents have adequate knowledge about activities taking place in their area and provide an opportunity to participate in planning and approval processes

## *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

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## 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

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## **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**

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#### **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 6113. 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%
Klana	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

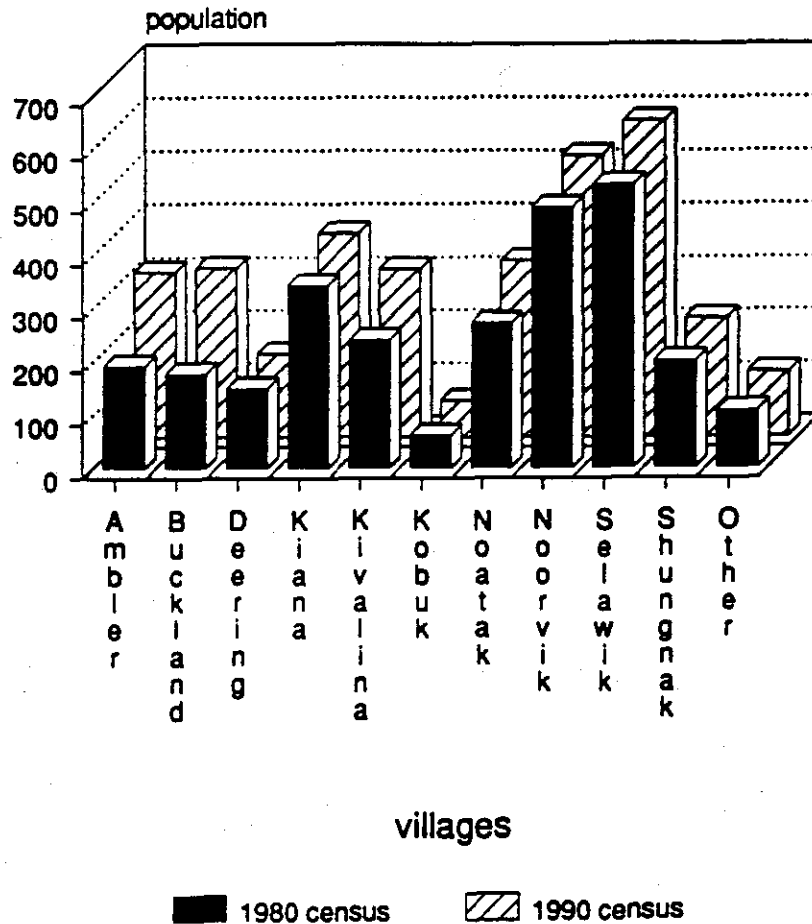


Figure 3-1

## *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 Maniilaq (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				Change in Total Units /2	1990	
	Total Units	Occupied Units	Vacant Units	% Vacancy	Total Units	Occupied Units	Vacant Units	% Vacancy		% persons/ change	household /3
Ambler	75	48	27	36.0%	79	71	8	10.1%	4	5.3%	4.4
Buckland	45	39	6	13.3%	70	69	1	1.4%	25	55.6%	4.6
Deering	35	35	0	0.0%	54	44	10	18.5%	19	54.3%	3.6
Kiana	107	75	32	29.9%	124	91	33	26.6%	17	15.9%	4.2
Kivalina	37	37	0	0.0%	71	67	4	5.6%	34	91.9%	4.7
Kobuk	37	16	21	56.8%	24	18	6	25.0%	-13	-35.1%	3.8
Kotzebue	690	565	125	18.1%	911	764	147	16.1%	221	32.0%	3.6
Noatak	78	59	19	24.4%	85	74	11	12.9%	7	9.0%	4.5
Noorvik	136	91	45	33.1%	138	107	31	22.5%	2	1.5%	5.0
Selawik	128	107	21	16.4%	154	129	25	16.2%	26	20.3%	4.6
Shungnak	54	47	7	13.0%	68	54	14	20.6%	14	25.9%	4.1
other	64	21	43	67.2%	220	182	38	17.3%	156	243.8%	0.7
<b>Total</b>	<b>1486</b>	<b>1140</b>	<b>346</b>	<b>23.3%</b>	<b>1998</b>	<b>1670</b>	<b>328</b>	<b>16.4%</b>	<b>512</b>	<b>34.5%</b>	<b>3.7</b>

