# OVERVIEW & PLAN ORGANIZATION

## GOAL 1 EMERGE AS A SELF-SUSTAINING ENTERPRISE

## GOAL 2 PRESERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES

## GOAL 3 ADVANCE STRATEGIC PORT AND SMALL BOAT HARBOR DEVELOPMENT

## GOAL 4 FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE

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## APPENDIX A

## NORTH SLOPE BOROUGH ORDINANCE SERIAL NO. 2014-01-1

## REFERENCES

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<th>ACRONYMS</th>
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<tr>
<td>ADEC</td>
<td>Alaska Department of Environmental Conservation</td>
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<td>ADOT &amp; PF</td>
<td>Alaska Department of Transportation and Public Facilities</td>
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<td>AEWC</td>
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<td>Alaska Industrial Development and Export Authority</td>
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<td>ANWR</td>
<td>Arctic National Wildlife Refuge</td>
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<td>AOPA</td>
<td>Aircraft Owners and Pilots Association</td>
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<td>Arctic Slope Telephone Association Cooperative</td>
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<td>ASTAR</td>
<td>Arctic Strategic Transportation and Resources</td>
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<td>BCR</td>
<td>Benefit-Cost Ratio</td>
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<td>BRIC</td>
<td>Building Resilient Infrastructure and Communities</td>
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<td>BUILD</td>
<td>Better Utilizing Infrastructure to Leverage Development (Grant)</td>
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<td>DCRA</td>
<td>Division of Community and Regional Affairs</td>
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<td>Department of Homeland Security Transportation Security Administration</td>
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<td>International Maritime Organization</td>
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<td>LRDP</td>
<td>Long Range Development Plan</td>
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<td>NAB</td>
<td>Northwest Arctic Borough</td>
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<td>National Defense Authorization Act</td>
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<td>National Petroleum Reserve-Alaska (NPR-A)</td>
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<tr>
<td>NSB</td>
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<td>NSAP</td>
<td>North Slope Area Plan</td>
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<td>North Slope Port Authority (pre 2020)</td>
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<td>SCASDP</td>
<td>Small Community Air Service Development Program (Grant)</td>
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<td>TIFIA</td>
<td>Transportation Infrastructure Finance and Innovation Act</td>
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<tr>
<td>TIP</td>
<td>Transportation Improvement Plan</td>
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<td>USAF</td>
<td>United States Air Force</td>
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<td>United States Coast Guard</td>
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<td>United States Geological Survey</td>
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<td>United States Department of Transportation</td>
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<td>WIIN ACT</td>
<td>Water Infrastructure Improvements for the Nation Act</td>
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Alaska’s North Slope has entered an unprecedented period of transformation. Climate change is opening the Arctic to increasing levels of marine traffic, but also contributing to coastal erosion and more severe seasonal flooding. Federal and state policies favor investment in the region, yet oil, gas, and other industry activity remains weak. Work continues to realize a network of new roads linking North Slope communities, yet the regulatory complexity and financial barriers associated with advancing roads and other regional infrastructure projects remains daunting.

In response, the North Slope Borough (NSB or Borough), communities, industry, and other stakeholders have banded together to shape policy, prioritize investment, and ready themselves for change. One important response has been the formation of the North Slope Borough Port Authority Department (NSPAD or Department). Based in Utqiaġvik (Barrow), the NSPAD has set forth as its mission to:

“...plan for, finance, construct, operate and maintain transportation related facilities and activities within the boundaries of the North Slope Borough. These facilities and activities, or Projects, are intended to provide emergency response capability, environmental protection, improved efficiency of local cargo operations, facilitation of resource development and provision of training and employment opportunities for local residents” (Ord. 2014-01, § 4, 2014).

By organizing, enabling, and managing investments in essential infrastructure, the NSPAD will contribute to the economic and social betterment of North Slope citizens and industries. In this role, the Department can bring forth generation spanning economic and social benefit to communities of the North Slope and Alaska.

The NSPAD is also intended to provide a means to implement parts of the 2019 North Slope Borough Comprehensive Plan, Arctic Strategic Transportation and Resources (ASTAR) Plans, and other regional planning initiatives. The NSPAD also seeks to increase local employment and training opportunities as well as protect community subsistence values.
HISTORY OF THE NSPA

The timeline associated with the NSPAD’s founding is illustrated below. In the early 2000s, the NSB and North Slope citizens identified the need for formation of a regional entity capable of advancing investment in hard infrastructure—ports, roads, communication networks. Hard infrastructure and its counterpart, soft infrastructure (healthcare, schools, law enforcement), are the building blocks of communities. Availability of both infrastructure types is linked to economic prosperity (Puentes, 2015).

Through the work and effort of many throughout the NSB, the North Slope Borough Port Authority Ordinance was drafted and adopted in 2014. In the subsequent year, an NSPA executive director and board members were selected. Political turbulence, however, paused initial organizational steps and it wasn’t until 2018 that work commenced on the preparation of the Authority’s Long Range Development Plan (LRDP).
In 2019 while the NSB prepared its 2019 Comprehensive Plan and advanced other initiatives, the need for the Authority was again validated and the LRDP process reactivated in 2020.

On December 1, 2020, the Borough Assembly adopted changes to the NSPA enabling ordinance shifting the independent Authority to a Department under the NSB. The full updated Ordinance (2014-01-1) is provided in Appendix A.
Preparation of a LRDP is an essential initial undertaking of the NSPAD. The LRDP guides and prioritizes early actions and longer-term initiatives. It is a roadmap for the Department, covering all aspects of current and future operations, including:

- Construction and operation of sea, land, and air transportation and associated trades enabling facilities.
- Enabling infrastructure to provide emergency response capability, efficient commercial delivery of goods and services, resource development, and workforce training.

Provided herein is the first NSPAD LRDP. It should be considered a living document, updated at regular intervals to ensure it reflects a current slate of opportunities and challenges, investment priorities, and accomplishments. It should be used to guide annual Department planning and budgeting tasks.

Similar to the NSB 2019 Comprehensive Plan, the LRDP is organized around goals, each accompanied by specific objectives, and tactics in support of organizing and advancing NSPAD efforts and initiatives. Each, as defined below, plays an essential role in the LRDP:

- **Goals** are the big ideas and broad statements of what we want to achieve.
- **Objectives** provide a definitive measurement of our progress toward strategy achievement.
- **Implementing Strategies** describe specific steps to reach an objective or goal.
Through active discussions with the NSB and other regional stakeholders, five overarching NSPAD goals were identified. These five goals, illustrated in the accompanying graphic, provide a framework of how best the Department should be organized and what broad—and even bold—initiatives it should pursue.

The LRDP is organized into eight sections along with accompanying appendices. This first section—Overview and Plan Organization—provides an introductory guide to the NSPAD and LRDP.

Sections 2 through 6 discuss, in detail, the LRDP’s five goals. Each goal section is divided into subtopics covering issues and opportunities, how the NSPAD can make a difference, and connection with adopted 2019 Comprehensive Plan goals, objectives, and implementation strategies. Each goal section concludes with a listing of the objectives and implementation strategies associated with work towards achievement of the specific LRDP goal. Section 7 provides approaches for implementation of the LRDP. This section covers a number of topics, from NSPAD administration to budgeting. Section 8 offers a summary of the LRDP’s five goals and related objectives and implementation strategies.

GOAL 1
EMERGE AS A SELF-SUSTAINING ENTERPRISE. This goal addresses how best the NSPAD should be organized and function.

GOAL 2
PRESERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES. The NSB is moving forward on this important task through its work to bring airports of strategic importance under its administration.
GOAL 3

ADVANCE STRATEGIC PORT AND SMALL BOAT HARBOR DEVELOPMENT. Maritime is the first of three primary hard infrastructure groups for the NSPAD to evaluate, plan, and ultimately advance important initiatives.

GOAL 4

FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE. Road building is critical to the economic and social well-being of the North Slope.

GOAL 5

IDENTIFY AND INVEST IN INFRASTRUCTURE THAT ENHANCES SAFETY AND SECURITY. This goal outlines a number of related infrastructure types considered essential to the ultimate success of hard infrastructure investment.
THE NORTH SLOPE PORT AUTHORITY ADMINISTRATIVE ZONE

The NSPAD Administrative Zone covers the full extent of the northern coastline of Alaska, including stretches along the Chukchi and Beaufort Seas. The Administration Zone also includes the 94,796 square mile hinterland of the Borough running along the northern slope of the Brooks Range, including the National Petroleum Reserve-Alaska (NPR-A) and the Arctic National Wildlife Refuge (ANWR).

Utqiagvik is the largest town within the Administrative Zone and the political center of the North Slope. Prudhoe Bay, located approximately 200 miles east of Utqiagvik, is the most significant oil field in the United States and the start point of the 800-mile Trans-Alaskan Pipeline and region’s Dalton Highway. Other communities within the NSB include Point Hope, Point Lay, Wainwright, Kaktovik, Nuiqsut, Atqasuk, and Anaktuvuk Pass.

Its vastness, low population (9,872 in 2018), and inhospitable winters greatly limit mobility and trade to and from the North Slope. The area is served by three regional airports—Utqiagvik, Deadhorse, and Point Hope—and limited paved/gravel roads. Many North Slope communities are linked solely by snow trails and seasonal ice roads. Industrial dock facilities are found at Prudhoe Bay; the balance of the North Slope has no access to a deep-draft port and only seasonal ocean barge operations.
The ASTAR project, a collaborative effort initiated by the Alaska Department of Natural Resources (DNR) in partnership with the NSB, is actively studying and identifying approaches to expand regional infrastructure. ASTAR is seeking projects and project areas that may offer the most cumulative benefit to the region by prioritizing community and cultural connectivity, regional support, reduced cost of living, increased safety, and responsible infrastructure development. Preliminary ASTAR work and reports were released in the summer of 2020.

The NSPAD has potential to be a critical implementing and managing entity of ASTAR, the 2019 NSB Comprehensive Plan, and other identified infrastructure initiatives across the region. Expanded transportation and trade enabling infrastructure can link the region’s expansive resource base to global markets and provide increased economic resilience, safety, and security.
The NSPAD’s goals are not achievable without a resilient, sustaining organization able to guide and advance investment and operation of facilities under its care. The NSPAD is just getting started and needs to build a base from which it can gain momentum, add essential staff, manage assets, and seek out new projects to plan and deliver.

Goal 1 is this journey as an organization. From the strong functional foundation provided by the NSB, the NSPAD will build a team of project delivery and operational expertise to advance the Department’s mission to plan for, finance, construct, operate and maintain transportation related facilities and activities within the boundaries of the North Slope.

THE NSPAD WILL SUCCEED AS AN ORGANIZATION PROVIDED THAT IT CAN EMERGE AS A SELF-SUSTAINING ENTERPRISE
A port authority manages a portfolio of assets and projects to promote economic and social development of a place or region. Port authorities need to advance these aims while also protecting the environment (United States Environmental Protection Agency, 2020). Specialized responsibilities are often elevated as essential functions for an authority. In the case of the NSPAD, the “facilitation of resource development and provision of training and employment opportunities for local residents” falls into this category (Ord. 2014-01, § 4, 2014).

Advancing a port authority’s mission requires an administrative model aligned to its enabling regulation, jurisdiction, management of assets, variety and types of activities, mixture of public and private investment, preferred allocation of risks and rewards, and other factors. The administrative models used by port authorities and similar agencies in the U.S. and Canada vary. Common examples include (United States Environmental Protection Agency, 2020):

- **Autonomous (Independent) Port Authority.** A self-sustaining, self-governing public body.
- **Semi-Autonomous (Semi-Independent) Port Authority.** A public body subject to certain state controls.
- **Bi-State or Regional Port Authorities.** A public body created by agreement between two or more states.
- **Port Authorities with Limited Agency or Power.** A public body limited to certain actions such as bonding.
- **Divisions of State, County, Municipal, or Other Local Governmental Unit.** A government department.
- **Independent Districts.** Entities that function as “special purpose” political subdivisions of a state with defined geographic boundaries over which they have authority.

In Alaska, administrative models often establish a port, airport, and other similar resources as distinct divisions of the borough or municipal governmental unit. Advisory boards and commissions provide guidance and a range of oversight to an appointed director (e.g., Juneau, Anchorage) or the city or borough council.
(e.g., Ketchikan, Seward). The assets themselves are often established as “enterprise funds” or “enterprise departments” which under Alaska Law, allow transportation, utility, and other types of hard and soft infrastructure to have distinct accounting systems to record fees charged in exchange for services. Ideally, enterprise departments generate adequate revenue to support their operational costs and provide annual payments to the city or borough.

Port authorities, especially those administering hard infrastructure such as seaports or airports, tend to manage assets as either an operational port or a landlord port.

Under the operational port configuration, the port authority builds and owns the hard infrastructure and equipment needed for operations. The port authority hires labor to operate both sets of authority assets. The port authority takes an active role in attracting and maintaining the businesses and customers using the managed facility.

With the landlord port model, the port authority owns the hard infrastructure, which it then rents or leases to an operator. The operator invests in needed equipment, hires workers, and actively works to manage and grow business lines and consumers using the managed facility. Longer leases are often utilized to enable operator finance and investment in hard infrastructure maintenance and new construction.
Four main characteristics were considered in finding the right fit of an administrative model for the NSB.

- **Scalability.** The NSPAD does not own any assets, equipment, or manage labor. While this will change over time, the NSPAD currently needs little in terms of administrative capacity—all that is required is a single director and small support team. The group’s administrative model should be scalable, allowing it to start small and efficiently utilize resources, networks, and knowledge already present. As the NSPAD nurtures and grows a portfolio of assets specific to the needs of the communities and industries of the North Slope, the Department can expand to take on greater responsibilities and assets.

- **Access to Capital.** Funding the mission is an essential task of port authorities. Port authorities invest in infrastructure to generate income from operations and foster economic and social benefits to their respective service areas. They also seek grants and other public funding sources. Starting as a Borough Department, the NSPAD gains quick access to funding streams. Direct Borough funding will help the NSPAD gain financial footing and set the group on a potential path of financial self-sustainability once enterprise departments are established.

- **Oversight.** Port authorities are involved in an array of strategic planning, needs prioritization, decision-making, implementation of actions, and other functions. Effective governance requires accountability, integrity, and reliability (U.S. Government Accountability Office, 2007). The NSPAD needs effective oversight to be successful. It also needs directed leadership by an individual with competencies aligned with running an authority and successful investment and management of infrastructure.

- **Alignment with Community Values.** The administrative model selected for the NSPAD needs to reflect the values and uniqueness of North Slope’s residents. This includes fulfilling a role of provision of training and employment opportunities to North Slope citizens and the highest achievable levels of environmental stewardship associated with hard infrastructure investment and maintenance. It also requires alignment with the subsistence values of North Slope communities.
A DEPARTMENT OF THE BOROUGH

In weighing each of the administrative approaches commonly in practice, establishment of the group as a department of the North Slope Borough presents the most immediate benefits while also minimizing risks to the timely achievement of its mission. As a department, the NSPAD can leverage the resources of the Borough, including the Departments of Administration and Finance, Law, Planning and Community Services, Public Works, and others. The North Slope communities of Utqiaġvik, Anaktuvuk Pass, Atqasuk, Kaktovik, Nuiqsut, Point Hope, Point Lay, and Wainwright rely on each other to make economic and social gains. The NSPAD and its leaders have unique knowledge and expertise to identify issues and collaboratively engage the people.

These groups can actively work to identify and attract a department leader with needed experience to get the Authority off the ground. Finally, under the department administrative model, the NSPAD is aligned with the unique values and shared purpose of North Slope citizens (North Slope Borough, 2019).

The NSPAD will have immediate access to funds available through the Borough to provide seed money required to get underway. Capital markets and granting agencies available to the Borough can also be utilized. It can rely on elected oversight already in place provided by the Mayor’s office and Borough Assembly.
ALIGNED IN PURPOSE

By incorporating NSPAD as a department of the NSB, the group is aligned in purpose and shared values. This purpose, as recently detailed in the Adopted 2019 North Slope Comprehensive Plan, is as follows:

“North Slope Borough government provides quality infrastructure and public services while developing trusting, collaborative relationships with diverse partners. The Borough is proactive in protecting and promoting subsistence and cultural activities, enhancing health and safety, protecting the environment, and providing cultural, recreational, and economic opportunities while focusing on the region’s self-determination, sense of community, and Iñupiat values” (North Slope Borough, 2019).

Shared values consist of:

- With a strong sense of self determination and the guiding principle of “maximum local government” guaranteed by our state constitution, we will rediscover our founder’s vision for this Home Rule Borough.
- We will continue to embrace and value a strong sense of community through an active subsistence lifestyle that respects traditional wisdom and Iñupiat Values, while we welcome new technological advancements and contemporary knowledge.
- We will guide regional development in a coordinated, cost effective, efficient, and environmentally responsible manner.
- We will lift up and celebrate each community’s historical significance, wildlife habitats, clean air and water, and be responsible stewards of our abundant natural resources.
- We will endeavor to improve transportation systems and connectivity between villages and the rest of the state for the economic benefit of our residents.
GOAL 1

EMERGE AS A SELF SUSTAINING ENTERPRISE

• We must invest in and maintain reliable utilities, public infrastructure and community facilities in order to ensure quality essential services to all residents for perpetuity.
• There must be quality affordable rental and home ownership opportunities and upgrades to existing homes for all income levels to alleviate overcrowding and improve living conditions in this region. The Borough accepts a leadership role in providing solutions.
• Our education systems will prepare our youth and adults through training opportunities and programs tailored to meet the employment needs of this region first.
• Our government will promote healthy lifestyles, recognize service to community and inspire our children and adults to be thoughtful and well-informed and accept the responsibility for our future.
• We will strive for unity through more transparency in government, more education on the issues important to our region. We will participate as individuals; listening and communicating; engaging our youth and our elders; plan for our future and adapt to change when we need to, together.
The structure of the NSPAD is illustrated in the accompanying organizational chart. As shown, the Department joins the current 13 NSB departments. The NSPAD advises the Mayor and administration in all regional infrastructure projects and other initiatives under its purview.

A NSPAD Director is to be the face of the organization, responsible for managing and overseeing all functions of the Department. Envisioned under the Director are up to four divisions—airports, harbors, regional roads, and special projects—each administered by a separate individual. Separate enterprise funds could fall under each division. A Port Advisory Board would serve in a number of capacities, including evaluating activities, projects, and programs undertaken by the NSPAD.

The overall structure of the NSPAD would scale up over time as needs warrant. Initially, only the Director and small staff are required. The Director could also serve as the head of one of the Divisions, especially in the early years as the NSPAD gets underway. This team would expand as studies and projects move from feasibility to reality and overall management. The growth of the NSPAD organization and the recommended composition of the Port Advisory Board are detailed in Section 7, Plan Implementation.

The organization of the NSPAD assumes interface and resource sharing between other NSB Departments. As needed due to growth of the NSPAD, specific functions currently found in other NSB departments could be retained (directly or through outside consultancy) to address highly specific needs.
GOAL 1
EMERGE AS A SELF SUSTAINING ENTERPRISE

LONG RANGE DEVELOPMENT PLAN  NORTH SLOPE BOROUGH PORT AUTHORITY DEPARTMENT

AUTHORITY DEPARTMENT DIRECTOR

AIRPORTS MANAGER
AIRPORTS DIVISION
North Slope Airports (Enterprise Departments)

REGIONAL ROADS MANAGER
REGIONAL ROADS DIVISION
North Slope Regional Roads (Enterprise Departments)

HARBORS MANAGER
HARBORS DIVISION
North Slope Harbors (Enterprise Departments)

SPECIAL PROJECTS MANAGER
North Slope Special Projects (Enterprise Departments)
The ultimate mission and purpose of the NSPAD remains the same as enshrined in the original 2014 ordinance, namely:

“...plan for, finance, construct, operate and maintain transportation related facilities and activities within the boundaries of the North Slope Borough. These facilities and activities, or Projects, are intended to provide emergency response capability, environmental protection, improved efficiency of local cargo operations, facilitation of resource development and provision of training and employment opportunities for local residents” (Ord. 2014-01, § 4, 2014).

It is the role of the NSPAD to implement this mission by:

- Preparing, adopting, and updating of the NSPAD LRDP;
- Preparing annual budgets and strategic plans aligned with the LRDP and guidance provided by the Mayor and Assembly;
- Nurturing and growing a Department and related divisions to achieve the mission, goals, objectives, and tactics outlined in the LRDP;
- Advancing studies, analysis, planning, design, construction, operation, management, and transfer of hard infrastructure assets to include those associated with maritime, aviation, regional roadways, communications, and other similar endeavors;
- Evaluating activities, projects, and programs undertaken by the Department;
- Creating opportunities to expand training, education, and other opportunities to local citizens and businesses associated with NSPAD endeavors;
- Providing input and support for legislation and funding at the local, state, and federal levels; and,
- Engaging North Slope communities to foster understanding and support for Department activities, projects, and programs.
GOAL 1 LRDP GOALS, OBJECTIVES, AND IMPLEMENTING STRATEGIES

The NSPAD can fill an investment and management role in physical infrastructure, developing partnerships, and conducting research, feasibility analyses, and future needs assessments that will further village and regional public safety assets and communications.

GOAL 1: EMERGE AS A SELF-SUSTAINING ORGANIZATION

Objective 1: Foster the creation and expansion of the NSPAD to achieve its mission.

1.1.1: Nurture and grow a Department and related divisions to achieve the mission, goals, objectives, and tactics contained in the LRDP.

1.1.2: Advance studies, analysis, planning, design, construction, operation, management, and transfer of hard infrastructure assets to include those associated with maritime, aviation, regional roadways, communications, and other similar endeavors.

1.1.3: Ensure Department efficiency and accountability.

Objective 2: Plan for success.

1.2.1: Prepare, adopt, and update the NSPAD LRDP with a predefined frequency, typically 3 or 5 years.

1.2.2: Prepare annual budgets and strategic plans aligned with the LRDP and guidance provided by the Mayor and Assembly.

1.2.3: Scope and fund necessary studies and business planning for infrastructure investments.

Objective 3: Work together as a community.

1.3.1: Engage the community to foster understanding and support for Department activities, projects, and programs.

1.3.2: Seek local involvement consistency, especially through community leadership participation and input.
1.3.3: Actively participate in and promote public review and input into the writing, review and approval of any regional infrastructure plans or routes undertaken by the Borough, State of Alaska, or federal government within the NSB.

1.3.4: Participate in regular regional planning with neighboring boroughs, State of Alaska, and appropriate federal agencies.

1.3.5: Provide input and support for legislation and funding at the local, state, and federal levels.

Objective 4: Prepare and engage the workforce for employment associated with NSPAD infrastructure initiatives.

1.4.1: Create opportunities to expand training, education, and other opportunities to local citizens and businesses associated with NSPAD endeavors. Collaborate with Ilisagvik College, the State of Alaska, and industry. Seek out opportunities to expand vocational training in local schools and other venues.

1.4.2: Ready the workforce for specific skilled and technical jobs anticipated to emerge from NSPAD infrastructure initiatives.
GOAL 2
PREERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES

North Slope’s airports are essential infrastructure, linking communities throughout the region and the rest of Alaska and the lower-48 states. Airports and related aviation services provide ready access to people, goods, and medical services.

The critical nature of the region’s airports places them squarely within a need for long range planning, guidance, and investment—tasks all within the interest of the NSPAD. In this section, we explore Goal 2 which seeks to preserve the essential role of airport infrastructure and airlift for the North Slope.

AVIATION BUILT ALASKA, SUPPORTS THOUSANDS OF JOBS, AND CONTRIBUTES BILLIONS OF DOLLARS TO ALASKA’S ECONOMY
The aviation system is crucial in Alaska. According to the 2019 Report entitled The Economic Contribution of the Aviation Industry to Alaska’s Economy, 82% of communities are accessible only by air. From floatplane docks and rural general aviation centers to Anchorage’s international airport, each contributes to the quality of life enjoyed by Alaska’s businesses, residents, and visitors (State of Alaska Department of Transportation and Public Facilities, 2019). The aviation industry in Alaska supports more than 35,000 jobs statewide and contributes more than $3.8 billion to the state economy.

Nine public airports provide air transportation service to North Slope communities (North Slope Borough, 2019). Of these, Utqiaġvik (Wiley Post-Will Rogers Memorial Airport) and Deadhorse/Prudhoe Bay (Deadhorse Airport) are of strategic importance. Owned by the State of Alaska, and maintained by the State of Alaska Department of Transportation and Public Facilities (ADOT&PF), both facilities are hubs for passenger and cargo services in the region. Utqiaġvik and Deadhorse are linked to regularly scheduled direct and non-direct flights to communities throughout the North Slope as well as Anchorage and Fairbanks. Deadhorse Airport also connects to Dalton Highway and Alaska’s hinterland.

In addition to public airports, several unrestricted and restricted landing strips are found on the North Slope (North Slope Borough, 2019). Unrestricted landing strips are owned primarily by the State of Alaska and the Bureau of Land Management (BLM). Restricted landing strips are generally owned privately or by the federal government, state, or Borough. Several of these, such as airstrips at Kuparuk, Alpine, and Badami, are used regularly for oil industry activity (North Slope Borough, 2008).