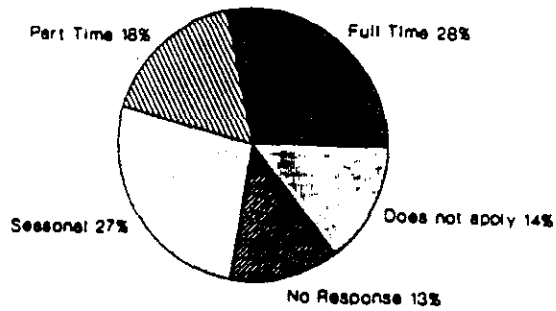
/1 - Doesn't account for condition of housing stock or persons per household

/2 - change in total units

/3- based on 1990 population and total occupied units

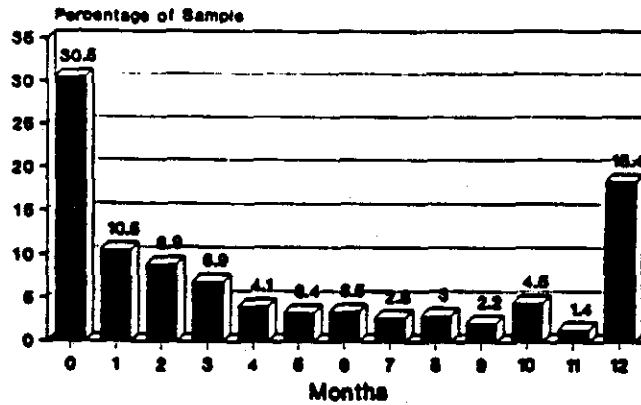
Source: Alaska Dept. of Labor 1991

## Status of Employment Figure 3-2



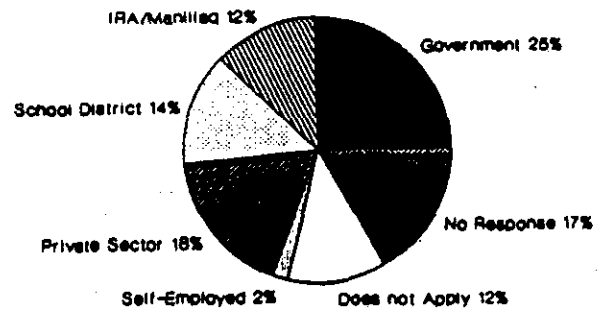
From McNabb, 1989

## 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

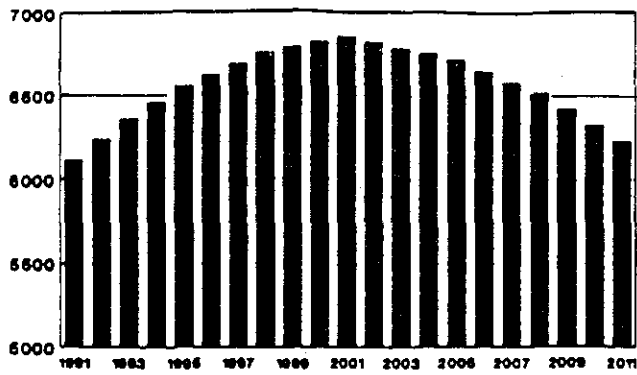


Figure 3-5

### Northwest Arctic Borough Population:Middle Scenario

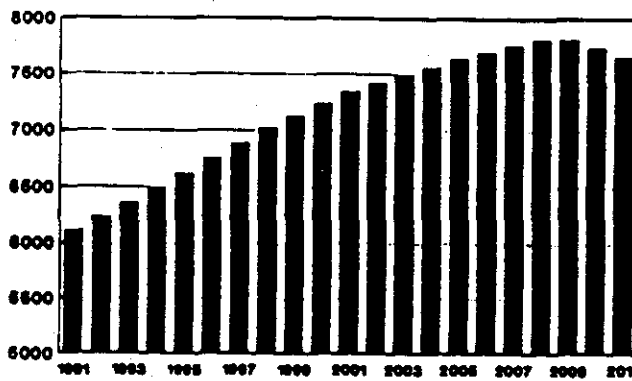


Figure 3-6

### Northwest Arctic Borough Population:High Scenario

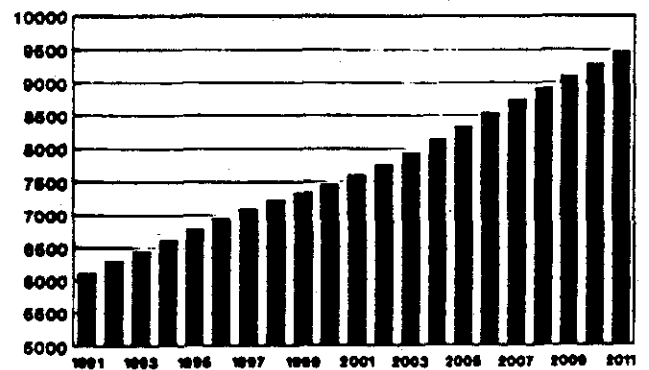


Figure 3-7

## Chapter 3.0: Borough Forecast

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, dependance 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*