Due to the heavy reliance on aviation in the state and North Slope, disruptions in air service can be consequential. Poor weather, equipment breakdowns, airline closures, and other events can result in impacts to entire regions. The COVID-19 Pandemic has had a major impact on aviation to, from, and within Alaska. Alaska Airlines has had to dramatically cut back flights due to falling demand. The airline reported its first ever quarterly loss in over a decade and sees the pandemic as “one of the greatest challenges in the history of commercial aviation” (Grove, 2020). Ravn Air Group, Alaska’s largest regional airline, also went out of business over this period. Ravn’s closure “exposed vulnerabilities in a supply chain that relies heavily on air travel to deliver everything … to hundreds of communities” (Associated Press, 2020).
## UNRESTRICTED LANDING STRIPS ON THE NORTH SLOPE BOROUGH

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<thead>
<tr>
<th>Airport/ Runway</th>
<th>Surface</th>
<th>Length (ft.)</th>
<th>Owner</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaktuvuk Pass</td>
<td>Gravel</td>
<td>4,760</td>
<td>NSB</td>
<td>Village airstrip - attended</td>
</tr>
<tr>
<td>Atgasuk</td>
<td>Gravel</td>
<td>4,370</td>
<td>NSB</td>
<td>Village airstrip - unattended</td>
</tr>
<tr>
<td>Utqiaġvik (Barrow)</td>
<td>Paved</td>
<td>7,100</td>
<td>State of Alaska</td>
<td>Village airstrip - attended</td>
</tr>
<tr>
<td>Barter Island</td>
<td>Gravel</td>
<td>4,818</td>
<td>USAF</td>
<td>Kaktovik Village airstrip - attended</td>
</tr>
<tr>
<td>Chandalar Shelf</td>
<td>Gravel</td>
<td>2,529</td>
<td>State of Alaska</td>
<td>Also called Dietrich Camp</td>
</tr>
<tr>
<td>Deadhorse</td>
<td>Paved</td>
<td>6,500</td>
<td>State of Alaska</td>
<td>Serves Prudhoe Bay oilfield</td>
</tr>
<tr>
<td>Echooka</td>
<td>Gravel</td>
<td>5,000 est.</td>
<td>State of Alaska</td>
<td>Unattended</td>
</tr>
<tr>
<td>Franklin Bluff</td>
<td>Gravel</td>
<td>5,000 est.</td>
<td>State of Alaska</td>
<td>Unattended</td>
</tr>
<tr>
<td>Galbraith Lake</td>
<td>Gravel</td>
<td>5,182</td>
<td>State of Alaska</td>
<td>Unattended</td>
</tr>
<tr>
<td>Happy Valley</td>
<td>Gravel</td>
<td>4,800 est.</td>
<td>State of Alaska</td>
<td>Unattended; seasonal recreational use</td>
</tr>
<tr>
<td>Kaktovik (new)</td>
<td>Gravel</td>
<td>4,500</td>
<td>NSB</td>
<td>Village airstrip - unattended</td>
</tr>
<tr>
<td>Kavik River Camp</td>
<td>Gravel</td>
<td>4,700 est.</td>
<td>State of Alaska</td>
<td>Attended, fuel</td>
</tr>
<tr>
<td>Nuiqsut</td>
<td>Gravel</td>
<td>4,589</td>
<td>State of Alaska</td>
<td>Village airstrip - unattended</td>
</tr>
<tr>
<td>Peard Bay</td>
<td>Gravel</td>
<td>2,000 est.</td>
<td>BLM</td>
<td>Unattended</td>
</tr>
<tr>
<td>Point Hope</td>
<td>Paved</td>
<td>3,992</td>
<td>State of Alaska</td>
<td>Village airstrip - unattended</td>
</tr>
<tr>
<td>Point Lay</td>
<td>Gravel</td>
<td>4,500</td>
<td>USAF</td>
<td>Village airstrip - unattended</td>
</tr>
<tr>
<td>Sagwon</td>
<td>Gravel</td>
<td>2,000 est.</td>
<td>BLM</td>
<td>Unattended</td>
</tr>
<tr>
<td>Square Lake</td>
<td>Gravel</td>
<td>2,100 est.</td>
<td>BLM</td>
<td>Unattended</td>
</tr>
<tr>
<td>Umiat</td>
<td>Gravel</td>
<td>5,583</td>
<td>State of Alaska</td>
<td>Unattended; used by Linc Energy</td>
</tr>
<tr>
<td>Wainwright</td>
<td>Gravel</td>
<td>4,494</td>
<td>NSB</td>
<td>Village airstrip - unattended</td>
</tr>
</tbody>
</table>
Longer range aviation trends in the state also present potential threats. These include:

- Low oil prices have created year-over-year state budget shortfalls. Shrinking budgets may result in delays to needed aviation facility maintenance and upgrade.
- Similar to the 2008-2009 recession, aviation service levels in Alaska will take time to recover fully post COVID-19. A gradual recovery will likely mean short-term demand may be higher than the supply of flights. This could translate into higher prices for available air service.
- The average age of Alaska’s general aviation aircraft continues to rise, reaching 50 years in 2019 (State of Alaska Department of Transportation and Public Facilities, 2019).
- Fewer new pilots are entering the industry. The increased cost of flight training and stricter regulations have led to both a pilot shortage and an aging pilot population (State of Alaska Department of Transportation and Public Facilities, 2019).
- Equipment availability and coverage areas for automated weather reporting remains a challenge, especially for smaller general aviation facilities.
The NSPAD can play an important role in safeguarding regional aviation facilities and services. Through assembly and management of a portfolio of aviation facilities, the North Slope can reduce risk to regional supply chains and increase economic and social benefits of North Slope residents and businesses. The NSPAD can also take an active role in promoting and supporting increases in aviation services and related businesses.
Aviation hard infrastructure—airports and real estate within and surrounding these facilities—and flight services comprise the North Slope aviation system. On the hard infrastructure side, the NSB owns and maintains four of the nine public airports—Anaktuvuk Pass, Atqasuk, Kaktovik, and Wainwright. Point Lay is owned by the U.S. Air Force (USAF) and maintained by the NSB. The region’s largest and most strategic airport facilities—Utqiaġvik, Deadhorse, and Point Hope—are owned and maintained by the state. In terms of aviation services, the region is almost entirely served by private operators and charters.

To increase aviation system resilience, a three-part strategy is recommended. First, seek ownership to the greatest extent possible the full portfolio of North Slope public airports. Second, link key aviation hubs to expanded secondary transportation infrastructure networks such as roads and boat harbors. Third, facilitate public- and private-sector collaboration to find ways air service provision can be more sustainable and resilient. The NSPAD has a role to play in each area.

A PORTFOLIO OF AVIATION ASSETS AND INFRASTRUCTURE

While privatization has many appealing attributes—from greater operating efficiencies to improved access to capital—only a handful of U.S. airports are privately owned and/or run (Poole Jr., 2016). While several factors contribute to the tendency of U.S. airports to remain public, one cited reason is the general sense that airports are operated for the benefit of the public, and as such, the public should retain ownership. This sentiment aligns well with the NSB’s values of self-determination and maximum local government (North Slope Borough, 2019).

The NSB has been moving towards greater control of key airports, opening up dialog with the state for transfer of Utqiaġvik, Deadhorse, and Point Hope under the process for a charitable and public land conveyance. Discussions with the ADOT&PF have progressed on transfer of Utqiaġvik and Point Hope...
aviation facilities in the near term, with the possibility of Deadhorse from DNR in the coming decade.

The current roadmap for asset transfer includes:

- Continued coordination with NSB (the entity taking ownership, or sponsor), ADOT&PF, FAA, and DNR to meet requirements established by all parties;
- FAA determination on the eligibility of the NSB as an owner. This review requires verification of the NSB as legally, financially, and otherwise able to assume and carry out the certifications, representations, warranties, assurances, covenants, and other obligations required of owners, which are contained in the Airport Improvement Plan project application and grant agreements forms;
- NSB review of deeds, titles, and other due diligence associated with airport facilities and associated lease lots;
- Final agreement with parties on lands and assets to be conveyed, reverter clauses, deed conditions, land management issues, state conveyed operational funding, and other topics; and,
- Transition and deeding of airports the NSB.

Detailed work effort is ongoing by the NSB on the multipart applications, exhibits, and plans required for FAA determination of eligibility. The goal is for Utqiaġvik and Point Hope airports to transition to the NSB by the end of 2021.

The NSPAD will be the administrative entity responsible for the management and operation of transferred airports. As such, the Department will need to be readied to fulfill this role in 2021 to follow organizational steps outlined in Section 7, Plan Implementation. To be ready for airport facility transfer, the NSPAD will need to:

- Prepare a detailed Airport Business Plan for Utqiaġvik and Point Hope airports. The plan will need to explore and forecast operations, revenues, and expenses associated with each location. It is assumed state budget resources will be provided to offset operational expenses over a period of several years. The Airport Business Plan will need to identify if each airport—and potentially others—are to be established as separate enterprise funds or a single entity able to offset revenues and costs across the portfolio.
The NSB’s approach to making the North Slope’s aviation system more resilient relies on effort in three areas: Acquire and administer key public airports; link these airports to expanded secondary transportation infrastructure networks; and work to facilitate public- and private-sector collaboration to achieve sustainable air service levels.

Emphasis in each area should be on improving efficiency, reliability, and service. In this way and as shown in the accompanying diagram, linked benefits accrue across a spectrum. Strategic, balanced investment of time and resources in each area is envisioned to yield benefits desired by North Slope citizens, businesses, administrators, and air service providers.
GOAL 2
PRESERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES

• Update master plans for both airports and identify needed capital improvements. Capital improvement budgets will be linked back to the business plan and any respective updates.
• Work to identify grants and other financial resources to budget and pay for identified capital improvement projects.
• Plan for and schedule annual reporting and other documentation required by the FAA, state, Department of Homeland Security Transportation Security Administration (DHSTSA), and others.

Once the NSPAD is fully established and as airport transfer of Utqiaġvik and Point Hope is underway, the NSPAD should renew/continue its effort for conveyance of Deadhorse Airport.

CREATING SECONDARY TRANSPORTATION LINKAGE RESILIENCY

The journey of passengers and freight typically does not end at the airport. Additional surface transport and other logistical assets are required to move people and goods to their ultimate destination. For North Slope aviation facilities, especially the key regional hubs of Utqiaġvik, Point Hope, and Deadhorse, the NSPAD with other NSB departments and local communities should organize secondary transportation infrastructure. Doing so will create efficiencies in the overall supply chain that translate into reduce travel times and costs.

Policy and investment areas for consideration by the NSPAD and other NSB departments and local communities include:

• Update airport master plans with an eye towards integration of facilities into the broader logistics network. Preserve land areas and alignments for future investments in infrastructure and needed commercial support services.
• Establish priorities for investment in logistical and surface transport features.
• Explore opportunities to develop long distance coach services linking hub airports to surrounding communities and villages.
• Seek multimodal and similar types of grants to help defray costs of implementation of secondary transportation systems.

By doing so, the NSB will help to increase its aviation resilience. The NSPAD should also foster a context to attract operators who may already be on the fence as to investing in the region.

Recommended approaches include:

• **Grants and Agreements.** A number of grant programs are available through the FAA and the U.S. DOT to support expansion of air services to communities. The NSPAD should explore all avenues and pursue grants that help to provide revenue guarantees, financial assistance for marketing programs, start-up costs, and studies. Examples include the Small Community Air Service Development Program (SCASDP) and Essential Air Service Program (EASP) administered by the U.S. DOT (U.S. Department of Transportation, 2020).

• **Bypass Mail Program Support.** Bypass Mail is a program that has subsidized cargo shipments to rural Alaska since 1972. It allows delivery of consumer goods and groceries to small communities at parcel-post rates (Ruskin, 2020). The NSPAD should support retention of this important program.

**INCREASING AIR SERVICE RESILIENCY**

Air carriers are the other side of the aviation system equation. Movement of people, food, mail, medical supplies, and other cargoes requires operators in the marketplace. Operators need routes that can sustain the operation, reliable aircraft, and skilled labor (e.g., pilots, mechanics). It can be challenging for operators to balance all three, especially in smaller markets and during an economic downturn (Associated Press, 2020).

The NSPAD’s primary role is in organizing, enabling, and managing investments in essential infrastructure. As such, the NSPAD should not play a direct role in funding and/or operating air services to communities on the North Slope. It should, however, help facilitate the public- and private-sector to work together to find ways air service provision can be more sustainable.
• **Small Business Support.** The NSPAD should actively work to provide knowledge and resources to help small airlines and supporting businesses survive and thrive on the North Slope. Support could include helping businesses with plan development, advice on employment and operating agreements, assisting in meeting FAA requirements, and others.

• **Research into Airline Co-operatives.** Airline cooperatives are an approach for consideration to expand airlift in the region to fill air service gaps in the marketplace. Shared Services Aviation is an example of a private sector model that used to be on the North Slope. This aviation service was a co-venture of ConocoPhillips and British Petroleum. Now controlled by Hilcorp (sold in 2020), Shared Aviation beings workers from Anchorage to the oil fields of the North Slope. Another example is Treq (Cooperative de Transport Regional du Quebec), where communities in Quebec become shareholders in their own airline (Dunn, 2020). The goal of Treq is to fill regional service needs created by the reduction in Air Canada service and to keep overall airfare costs low.

• **Study of New Technologies.** New technologies hold long term promise for North Slope communities. For example, autonomous vehicles and drones could deliver goods over longer distances with a lessened risk to pilots, address shortfalls in pilot availability, lower delivery costs per mile, and reduce impacts to the natural environment. Dirigibles are also being studied in Canada (Mertl, 2011). The NSPAD should work with public and private sector parties to identify opportunities to bring research and demonstration projects to the North Slope. Over time, these efforts could lead to breakthroughs as to how goods—especially lifesaving supplies and materials—are transferred to remote villages and locations throughout the region.

• **Work to Expand the Population of New Pilots.** The U.S. and Alaska continues to see declines in active pilots. This decline comes at a time when demand and job opportunities are increasing (Baker, 2017). The NSPAD should work with local flight training businesses, clubs, the Aircraft Owners and Pilots Association (AOPA), and other groups to encourage the training of new pilots that would fly in the region. Support could include directing aviation scholarships, such as those made available from the FAA, to North Slope residents.
Ensuring the sustainability and resilience of the aviation system on the North Slope is a key aspect of the NSPAD mission. The following goals, objectives, and implementing strategies outline the work of the NSPAD over the coming decade.

GOAL 2. PRESERVE THE ESSENTIAL ROLE OF AIRPORT INFRASTRUCTURE AND AIR SERVICES

Objective 1: Create a portfolio of aviation infrastructure that helps secure the North Slope’s aviation resilience.

2.1.1: Working with the state and FAA, complete the transfer of the airports of Utqiagvik and Point Hope to the NSB.

2.1.2: Continue to pursue the future transfer of the Deadhorse Airport to the NSB.

2.1.3: Seek opportunities to create secondary transportation and logistical infrastructure at Utqiagvik, Point Hope, and Deadhorse.

2.1.4: Study and prioritize aviation infrastructure investments at other regional community aviation facilities.

2.1.5: Explore and identify grants available to help offset costs associated with airport infrastructure development, expansion, and maintenance.

Objective 2: Support and grow air service to the North Slope

2.2.1: Explore and identify grants available to help provide revenue guarantees, financial assistance for marketing programs, start-up costs, and studies for air services.

2.2.2: Actively work to provide knowledge and network resources to help small airlines and support businesses survive and thrive on the North Slope.

2.2.3: Seek innovative ways new airline services and technologies can be brought to the North Slope.

2.2.4: Work to expand the population of new pilots on the North Slope.
The NSPAD is tasked with advancing and managing key infrastructure throughout the North Slope. One long sought-after piece of infrastructure is an Arctic deep-water port. This facility would serve communities and industries of the region, support increased regional shipping interests, and provide a means to respond to marine spills and other disasters. Under this section, we explore Goal 3 which calls for the NSPAD to plan, design, and construct a regional Arctic deep-water port and as deemed viable, supporting small boat harbors and facilities.

INVESTMENT IN PORT INFRASTRUCTURE WILL ALLOW THE NORTH SLOPE TO EMERGE AS AN IMPORTANT PARTICIPANT IN THE GROWING BLUE ECONOMY
The Blue Economy broadly defined refers to any economic activity in the maritime sector. Taking it a step further, many organizations focus on a blue economy approach to oceans, which supports economic growth, social inclusion and the preservation or improvement of livelihoods while at the same time ensuring the environmental sustainability of oceans and coastal areas (The World Bank, 2020).

North Slope residents have always depended upon the ocean for subsistence harvesting activities as well as blue economy activities for shipping goods to the Arctic. The shipping of goods occurs in the summer, with cargo barges carrying 3,000 to 5,000 tons of supplies to Point Hope, Point Lay, Wainwright, Utqiagvik, Prudhoe Bay, and Kaktovik (North Slope Borough, 2019). With no deep-water ports available along the North Slope, cargo barges have to be beached and unloaded using cranes, rubber-tired loaders, secondary barges, and other heavy equipment. This break bulk double-handling of goods and materials adds significant cost, is highly weather dependent and time consuming. It also adds significant cost to the goods that arrive to coastal communities.

In the area of marine subsistence, the ocean and rivers on the North Slope provide access to spring and fall whaling activities (North Slope Borough, 2019). Other marine subsistence pursuits include seal, or walrus hunting, and fishing the rivers with Chukchi and Beaufort seas access. Several North Slope communities have sought to build or improve boat ramps and related infrastructure to access ocean resources more easily.

Shipping and marine subsistence activities occur amidst a backdrop of Arctic climate change. Marine traffic has increased in recent years due to a relatively ice-free Arctic. Retreating sea ice is increasing the frequency of large vessel traffic transiting the Northwest Passage (via the Canadian Arctic) and the Northern Sea Route (via the Russian Arctic). The Arctic is potentially a faster, more direct route between Asia and ports in Europe and eastern North America (Jugal & Fountain, 2017). Scientists, economists, and logistics experts agree that marine traffic is likely to continue to grow in the Arctic as marine conditions continue to be favorable for these operations (U.S. Army Corps of Engineers, 2013).
As regional resource extraction activities increase, so too does the potential for accidental spills of oil and other contaminants. Spills could cause serious damage to fragile Arctic ecosystems and marine subsistence pursuits. Weather conditions pose a number of complications that can interfere with a timely and efficient cleanup effort. Thus, Arctic spills have the potential to be persistent and long lasting as the region has little capacity to respond (Waldman, 2017).

Finally, the opening of the Arctic and rush by many countries for strategic resources and new trade routes creates the potential for friction and a need for policing. While several nations are increasing policing and military presence in the region—Russia, Canada, Denmark, and Norway—the U.S. has been noticeably absent (Holland, 2014; Marques, 2021). The U.S. Department of Defense (DOD) has publicly signaled no current plans for the development of additional Arctic bases or deep-draft ports through 2020. The Department of Homeland Security (DHS) Science and Technology Directorate is advancing programs to enhance U.S. maritime border security in the region (U.S. Department of Homeland Security, 2020). The U.S. Coast Guard is also extending operations into the Arctic during ice-free summer months.

As an enabler of strategic infrastructure, the NSPAD has an important obligation to study, invest, and manage strategic marine facilities on the North Slope. NSPAD investments and activities would need to balance the varied interests and issues outlined above. Three key categories of infrastructure are suggested in the LRDP: Arctic deep-water port development, small boat harbors, and environmental protection and incident response.
WHERE THE NSPAD CAN MAKE A DIFFERENCE

ARCTIC DEEP-WATER PORT DEVELOPMENT

Because of its strategic location at the northernmost point in the United States and its access to the Chukchi and Beaufort Seas, and the Arctic Ocean, Utqiaġvik is well positioned to serve as a hub for Arctic multi-modal transportation. State, federal, and private user groups have publicly stated a need for a port(s) in this area.

Key rational to this end includes (State of Alaska, 2020):

- Maintaining sovereignty in light of increased Arctic traffic and activity;
- Diversification of Alaska’s economy;
- Arctic Search and Rescue coverage/responsibility; and,
- Protecting U.S. air, land, and sea borders.

While the North Slope would greatly benefit from the presence of a port in the region, each of the above is predominately a state and federal issue.

Two significant public assessments have been conducted to evaluate development of a port in the Arctic. These are summarized below.

- **USACE Alaska Deep Draft Arctic Port Study (2013).** Reporting from the first (of three) years of study to enhance the Alaska-Deep Draft Port System (U.S. Army Corps of Engineers, 2013). North Slope communities reviewed as part of this assessment included Cape Thompson, Wainwright, Port Franklin, Utqiaġvik, Prudhoe Bay, and Mary Sachs Entrance. Recommendations of note included the following:
  1. Invest strategically to enhance the Arctic Ports System. Include deep-draft solutions for resource export and support, as well as improvements appropriate for USCG, environmental protection, search and rescue, and community resupply.
  2. Assign lead federal agency responsibility to the USACE for permitting, design, and construction of the Alaska Deep-Draft Arctic Port system.
  3. Encourage private entities/banks and authorize other public agencies to collaborate in funding and constructing marine infrastructure.
  4. Conduct follow-on feasibility analysis of shortlisted sites (Nome and Port Clarence).
  5. Utilize the new DoD Arctic Security funds for Arctic Region Port Authority needs.
• **USACE Alaska Deep Draft Arctic Port Study:** Draft Integrated Feasibility Report, Draft Environmental Assessment, and Draft Finding of No Significant Impact (2015). More detailed feasibility analysis, with focus placed on Nome and Port Clarence (U.S. Army Corps of Engineers, 2015). Follow-on assessment was paused in October 2015 after Shell terminated oil exploration in the Chukchi Sea following a “disappointing” search process (Sopher, 2018). In February, the USACE announced a new feasibility study to examine construction of navigation improvements at the Port of Nome (Lindsey, 2018). Much of this change resulted from the federal government’s December 2016 passage of the Water Infrastructure Improvements for the Nation Act (WIIN Act) which adds national security benefits associated with an Arctic deep draft port to USACE criteria (Sopher, 2018).

An Arctic Port Access Route Study (PARS), sponsored by the USCG, is anticipated to commence in 2021. The purpose of the Arctic PARS is to bring together the need for safe access routes with other reasonable waterway uses (Pacific Environment, 2020). The work also seeks to reduce the risk of marine casualties and increase the efficiency of vessel traffic in the study area.

Recommendations from Arctic PARS may lead to future rule making or international agreements, such as those with the International Maritime Organization (IMO).

 Whereas Nome continues to be the near term focus for creation of a deep-water Arctic port, room exists over the next 10 to 25 years for additional development of port facilities focused on the provision of support for communities and industries along the North slope as well as to address issues within the national interest. The NSPAD needs to work closely with the USACE, the state, and industries to define port program elements, identify and select a preferred location for in-water and upland improvements, seek designation of a federal navigation channel, and explore delivery approaches for creation of a strategic facility along the North Slope. If the USACE is to be a participant in funding of dredging, breakwater creation, or other aspects associated with new port facility (or small boat harbor) development, the project would need to show a positive Benefit-Cost Ratio (BCR). Projects missing this threshold do not typically proceed into development.
PORT DEVELOPMENT IN 
ELSON LAGOON

The 2013 Alaska-Deep Draft Port System report used a multi-criteria decision analysis tool to evaluate candidate sites throughout the region (U.S. Army Corps of Engineers, 2013). Site criteria included: Port proximity to mission (oil, gas, and mining as key drivers); intermodal connections; upland support; natural water depth; navigation accessibility (wind, wave, ice conditions); and other factors (sovereignty, roads, environmental/NEPA, maintenance, harbors of refuge, and land ownership). While Utqiagvik was listed as having several strengths, it was not elevated as a shortlist candidate for follow-on feasibility assessment.

Opportunities remain available for port development in Utqiagvik. While several infrastructure priorities are outlined in the LRDP, the NSPAD should continue to explore prospects along the North Slope for port development aligned with industry need, anticipated economic benefit, and alignment with community values. One possible location is Elson Lagoon. The sheltered nature of the area provides inherent strengths for marine facility development. Extension of a trestle and platform from the eastern shore to a position in the lagoon that meets deep water could be a cost-effective approach to creating a small initial facility capable of being scaled to a larger footprint to meet new market opportunities.

At an appropriate time, the NSPAD should prepare a preliminary program and basis of design for this location as well as other identified on the North Slope, especially in and around Prudhoe Bay. Initial work should also identify gaps in data for selected locations, strategies for accomplishing needed feasibility study(ies), and approaches to project finance.
GOAL 3
ADVANCE STRATEGIC PORT AND SMALL BOAT HARBOR DEVELOPMENT

CHUKCHI SEA

ELSON LAGOON

Option A Access
Roadway / trestle linking to port

Option B Access
Roadway / trestle linking to port

Port Expansion Area
(As needed)

Multi-Purpose Port Area
(Cargo, Coastal Guard, Oil Spill Response and Related Operations)

Vessel Navigation Area
(bathymetry to be mapped / approaches to be designed)
SMALL BOAT HARBOR DEVELOPMENT

Small boat harbor development has the potential to address issues of lack of community connectivity to essential cargo and subsistence activities. Community input generated during the 2019 Comprehensive Plan process indicated improved ocean access presents an opportunity to reduce the cost of shipping goods, improve the logistics of fuel delivery, broaden the season goods can be delivered, and improve communications (North Slope Borough, 2019). These facilities, however, may present challenges to small communities, such as unregulated traffic and borders, subsistence conflicts, and increased likelihood of oil and other environmental hazard spills.

The NSPAD should study and assess the benefit associated with creating a network of small boat facilities along the North Slope. Highly strategic locations—those presenting low development costs, sites with road access to the hinterland, and areas that support a large population base—should be identified and prioritized for further evaluation.