- global natural gas prices remain low and the proposed gas line is not built (no additional state revenues);
- worldwide prices for minerals hold steady, and the Red Dog mine production continues at current levels and provide the mainstay for private development in the Borough;
- the commercial fur industry remains at current depressed levels, as social pressure closes many fur outlets;
- fish prices remain at current levels. The fish hatchery at Sitkisuliaq operates at current levels but expansion is not feasible; experimental fish marketing for whitefish and pike occurs with occasional local sales;
- subsidies for mail delivery continue at current level;
- power cost subsidies continue at current levels, 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; regional hospital in Kotzebue is built;
- within a decade mineral prices improve, and a second mining project similar to Red Dog is developed adjacent to Red Dog, utilizing the existing transportation system;
- the state proposes to construct a road or railroad system linking the Borough with the Railbelt; but is not found feasible and constructed;
- state program funding is relatively balanced in attempting to meet the needs of rural and urban residents;
- commercial recreation and tourism continues at current levels, with proposals for facilities near villages;
- state and federal government continue to offer onshore and offshore oil and gas lease sales in the area, but no major finds are made

The important outcome of the Best Guess scenario is the continued ability of area residents to enjoy traditional subsistence pursuits, combined with some conventional cash employment opportunities. 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. With astute political leadership and careful coordination, conditions in the Borough would remain stable and gradually improve.

## *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;
- o Development in ANWR is allowed, but no profitable oil or gas is found;
- o Worldwide prices for minerals remain depressed, forcing the slow-down and closure of the Red Dog mine; Borough revenues would be adversely affected;
- o Social pressure against the fur industry forces legislation banning the trapping and selling of furs for commercial purposes;
- o Subsidies for mail delivery end, reducing frequency of air service to villages and increasing costs;
- o Fish prices remain depressed, decreasing profitability of commercial fishing in the region. Neither continued operation or expansion of fish hatchery at Sitkisuliaq is not feasible;
- o 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.
- o Rural Alaska loses political clout in Juneau, and the state focuses its limited resources more on urban areas.
- o 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
- o 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.
- o 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;
- o Development in ANWR is finally permitted, and enough profitable reserves are found to link up with the Alyeska pipeline system;
- o Global natural gas prices remain low and the proposed gas line is not built;
- o Worldwide prices for minerals hold steady, and the Red Dog mine continues to provide the mainstay for private development in the Borough;
- o The fur industry remains depressed, as social pressure closes many fur outlets;
- o Fish prices remain at current levels. The fish hatchery at Sitkisuliaq operates at current levels but expansion is not feasible;
- o Subsidies for mail delivery continue, but remain vulnerable to cancellation;
- o Power cost subsidies continue, providing essential relief from high utility bills.
- o Educational funding continues at present rates.
- o State and federal funding to regional non-profits remains at current levels, maintaining health and social service programs
- o 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.
- o 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.
- o 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;
- o Additional major lead/zinc/silver mining projects are developed northwest of Red Dog;
- o the trans-Alaska gas line is built, increasing statewide employment and revenue;
- o 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;
- o 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.
- o Coal is also produced and shipped from the Chicago Creek mining area;
- o major offshore oil reserves are found and pipelines are constructed in several locations in the borough; local employment and revenue opportunities are created.
- o 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;
- o population in the borough increases dramatically, but a high percentage of the increase is from non-resident workers;
- o tourism also increases as many of the national parks and monuments become more accessible;
- o increased pressure is placed on subsistence resources;
- o increased federal, state and local funds are available for many social programs, such as public housing and power/utility subsidies;
- o the borough starts its own permanent fund;

**NORTHWEST ARCTIC BOROUGH COMPREHENSIVE PLAN  
4.0 LAND USE ELEMENT**

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**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

## Chapter 4.0: Land Use Element

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.

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## 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