Any development of small boat harbors or other types of marine assets needs to balance benefits and costs associated with implementation. The development of these marine assets may face project cost levels that are unsustainable within the context of the community served. Similar to port development, if the USACE is to participate in the funding of small boat harbor infrastructure, the project will need to show a positive BCR or else it will not proceed to development. Other sources of funding should be explored as outlined in Section 7. The NSPAD will need to carefully weigh capital outlays associated with all small marine facility development. At minimum, the NSPAD should establish standards for communities to follow in creation and expansion of small craft marine facilities.

The planning, permitting, and design of boat ramps and small boat harbors should consider:

- Community desire and need;
- Vessel types and users anticipated for the facility;
- Type of asset required to meet vessel and user needs, such as a singular vessel ramp or more substantial harbor;
- Ice, wind, wave, climate and other conditions;
• Facility location and upland access points;
• Environmental impact;
• The potential to derive revenues to offset project costs; and,
• Availability of grants and other funding sources.

Design manuals and best practices should be followed for entrance features, breakwater and basin design, wave protection, inner harbor structures, land base support facilities, and other elements (American Society of Civil Engineers, 2020).

The NSPAD should also work in consultation with the Northwest Arctic Borough (NAB). The NAB has worked on small boat harbor efforts and there may be an opportunity for “lessons learned” including funding opportunities and suggestions for working with state and federal agencies.

ENVIRONMENTAL PROTECTION AND SPILLS RESPONSE

The North Slope coastline and surrounding seas are unique in the world. They are the biological heart of the Arctic and ANWR. The Beaufort and Chukchi Seas are home to ecologically and culturally important species such as the bowhead whale, beluga whale,

The Alaska Eskimo Whaling Commission (AEWC) works annually with industry partners to develop conflict avoidance agreements. These agreements implement mitigation measures that allow industry to conduct work while maintaining the availability of marine mammals for subsistence hunters. One important aspect of these agreements are time and area closures. Those closures allow subsistence whale hunting activities. After the bowhead quota is filled or a village completes their hunt, industry can resume work (North Slope Borough, 2019).

Creation of NSPAD marine assets will necessitate a broadening of dialog with the NSB, village corporations, tribal and city governments, AEWC, and others to establish conflict avoidance agreements and other best practices for marine facility operation.
gray whale, ringed seal, bearded seal, spotted seal, walrus, and polar bear (North Slope Borough, 2019). These areas also provide culturally important subsistence harvest activities, a tradition exercised by Native Alaskans for thousands of years and an essential component of Alaskan Native cultural identities. The health of ocean and coastal habitats is of paramount importance to the NSB and state.

Investment in ports and small boat harbors will have environmental impacts associated with construction and operation. The beneficial attributes of each potential project need to be weighed against project costs and environmental impact. Careful site selection is required. Anticipated impacts need to be mitigated to the greatest extent possible throughout project feasibility, planning, permitting, construction, and operation.

The potential for conflicts resulting from inadequately planned marine infrastructure has the potential to negatively impact the subsistence lifestyle practiced by many residents on the North Slope (North Slope Borough, 2019). While small boat harbors and other marine facilities could improve access to subsistence areas, there is also recognition that marine life (e.g., bowhead whales) can be sensitive to noise and boat traffic. Conflicts between marine and subsistence activities will need to be fully explored and mitigated to the greatest extent possible.

Beyond the value of marine commerce and access to sustenance resources, two additional areas of focus should be advanced to help derive greater benefit from investment in marine facilities. Environmental research of the Arctic is flourishing and is critical for understanding complex Arctic systems in order to support effective protections, make communities more resilient, and create sustainable economies. A port and small boat harbors increases access and reduces the cost of these functions, providing a gateway for grant funding and research opportunities as well as the potential for sustainable economic growth. Creation of a center for Arctic marine research, polar sciences, Arctic resilience, and similar activity should be considered in marine infrastructure planning activities. Outreach and partnering with NOAA, Ilisaqvik College, the University of Alaska, and other higher institutes of learning should be pursued. Facilities should proactively involve students and young adults on the issues and opportunities to protect and enhance the marine environment.
Arctic communities and industries are poorly prepared to respond to an oil spill in the region (National Academy of Sciences, 2014). Oil spills of the magnitude of BP Deepwater Horizon and Exxon Valdez disasters would have catastrophic impacts throughout the region and few ways to be able to respond quickly to stem environmental damage (Nunez, 2014). National Academy of Sciences’ reporting identified five gaps that need to be addressed by the U.S. and region to prepare for an oil spill in the Arctic:

- Expand research on oil properties and spill response techniques in an Arctic environment;
- Increase technology and mapping of the Arctic region and shoreline;
- Expand USCG presence in the region;
- Collaborate with Russia, Canada, Norway, and other nations to develop and conduct joint spill response approaches and exercises; and,
- Develop plans to rehabilitate wildlife impacted by an oil spill.

Creation of a deep-water Arctic port and small boat harbors along the North Slope would provide critical access points for emergency marine spill response. In the planning and development of a deep-water Arctic port, attention should be paid to the programming of space for staging of equipment for use in an oil spill incident—mechanical recovery and containment assets, response vessels, storage, dispersant, tools, remote sensing equipment. The NSPAD should collaborate with the Alaska Department of Environmental Conservation (ADEC), the USCG, certified oil spill removal organizations (e.g., the Marine Spill Response Corporation), industry partners, and other state and federal agencies to fund and create facilities able to meet the challenges associated with an oil spill. Furthermore, the NSPAD can be instrumental in coordinating development of a comprehensive disaster plan for use in identifying the critical paths and methods associated with oil spill response, staging of activities, and wildlife rehabilitation.
Advancing maritime infrastructure is a key aspect of the NSPAD mission. The following goals, objectives, and implementing strategies outline the work of the NSPAD over the coming decade.

**GOAL 3. ADVANCE STRATEGIC PORT AND BOAT HARBOR DEVELOPMENT ON THE NORTH SLOPE.**

**Objective 1: Implement development of a deep-water Arctic Port on the North Slope.**

- **3.1.1:** In consultation with the NSB, agencies, and regional industries, prepare a detailed programming and siting criteria study for a deep-water port on the North Slope.

- **3.1.2:** Conduct detailed site assessment and select a preferred location for a deep-water port on the North Slope.

- **3.1.3:** Work with the state and federal agencies to study and ultimately designate the area as a federal navigation channel.

- **3.1.4:** Identify project partners and structures for development.

**Objective 2: Foster the development of small boat facilities and harbors as determined through community and industry outreach.**

- **3.2.1:** Study and assess the benefit associated with creating a network of small boat facilities along the North Slope.

- **3.2.2:** Weigh the potential for NSPAD investment in highly strategic locations for small boat facility and harbor development.

- **3.2.3:** Establish standards and best practices for small communities to follow in creation and expansion of small craft marine facilities.

- **3.2.4** Explore the need for broadening conflict avoidance agreements and other best practices for marine facility operation to minimize impacts of marine assets on subsistence activities.
Objective 3: Leverage port and harbor assets for marine research activities.

3.3.1: Partner with agencies and institutions to program, design, fund, construct, and operate marine research facilities and activities from NSPAD port and harbor facilities.

3.3.2: Use port and harbor facilities to study how best to respond to oil spills in the Arctic.

3.3.3: Encourage use of unique marine research assets to involve students and young adults on the issues and opportunities to protect and enhance the marine environment.

Objective 4: Ensure port and harbor assets are designed, developed, and utilized to provide critical response to regional oil spills and other hazards to the environment.

3.4.1: Partner with ADEC, the USCG, oil spill removal organizations, North Slope industries, and other agencies to program, design, fund, construct, and operate an oil spill response center from NSPAD port and harbor facilities.

3.4.2: Work with the NSB, village corporations, tribal and city governments, state and federal agencies, USCG, industry partners, and others to identify the critical paths and methods associated with oil spill response, staging of activities, and wildlife rehabilitation.

3.4.3: Advocate for USCG expansion into the Arctic region, including federal funding for development of vessels and equipment to be based year-round in the region.
GOAL 4

FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE

No permanent roads connect the villages of the North Slope to the Alaska road network. A single transportation corridor—Dalton Highway—links Deadhorse and Prudhoe Bay oil field industries to the rest of the state. The construction and maintenance of corridors for community access occurs seasonally, but these come at a significant annual expense to the NSB.

Community members travel widely across the North Slope for subsistence purposes as well as to maintain strong connections to the land, family, and the environment. The lack of linking reliable surface transportation infrastructure makes maintaining these connections difficult. It also leads to rising costs of goods and materials delivered to the North Slope.

In this section, we explore Goal 4 which looks to the NSPAD and NSB to foster an expanded network of roadways and other surface transportation elements linking communities and commerce.
Surface transportation systems on the North Slope generally consist of three types:

- Statewide surface transportation systems, linking communities and industries. Of this type of surface transportation, only the Dalton Highway is available in the North Slope. AIDEA recently agreed to share development costs on the “Amber Road” for Amber Mining Co.
- Inter-village connectivity surface transportation systems. At present, this type of system exists in limited amounts (permanent and seasonal) and is of perceived greatest need.
- Intra-village surface transportation systems, such as local village roads and streets. In this last category, most villages have need for expanded and improved roads to accommodate growth, housing, and other needs. As noted under the aviation section, these streets need to link to inter-village networks and other secondary systems to allow for greater community connectivity and logistical services.

While important needs exist in each of the categories above, the LRDP and NSPAD are focused on infrastructure improvements in the first two areas. Local streets and roads remain important and subject to highly coordinated planning and funding by the NSB, the Department of Public Works, and each respective village.

As noted in the 2019 Comprehensive Plan, improvement of regional surface transportation systems has the multi-purpose benefit of providing “subsistence access and community economic development along the same routes that are shared with natural resource exploration and development” (North Slope Borough, 2019). The challenges, however, to delivery of more robust regional surface transportation systems are significant:

- Distances between North Slope communities are vast. The closest communities are Utqiaġvik and Atqasuk (58 miles), while the greatest distance between any two communities, Kaktovik and Point Hope, is 588 miles (North Slope Borough, 2019).
• The costs to construct and maintain seasonal and permanent roads are substantial. Long distances between communities require greater expenditures in gravel, bridges, flood and erosion protection, and other features. Seasonal roads—such as the annually constructed 300 miles of Community Winter Access Trails—can cost up to $10 million annually to develop.

• Regional roads traverse a wide variety of landowners, land managers, regulatory entities, and others in need of consideration when planning regional surface transportation.

• Flooding and erosion, to varying degrees and locales, impacts surface transportation systems and increases the need for maintenance. Climate change is accelerating these impacts as well.

### DISTANCE BETWEEN NORTH SLOPE COMMUNITIES

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<th>Anaktuvuk Pass</th>
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as contributing to a shorter season for the construction and use of ice roads.
• Too much access—especially from those outside of the region—can be detrimental to subsistence activities and create public safety concerns.

The NSB, state, oil and gas industry, and other groups have been actively working to overcome these challenges and seek meaningful ways surface transportation systems can be developed and interlinked. One important effort discussed previously is the ongoing study and work under the ASTAR initiative. Started in 2018, ASTAR is using a cumulative benefits approach analysis across the North Slope to identify options for an all-weather transportation network. This approach seeks to find appropriate, balanced strategic opportunities for infrastructure development to connect communities and enhance resource development. ASTAR and the outputs of its work will also be used to guide the decisioning making process and funding of selected projects and corridors for improvement.

How these corridors get built and maintained remains an issue, and similar to its approach to aviation and port regional servicing infrastructure, the NSPAD can play a central role in providing a solution. The NSPAD can serve as the primary implementing entity for regional surface transportation projects identified in the 2019 Comprehensive Plan, ASTAR efforts, and the North Slope Area Plan.
INDUSTRY BUILT ROADS

For many years the oil and gas industry has been involved in road development on the North Slope, especially projects linking mineral assets and communities in and around the western end of the Borough. By example, ConocoPhillips and the Kuukpik Corporation constructed 5.8-mile road connecting the community of Nuiqsut to the CD-5 Access Road. The Kuukpik Corporation owns and maintains road.

This 5.8 mile road has several purposes (North Slope Borough, 2019). It provides Nuiqsut residents’ access to the Alpine Development Project for job opportunities, and subsistence activities. It improves health and safety by providing a secondary connection between the Nuiqsut and Alpine airports in the event someone requires immediate evacuation. The road provides permanent Nuiqsut residents access to the spur road, which connects the community to ConocoPhillips’ gravel oil field service roads leading to Alpine and some of its satellites in the Colville River Delta and in NPR-A, and to winter ice roads that connect to the Spine Road.

Continued work with oil, gas, and other North Slope industries will be important to achieve an expanded surface transportation network in the region at a reduced cost to the public sector. The goal will continue to involve balancing issues of community access, subsistence, environmental impact, and economic development.
WHERE THE NSPAD CAN MAKE A DIFFERENCE

MODEL A HYBRID OF A REGIONAL TRANSPORTATION PLANNING AND TOLL ENTERPRISE

In its approach to regional surface transportation development, the NSPAD needs to find a hybrid model between conducting planning and decision making similar to that of a Metropolitan Planning Organization (MPO) and capital road building similar to that of a Toll Authority/Enterprise. In this way, the NSPAD and its respective Regional Roadways Division can review and prioritize initiatives and then pivot to facilitate development.

On the planning side, the NSPAD needs to consider the development of a structure to tackle the following core functions:

- Create review and decision making approaches for surface transportation projects in the Borough administrative region. Projects would be identified by the NSPAD, NSB, ASTAR, the private sector, and others. Chief collaborators within the NSB would include the Planning and Community Services and Public Works Departments.
- Evaluate alternatives and realistically available options, including working with local villages and the general public.
- Develop and maintain a regional transportation plan comprised of ongoing efforts, studies, and priorities. The regional plan could be a component chapter of the NSPAD’s annual budgets and strategic plan development process.
- Create a fiscally constrained surface transportation improvement program based on the regional transportation plan and spending, regulating, operating, management, and financial factors.
- Protect environmental and subsistence issues throughout the planning and project review process. Seek opportunities to balance needs and form solutions aligned with community values and the uniqueness of the North Slope.

Most MPOs have no authority to raise revenues, and as such, the NSPAD needs to also look at approaches of having planning and capital improvement programs similar to that of a toll authority/enterprise.
ADVANCING PLANNING INITIATIVES AND WORK

The NSPAD will need to advance regional surface transportation building projects. From its Transportation Improvement Plan (TIP) and planning, a method of project prioritization will have been established. For each project, a specific approach as to how seasonal and/or permanent projects are funded and built will need to be established.

The NSPAD will want to consider:

- Develop Public Private Partnerships (PPP) approaches with oil, gas, and other North Slope industries.
- Explore approaches to toll or pay for use regional transportation facilities.
- Identify and secure federal and state grants to help offset project costs.
- Develop corridor management plans that consider issues of access, subsistence, security, and wildlife management.

Detail on funding approaches is offered in Section 7.

ASTAR cumulative benefits analysis has already looked at three key regional roadway segments for all-season gravel road development.

These include:

- **A. Utqiagvik and Atqasuk.** Under this analysis, Corridor A (coastal route) was recommended for additional study.
- **B. Utqiagvik to Wainwright.** For this analysis, Corridor D (coastal route) was found to be the most favorable route for extending the road network to Wainwright.
- **C. Existing gravel roads west of Deadhorse across the Colville River.** Under this analysis, Corridors 1 and 2 we felt to be the most favorable alternatives for the Colville River Crossing. Both crossing points are the northernmost options reviewed. The NSPAD has also reviewed opportunities to create a gravel road to replace the +/- 18-mile Alpine resupply ice road in Nuiqsut. Issues of land ownership and develop remain essential to bring this project forward.
GOAL 4

FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE

UTQIAġVIK TO WAINWRIGHT PROJECT AREA

PROPOSED ROUTES
- Corridor D
- Corridor E
- Coastal Route
- Overland F

Map Location

PROJECT AREA
Road Network for Utqiaġvik, Atqasuk, and Wainwright

FIGURE 2.1-1
EXISTING GRAVEL ROADS WEST OF DEADHORSE ACROSS THE COLVILLE RIVER PROJECT AREA
PROPOSED ALPINE PERMANENT ROAD IN NUIQSUT
There exists a patchwork of permanent and seasonal ice roads that connect from Deadhorse and the Dalton Highway to Wainwright. As noted, seasonal roads come at a great annual cost to develop, and with climate change, the window these roads are available for use is narrowing each year.

ASTAR has advanced important corridor analysis and preliminary recommendations for all season gravel access roads linking Utqiagvik and Atqasuk, Utqiagvik to Wainwright, and existing gravel roads west of Deadhorse to cross the Colville River. Study will need to continue with each, with the goal to advance each road over the next three to seven years. The remaining link will be to connect Utqiagvik to the Colville River crossing all season gravel road to achieve a full regional roadway network connecting from Deadhorse and Wainwright.

Achievement of this objective should remain a long-term goal of the NSPAD. The NSPAD should seek innovative, cost effective approaches to network development, including the use of NSB gravel sources.
LONG RANGE DEVELOPMENT PLAN
NORTH SLOPE BOROUGH PORT AUTHORITY DEPARTMENT

LRDP GOALS, OBJECTIVES, AND IMPLEMENTING STRATEGIES

Work is well underway through the ASTAR planning effort and other initiatives to bring the next generation of essential roads to the North Slope. The NSPAD is well positioned to be a catalyst working to implement over time regional road and corridor improvements to improve the economic and social well-being of North Slope people and industry.

GOAL 4. FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE.

Objective 1: Create a portfolio of roadway infrastructure that helps secure the North Slope surface transportation resilience.

4.1.1: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, advance development of an all-season gravel road and related bridge and other infrastructure linking Atqasuk to Utqiagvik.

4.1.2: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, advance development of an all-season gravel road and related bridge and other infrastructure linking Utqiagvik to Wainwright.

4.1.3: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, study all-season access from Utqiagvik to Deadhorse/Dalton Highway.

4.1.4: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, continue to review opportunities to create a gravel road to replace the +/- 18-mile Alpine resupply ice road in Nuiqsut.

4.1.5: Explore and identify grants available to help provide offset costs associated with roadway infrastructure development, expansion, and maintenance.

4.1.6: Work with the oil industry to consolidate road and utility corridors.

FACILITATING MOVEMENT WILL STRENGTHEN ECONOMIC AND SOCIAL WELL-BEING OF THE NORTH SLOPE
The NSPAD can play an important role in strengthening public safety assets, communication networks, and other related regional infrastructure. Under this section, we explore Goal 5 which calls for the NSPAD to seek out and invest in facilities and projects that add to the overall safety and security of the North Slope.

THE NSPAD WILL BECOME ANOTHER ESSENTIAL CAPACITY BUILDING ENTITY ABLE TO PLAN FOR, RESPOND TO, AND RECOVER FROM EMERGENCIES OF LOCAL AND REGIONAL SIGNIFICANCE
The COVID-19 Pandemic is the latest in a series of public health and welfare challenges faced by the people and industries of the North Slope. COVID-19 has reinforced the importance of areawide leaders, first responders, healthcare professionals, transportation infrastructure, and other assets to be prepared for the next pandemic or other events requiring a coordinated response (Centers for Disease Control and Prevention, 2020). A need for emergency response to accidents associated with regional shipping, activities by industries, natural disasters, pandemics, and other similar events will be an ever-present issue on the North Slope and surrounding waters of the Chukchi and Beaufort Seas.

Sea level rise and changing climate also presents a new set of challenges for the region, including eroding coastlines and pressures on traditional communities to adapt in different ways. By example, U.S. Geological Survey (USGS) indicates the shoreline along Alaska’s northern coast has eroded at some of the fastest rates in the nation, putting local communities, oil fields and coastal habitat at risk (Rosen, 2015).

Preparing, responding, and recovering from community shocks and stresses leads to improved community resilience—the capacity to withstand and bounce back from short and prolonged disruptions such as pandemics, natural disasters, and the effects of climate change. Building community resilience requires local-level decisions and efforts in a number of areas (National Research Council, 2012):

- Essential services, such as health, education, and public and private infrastructure need to be robust;
- Individuals and groups need to know about risks and how to reduce them;
- Communities, neighborhoods, and families need to be organized to prepare for disasters; and,
- Land-use planning needs to be sound.

The NSB, through its administrative functioning and Comprehensive Plan, is working in a coordinated fashion in many of these areas to bring forward increased community resilience. The NSPAD has a potential role in implementing identified infrastructure that can help North Slope communities and industries be more resilient. Three key categories of infrastructure are suggested in the LRDP: Communications, law enforcement and first responder activities, and coastal protection.
WHERE THE NSPAD CAN MAKE A DIFFERENCE

COMMUNICATIONS

Communications systems are essential infrastructure. They are critical to the daily functioning of North Slope communities as well as public safety and emergency response. Environmental factors can disrupt satellite signals and reception needed for communication throughout the North Slope. Equipment wear and tear can occur rapidly in the Arctic, leading to breakdowns and service outages.

The North Slope is served by fully digital local exchange telephone service, local dial-up Internet, cellular telephone, cable television, public radio broadcast, and teleconferencing centers (North Slope Borough, 2019). Interconnection with the regional and global telecommunications network is via satellite circuits. The Arctic Slope Telephone Association Cooperative (ASTAC) and several private corporations (AT&T Alascom, Quintillion, Alaska Cellular Service, General Communication, Inc., et.al.) provide communication infrastructure and services to the North Slope.

The Comprehensive Plan suggests existing communications systems are currently adequate to meet emergency communication needs but have room for improvement in the telephone, cellular telephone, and Internet systems in comparison to south-central Alaska and other peers.

Communications technologies continue to advance and improve. Satellite-based broadband Internet providers such as SpaceX, Amazon, OneWeb, and others are expected to transform communications and connectivity in fewer than 20 years (Morgan Stanley, 2020). This transformation could have a measurable effect on North Slope communities and industries in their ability to communicate, learn, monitor, and respond. These elements underpin the idea of the “smart rural community” provided in the feature portion of this chapter (Neal, Bansal, Miller, Fishman, & Chew, 2019).

Beyond communications, constellations of satellites are expected to help in a number of beneficial ways:

- **Food security.** Earth observation from satellites helps to estimate wildlife populations (including whales), monitor illegal fishing, improve traceability of products, and support predictive models for food supply around the globe.
A smart rural village is defined as a community that uses effective connectivity to create new sources of value, such as improved quality of life or a more sustainable, innovative, and inclusive economy (Neal, Bansal, Miller, Fishman, & Chew, 2019). While effective connectivity can be inclusive of a number of elements, it is generally centered around the availability of high-speed, reliable broadband Internet services. The availability of effective connectivity in a rural setting can unlock benefits in the categories of the economy, education, mobility, public safety, sustainability, and quality of life. By example, the economy sector can benefit from connected technologies and big data that can fundamentally change the way communities drive benefit from farming, forestry, mining, recreation, and conservation.

For the communities of the North Slope, the LRDP supports the expansion of communication services as the critical first step to creating a foundation for smart rural villages.

While it will take effort and planning by the NSB and each village, the NSPAD can support the provision of needed communications infrastructure fundamental to smart rural village evolution by:

- Review of alternative technologies and partnership opportunities for supplying improved communications systems, especially satellite-based broadband Internet and village hot spots.
- Help to identify and apply for state and federal funding in support of expanded communications infrastructure.
- Find ways to share costs and/or aggregate demand for communications services.
- Establish a model smart rural village that serves as the template from which others can then follow.
- Explore innovative public-private partnerships and new funding and financing models that align both to the needs of rural communities and businesses.
• **More reliably monitor air and sea activities.** Satellite observations can greatly improve the detection, monitoring, and forecasting, of sea-ice conditions and their extremes for ship navigation and offshore activities.

• **Greenhouse-gas monitoring.** Companies and governments are using satellites and spectroscopy to monitor emissions data, helping to detect CO\textsubscript{2} emissions and natural-gas leaks from a range of sources, including oil wells and industrial operations.

There is a role for the NSPAD to help promote and partner in the study, funding, and building of the communication system of the future. By example, the NSPAD could work with existing and new providers to enhance communication networks while also mapping out new approaches for supplying communications using satellite based systems.

**LAW ENFORCEMENT AND DISASTER RESPONSE**

Increased airport, harbor, and regional roadway infrastructure will boost the NSB’s ability to conduct law enforcement activities and respond to natural and manmade disasters. These facilities will provide current NSB emergency services—police department, fire department, search and rescue—with greater capacity to effectively and rapidly deliver essential services. These facilities will also be able to support state and federal law enforcement and first responders as well as activities by the Alaska National Guard and assets of the U.S. Military. Necessary private industry assets responsible for cleanup of environmental spills will also be able to be deployed from these transportation facilities.

Under the LRDP, the NSPAD will plan, fund, and deliver needed airport, harbor, and regional roadway infrastructure. These infrastructure assets need to be coordinated with current NSB emergency services and the overall approach to hazard mitigation.

The NSPAD can also help in other ways:

• Study, fund, and deliver additional facility spaces aligned with police, fire, search and rescue, and other state, federal, and private emergency services.
GOAL 5
IDENTIFY AND INVEST IN INFRASTRUCTURE THAT ENHANCES SAFETY AND SECURITY

- Design and implement air, sea, and road infrastructure to be able to convert into critical staging areas for disaster and pandemic relief. Infrastructure should be able to implement surge strategies so vital supplies can be delivered and people receive care (U.S. Department of Health and Human Services, 2017).
- Design and implement air, harbor, regional roadways to have the ability physically and operationally to be modified to help control North Slope entry and access during disasters and pandemics.

CLIMATE CHANGE
Climate change is impacting weather patterns and the types of natural disasters occurring along the North Slope. For example, average near-surface air temperatures across the Arctic are warming twice as fast as the global average (Khachatoorian, 2017). The North Slope is seeing an increase in melting permafrost across its wetlands, lakes, and streams. This thawing has many adverse effects including changes to land subsidence patterns, increased risk of sink holes, elevated sediment loads to fresh waters, and the release of stored carbon and methane into the atmosphere (North Slope Borough, 2019). Additionally, reduced sea ice is resulting in increasing areas of open water that can absorb more heat from the sun as well as ocean conditions that are accelerating coastal erosion and flooding. The open water resulting from increased sea ice melt is also seeing a rise in marine traffic along the Northwest Passage, making it vulnerable to increased pollution.

Increased storm occurrence and intensity have exacerbated flooding and wildfires in the region, requiring response to protect life and property. Wildfires are starting earlier in the season, moving farther north into the Arctic, and burning much more intensely. This falls in line with predictions from climate models as sea ice continues to melt and ocean and air temperatures continue to rise (Berwyn, 2019).

These conditions are already undermining land and infrastructure areas around North Slope coastal communities. The USACE in its published a Draft Coastal Erosion Feasibility Study for Utqiaġvik, noted that frequent and severe coastal storms threaten public health and safety, the economy, over $1 billion of critical infrastructure, access to subsistence areas, and
cultural and historical resources (U.S. Army Corps of Engineers - Alaska District, 2018). Planning and design work is already underway for a 5-mile revetment to protect the Utqiagvik coastline, with current construction costs near $380 million.

Similar to the functioning of a levee board, the NSPAD should study, design, implement, and manage coastal protection and other engineered structures to protect life, property and environment, and assist in needed community adaptation to these issues.
The NSPAD can fill an investment and management role in physical infrastructure, developing partnerships, and conducting research, feasibility analyses, and future needs assessments that will further village and regional public safety assets and communications.

**GOAL 5: IDENTIFY AND INVEST IN INFRASTRUCTURE THAT ADDS TO THE OVERALL SAFETY AND SECURITY OF THE NORTH SLOPE**

**Objective 1:** Create a network of air, sea, and road infrastructure, staging areas and check points for use in emergency and pandemic response.

5.1.1: Develop a comprehensive regional network of emergency response infrastructure assets and staging areas. Integrate these assets into the strategies and coordination efforts continued within the NSB Risk Management Office’s Multi-Jurisdictional Hazard Mitigation Plan.

5.1.2: Study, fund, and deliver additional facility spaces in villages aligned with police, fire, search and rescue, and other state, federal, and private emergency services.

5.1.3: Identify and secure grants and other project finance to fund regional emergency response network elements.

5.1.4: Explore how air, harbor, and regional roadway infrastructure can be managed in times of natural disasters and pandemics to manage entry into the North Slope.

**Objective 2:** Educate communities and individuals on preparedness and emergency response protocols.

5.2.1: Create accessible emergency response literature to educate communities and individuals on risks and disaster response protocols, including best practices, coordinated evacuation plans and routes. A community that is more informed and prepared will have a greater opportunity to rebound quickly following an event.
Objective 3: Study, design, implement, and manage coastal protection and other engineered structures to protect life, property and environment and assist in needed community adaptation.

5.3.1: Develop a long-term coastal adaptation strategy that identifies “adaptation pathways” that allow for responses to be incrementally implemented as conditions and threats evolve over time. This approach allows for prioritization, flexibility and staggering of investments for adaptation measures.

5.3.2: Seek ways to fund and manage critical coastal protection infrastructure.

Objective 4: Promote and partner in the study, funding, and building of the communication system of the future for the North Slope.

5.4.1: Work with existing providers to enhance current communications networks within villages to maximize improved subsea fiber optic connections.

5.4.2: Investigate alternative technologies and partnership opportunities for supplying improved communications systems, especially satellite-based broadband Internet.

5.4.3: Work to plan and partner in building a network of smart rural communities of the future, allowing North Slope villages and industries to unlock new economic value and jump past existing and near-term technologies and capital outlays.
The NSPAD’s mission and goals presented in the LRDP provide a roadmap for the Department to advance planning, funding, development, and operation of essential North Slope infrastructure. There are several next steps necessary to create forward momentum. This chapter outlines follow-on tasks for pursuit by the NSPAD.
**STAGE 1**

Formation and advancement of the NSPAD is the main goal under Stage 1. The NSPA shifts from an independent Authority to a Department of the North Slope Borough. The LRDP is adopted as the guiding plan for the Department. The Department receives initial funding and fills key leadership positions. An advisory board from the NSPAD is also established.

Implementation of the LRDP is expected to occur over three stages. Stage One is ongoing, involving change of NSPA to a Department of the NSB along with finalization and adoption of the LRDP. The Department receives initial funding and fills key leadership positions. The North Slope Port Advisory Board (NSPAB) is also formed. Stage One will conclude late-2021 or early-2020.

Under Stage Two, the Department starts to build a portfolio of regional infrastructure, beginning with pursuit of objectives and effort in the aviation sector. Stage Two is likely to occur over the next 3 to 5 years.

As the Department achieves initial success, the need for it to work on other aspects of its planned portfolio increases. Under Stage Three, the NSPAD expands incrementally to host anticipated harbor, regional roadway, and special project divisions.
STAGE 2

Stage Two includes work towards the transfer and operation the airports of Utqiaġvik (Barrow) and Point Hope from the State of Alaska to the Borough. Stage Two advances a number of studies and readies the NSPAD for further expansion. Stage Two is anticipated to span from three to five years.

STAGE 3

Stage Three observes incremental evolution of the NSPAD to include harbors, regional roadways, and special projects divisions. As market conditions and financial resources allow, the NSPAD adds division heads and team members as needed to advance its overall aims and mission. The LRDP is likely updated during this stage to ensure alignment with community priorities and market opportunities.
The NSPAD will evolve over time to establish a Director and up to four divisions—aviation, harbors, regional roads, and special projects. Separate enterprise funds will fall under each division. For example, the Utqiaġvik (Barrow) Airport Enterprise will fall under the Aviation Division of the NSPAD. The NSPAD will fund studies and related project efforts until such time that self-sustaining entities can be formed.

The accompanying charts illustrate the recommended organization of the NSPAD within the context of the overall NSB administration. As shown, the NSPAD would consist of a Director and a small staff in the early years. An Aviation Division Head could also be pursued or the NSPAD Director could fulfill both roles until such time that a critical mass of Department activities is achieved and additional senior leadership is required.

The organization of the NSPAD assumes interface and resource sharing between other NSB Departments. Anticipated NSB Department’s most frequently called upon for support include Administration and Finance, Planning and Community Services, and Public Works.

The Mayor’s office and the Human Resources Department (and for division heads, the NSPAD Director when retained) will need to compile detailed job descriptions for key positions. Provided below are general descriptions and desirable character traits suggested for each key position.

- **NSPAD Director.** This position is critical to the success of the NSPAD, especially in the early years. The NSPAD Director is the face of the organization and will be responsible for managing and overseeing all functions of the Department. The candidate should have good working knowledge of the critical functions of the Department, including: management, strategic planning, project finance, operations, asset acquisition and maintenance, construction, and contract negotiation. Ideally, the NSPAD Director will also be a practice expert in one of the primary division
areas, such as aviation or ports. This expertise would allow the Director to potentially serve in two roles as the Department works to gain its footing. Given the nature and range of relationships the NSPAD Director must establish and maintain a collaborative leadership style. The NSPAD Director should possess organizational, social, and communication skills to engage and influence community, industry, and statewide support for the Department mission and initiatives advanced.

- **Division Heads.** These individuals are responsible for one or more of the enterprises contained within each division portfolio. Much like the NSPAD Director, they are responsible for managing and overseeing all functions of the business units under their division. Candidates need to understand all the critical functions of the NSPAD, including: management, strategic planning, operations, maintenance, construction, and contract negotiation.
Presented below is the recommended organizational makeup of the NSPAD through Stage 2.
Presented below is the recommended organizational makeup of the NSPAD through Stage 3. The addition of divisions would occur incrementally as conditions warrant.
PRELIMINARY BUDGET CONSIDERATIONS

Preliminary Department budgets for each stage of the NSPAD are offered in the accompanying section. Each budget starting point, subject to review and greater detailing once the Director position is filled and Department activities are underway.

As depicted in the first table, the proposed NSPAD annual budget for Stages 1 and 2 of the Department is estimated to range between $885,000 and $995,000 (2020 dollars). This would include the salary of the NSPAD Director, a project administrator, and executive assistant as well as other line items associated with contracted services.

As the NSPAD grows, the annual budget is expected to incrementally expand in alignment with the needs and growth of the Department. The budget would be assessed annually, with the long term goal to generate corresponding revenue streams associated with NSPAD established enterprise funds to become self sustaining (and reduce/eliminate annual NSB funding). This estimated annual budget includes division heads and additional internal and consultancy line items. By augmenting expansion with the corresponding revenue stream, NSAPD will maintain the goal of self sustaining itself.

Neither budget accounts for funding associated with capital projects and asset acquisition. Airports, seaports, toll road facilities, and other key infrastructure anticipated to be advanced by the NSPAD will each have their own separate enterprise funds and associated capital and operation expenditure areas.
### NSPAD ANNUAL BUDGET - EARLY YEARS (STAGES 1 AND 2)

<table>
<thead>
<tr>
<th>Object Account</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Department Manager</td>
<td></td>
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<tr>
<td>Project Administrator</td>
<td></td>
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<tr>
<td>Executive Assistant</td>
<td></td>
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<tr>
<td>Honorarium</td>
<td></td>
</tr>
<tr>
<td>Permanent Benefits</td>
<td></td>
</tr>
<tr>
<td><strong>Personnel Services Sub-Total</strong></td>
<td><strong>$475,000 - $525,000</strong></td>
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<tr>
<td>Communications</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
</tr>
<tr>
<td>Professional Services</td>
<td></td>
</tr>
<tr>
<td>Rents &amp; Utilities</td>
<td></td>
</tr>
<tr>
<td>Travel &amp; Lodging</td>
<td></td>
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<tr>
<td>Other Services &amp; Expenses</td>
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</tr>
<tr>
<td><strong>Contractual Services Sub-Total</strong></td>
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<tr>
<td>Total Supplies</td>
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<tr>
<td>Equipment</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

### NSPAD ANNUAL BUDGET - LATTER YEARS (STAGE 3)

<table>
<thead>
<tr>
<th>Object Account</th>
<th>Amount</th>
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</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Airports Manager</td>
<td></td>
</tr>
<tr>
<td>Regional Roads Manager</td>
<td></td>
</tr>
<tr>
<td>Harbors Manager</td>
<td></td>
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<tr>
<td>Fiscal Manager</td>
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<tr>
<td>Project Administrator</td>
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<td>Executive Assistant</td>
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<td>Honorarium</td>
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<td>Permanent Benefits</td>
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<tr>
<td><strong>Personnel Services Sub-Total</strong></td>
<td><strong>$1.1 - 1.15 Mil</strong></td>
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<tr>
<td>Communications</td>
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<td>Maintenance</td>
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<td>Professional Services</td>
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<td>Rents &amp; Utilities</td>
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<td>Travel &amp; Lodging</td>
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<td>Other Services &amp; Expenses</td>
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<td><strong>Contractual Services Sub-Total</strong></td>
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<td>Equipment</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$2.9 - $3.02 Mil</strong></td>
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</tbody>
</table>
Advisory boards are commonly used in Alaska and elsewhere to provide a range of oversight and guidance to directors, mayors, and assemblies. A well-functioning advisory board will:

- Evaluate activities, projects, and programs undertaken by the department or authority;
- Advise as to how activities, projects, and programs can expand training, education, and other opportunities to local citizens and businesses;
- Provide input and support for legislation and funding at the local, state, and federal levels;
- Act as a communication link to assist in the development of community understanding and support for authority activities, projects, and programs; and,
- Be ambassadors for the ultimate success of the mission and goals of the department or authority.

Under the revised Title 4 North Slope Borough Port Authority Department Ordinance (refer to Appendix A), the NSPAD will be “advised by an advisory board which shall pay heed to the responsibilities of the Department in offering recommendations” (2014-01-1, § 4 Edited, 2020). This Port Advisory Board (PAB) would help provide counsel and guide the NSPAD on topics ranging from the evaluation and prioritization of projects to community outreach.

Per the revised Title 4 Ordinance, the NSPAD PAB would be comprised of seven members drawn from the following:

- One member representing a regional native corporation;
- One member representing a native village corporation;
- One member representing a North Slope tribal organization;
- One member representing a city government within the North Slope Borough;
- One member representing the North Slope Borough;
- One member representing the Alaska Eskimo Whaling Commission; and,
- One member appointed at-large.

Board members are appointed by the Mayor and subject to confirmation by the Assembly. Appointment terms shall be three years, with initial appointment staggered to provide continuity of NSPAD functions.
The LRDP advocates for inclusion of additional ex-officio PAB members drawn from critical areas of infrastructure, public, and private sector expertise. Knowledge areas for consideration include North Slope industries, ADOT&PF, USACE, USCG, aviation experts, port experts, and others.

The PAB will enact bylaws outlining its function and purpose. In the development of bylaws, the LRDP encourages the future board to:

- Review and consider adoption of the elements of a well-functioning board (outlined above);
- Establish a general agenda to enshrine the categories of topics covered at each meeting; and,
- Meet with regularity, striving at onset to hold meetings at regular intervals.

It is important for the PAB to be established as soon as possible. The PAB will be highly useful in helping guide the NSPAD through its formative years.
Offered in the accompanying graphic are general NSPAD initiatives by implementation stage. Each initiative is sourced from Goals 1 through 5 of the LRDP. As shown, the NSPAD moves through Stage One in 2020 to the first quarter of 2022.

Once complete, the NSPAD is opened, key leadership and staff retained, and aviation initiatives already underway are transferred to the Department. The Department works to advance aviation projects while also conducting studies and other efforts for harbors, regional roads, and other special projects.
As these efforts start to take greater form, the NSPAD moves into Stage 3. Divisions are created (as needed) and their work to manage infrastructure advanced.

The accompanying graphic is a general guide. The timing and order of individual initiatives, division start-up, and other depicted work effort can shift as NSB and NSPAD leaders weigh and prioritize community needs. The availability of project grants, finance, and other resources will also influence the pacing of depicted work effort.
The LRDP is a living document, updated at regular intervals to ensure it reflects the current state of accomplishments, opportunities and challenges, investment priorities, and overall approach to governance. It should be used to guide annual Department planning and budgeting tasks.

The LRDP should be considered a useful tool for marketing externally the mission and activities of the NSPAD. This could include using it as a reference document as part of the NSB and NSPAD efforts to garner project grants, finance, and the support of private industry.

It will also be important for the NSPAD and the NSB Planning Department to work together and ensure alignment between LRDP goals and the comprehensive plan. Coordination should occur through future LRDP update, Borough and community comprehensive plan development, transportation and corridor planning, project approvals, and other initiatives.

Securing finance will be one of the more challenging aspects of NSPAD’s work. As noted in the USACE’s Alaska Deep-Draft Arctic Port System Study, “the constraints of developing Arctic infrastructure and the complexity of multiple agencies involved in the review and permitting of such infrastructure likely exceeds the capacity of any one public or private entity to realize” (U.S. Army Corps of Engineers, 2013). In the following section we describe several considerations associated with project finance of NSPAD initiatives.

TRANSFER OF EXISTING INFRASTRUCTURE
Infrastructure transfer involves the movement of assets and ownership rights from one party to another. This is the arrangement anticipated between the ADOT&PF and the NSB for Utqiagvik and Point Hope Airports.

As these airports are already operating assets, the NSPAD would negotiate with the state for transfer of these facilities to a specific enterprise fund or other special purpose vehicle. The transfer agreement would stipulate specifically what land, buildings, equipment, agreements, and other assets are a part of or separate from the transaction. The NSPAD would administer the airports as separate or combined enterprise funds.
As transferred assets are typically already in operation, it is assumed current approaches to facility finance would continue. Discussions with the state on transfer of Utqiagvik and Point Hope Airports includes funding from Alaska to keep these facilities operational for a set number of years into the future. Revenues associated with operations as well as transfer of land and accompanying lease incomes would also be used for airport operational funding. General obligation bonds, revenue bonds, private activity bonds, and other similar financing instruments could also be utilized on an as needed basis.

FINANCING MECHANISMS FOR NEW INFRASTRUCTURE
Financing mechanisms for infrastructure projects, inclusive of public-private partnerships (PPP), include government funding, corporate (or on balance sheet) finance, and project finance (World Bank Group, 2020). Each is summarized below.

- **Government Funding.** The public sector funds some or all of the capital investment of an infrastructure project. When the private sector is brought in, it often involves a Design-Build-Operate or similar operating structure.

- **Corporate or On-Balance Finance.** Under this approach, a private operator finances some or all of the capital investment of a project through corporate financing—an approach involving securing finance for the project based on the balance sheet of the private operator rather than the project itself.

- **Project Finance.** Project finance involves limited recourse lending to a specially created project vehicle which has the right to carry out the construction and operation of the project. This approach is commonly observed for newly built infrastructure.

As the NSPAD will advance projects in multiple infrastructure categories, each of the financing mechanisms outlined above may be appropriate.
GOVERNMENT FUNDING APPROACHES FOR NEW INFRASTRUCTURE

There are various financing alternatives available to the NSPAD as it matures and begins to explore future. Several examples of public sector funding approaches are offered below:

- **Double Barrel GO Bonds.** It is the intent of the NSPAD to finance projects on a non-recourse basis to the NSB. In some instances the NSB may decide to issue “Double Barrel Bonds”. An example of the use of Double Barrel GO bonds was the financing of the Service Area 10 (SA10) solid waste facility. In this example the Borough’s 2014 Series C bonds were issued additionally secured by revenues of the SA10 Solid Waste Facility (Double Barrel Bonds). The issuance of the Series 2014C bonds required a vote of the electorate.

- **Revenue Bonds.** A municipal bond supported by the revenue from a specific project, such as a toll bridge, highway, or port. Revenue bonds that finance income-producing projects are thus secured by a specified revenue source (U.S. Securities and Exchange Commission, 2020). An example of the use of revenue bonds was the financing of the SA10 Water and Wastewater Facility Revenue Bonds Series 2014. The Series 2014 bonds were secured by the revenues of the SA10 Water and Wastewater Facility with a moral obligation of the NSB to fund the 2014 Bonds debt service reserve fund should it be drawn down to pay debt service.

- **Private Activity Bonds.** Tax-exempt bonds issued by or on behalf of a local or state government for the purpose of providing special financing benefits for qualified projects. The financing is most often for projects of a private user, and the government generally does not pledge its credit (U.S. Department of Transportation, 2020). An example of the use of private activity bonds was the Series 2001 Exempt Facility Industrial Revenue Bonds issued for a British Petroleum solid waste facility. The 2001 bonds were issued based on the credit of the British Petroleum and used the tax-exempt authority of the NSB. Issuance of the 2001 bonds required a Tax Equity and Fiscal Responsibility Act (TEFRA). Federal tax law requires public entities to hold a public hearing to protect the tax-exempt status of private activity debt as specified under TEFRA.
• **The 1984 Barrow Gas Field Transfer Act.** This act allows the NSB to "explore for, develop, and produce fluid hydrocarbons with the land and interests granted." The NSB and its Port Authority Department could rights under this Act to help fund and advance regional infrastructure initiatives contemplated in the LRDP and by the NSPAD.

• **State Grants.** ADOT&PF, the Division of Community and Regional Affairs (DCRA), and other departments administer a variety of state and federal grant programs for Alaskan communities and businesses. Each program has different requirements for eligibility, matching of community contributions, availability per legislative cycle, and other factors. For example, ADOT&PF maintains a Harbor Facility Grant program that provides state financial assistance in the form of a 50/50 matching grant for municipally or regional housing authority owned small boat harbor facilities. State funding is only for the construction phase of small boat harbor projects. The NSB and NSPAD will want to actively research and apply for state and federal grants as many of these can be used at different stages of project design and development. Grants generally require some degree of project detail, budget, and grant administration approach, and as such, the NSPAD will need to plan ahead to have a pipeline of potential projects suitable for application. Projects should also be included in appropriate local and state plans (e.g., Capital Improvement Program, 5-year regional and state economic development plans, local comprehensive plan) for concurrency and for eligibility for award.

• **Federal Grants.** Numerous federal agencies administer grants through appropriate state entities or directly to the grant applicant. Each program has different requirements for eligibility, matching of community contributions, availability per legislative cycle, and other factors. Representative programs of note include:
  - FAA’s EASP and SCASDP programs described previously.
  - US DOT’s Better Utilizing Infrastructure Leverage Development (BUILD) transportation discretionary grant program, which supports investment projects in road, rail, transit, and port projects that promise to achieve national objectives (U.S. Department of Transportation, 2020).
• US DOT’s Port Infrastructure Development Program (PIDP) available through the U.S. Department of Transportation Maritime Administration that awards monies to facilities within, connecting to, out of, or around coastal seaports, inland river ports and Great Lakes ports (U.S. Department of Transportation, 2020).

• FEMA’s Building Resilient Infrastructure and Communities (BRIC) program which supports states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards (U.S. Department of Homeland Security, 2020).

• National Petroleum Reserve-Alaska Impact Program may be a source of funding for projects related to impacts from oil and gas development in the NPR-A.

• NOAA’s Coastal Resilience Grants Program which helps coastal communities and ecosystems prepare for and recover from extreme weather events, climate hazards, and changing ocean conditions (National Oceanic and Atmospheric Administration, 2020).

• Federal Transit Administration (FTA) awards monies to local public transit systems, including buses, subways, light rail, commuter rail, trolleys, and ferries. These types of programs may be considered elements of NSPAD infrastructure investment, such as building transport capacity linked to regional public airports connecting to small communities and villages. By example, in November 2020 the FTA awarded a total of $7.7 million in Tribal Transit Program grant awards to 25 tribal governments for projects to improve public transit on tribal lands (Federal Transit Administration, 2020). This included a $1,830,000 grant to Alaska’s Noorvik Native Community to build a storage facility to house its paratransit fleet. This project will improve safety, reliability and ensure a continuation of services for its tribal members in Noorvik.

• In December 2020, the U.S. Senate passed the National Defense Authorization Act for Fiscal Year 2021 (NDAA) that included provision for a new regional Department of Defense (DOD) Center named the “Ted Stevens Center for Arctic Security Studies.” The Ted Stephens Center will be the first DOD regional center
in the Arctic and support defense strategy objectives and policy priorities. As noted under Goal 3, other nations are increasing their policing and military presence in the Arctic and the U.S. needs to make greater headway in the protection of sovereign areas and resources. The Ted Stephens Center is a step in this direction. The DOD is authorized to establish the Ted Stevens Center in the spring of 2021 (120 days from NDAA passage). As a part of this authorization, the DOD is required to submit a plan to Congress. The plan will detail the benefits of an Arctic security studies center, including identifying and considering suitable locations with close proximity to the Arctic, such as Alaska, and co-locating the center on military installations or at local universities. The report will also study associated costs, the suitability of using existing infrastructure, curriculum, and partnership opportunities with other Arctic nations. Funding and other efforts are anticipated from this ongoing endeavor, and as such, the NSPAD should follow and seek opportunities to participate.

• **Federal Loan Programs.** Federal loan programs are available in a number of infrastructure categories that provide low interest rates over long payback periods. By example, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects of regional and national significance (U.S. Department of Transportation, 2020). The TIFIA credit program is designed to fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital. Many large-scale, surface transportation projects—highway, transit, railroad, intermodal freight, and port access—are eligible for assistance. Eligible applicants include state and local governments, transit agencies, railroad companies, special authorities, special districts, and private entities.
The USACE is active in all areas of civil works in the U.S. The USACE’s mission includes: Operation and maintenance of commercial inland navigation channels; dredging of harbors; wetland restoration, creation, and enhancement; and, others of relevance. The USACE conducts extensive, multi-tiered feasibility studies for prospective projects related to water resources, such as the Alaska Deep Draft Arctic Port Study referenced previously (U.S. Army Corps of Engineers, 2013). A USACE feasibility study involves assessing problems and opportunities, coming up with alternative solutions to address those problems, comparing those solutions and, ultimately, recommending the solution that makes most sense (Kidd, 2020). Initiation of a feasibility study begins when a local sponsor requests a study.

There are a variety of approaches, both quantitative and qualitative, to assist with multi-criteria decision making and plan selection using either National Economic Development (NED) or National Ecosystem Restoration (NER) guidelines prescribed by Congress. NED guidelines prescribe the minimum acceptable economic benefit-to-cost ratio for a civil works project. For each dollar spent, there should be an equal amount of future cost savings. NER guidelines describe the standards by which the benefits of an ecosystem restoration project are quantified.

Projects that successfully move through all milestones of a feasibility process are recommended to be presented to Congress for authorization and funding consideration.
PUBLIC PRIVATE PARTNERSHIPS

PPPs involve collaboration between a government agency and a private-sector company that can be used to finance, build, and operate projects. To reduce risk exposure to the NSB and increase the potential speed projects can be advanced, PPP arrangements present a number of attractive benefits. In its assessment for the creation of Alaska Deep-Draft Arctic Port(s), the USACE encouraged “private entities/banks and authorize public agencies to collaborate in funding and constructing marine infrastructure” and to “use the strengths of each entity to achieve success” (U.S. Army Corps of Engineers, 2013). Multiple successful PPP infrastructure arrangements in Alaska were cited in this report, including work by the Alaska Industrial Development and Export Authority (AIDEA). AIDEA is a public corporation of the State of Alaska tasked with fostering economic growth through the establishment and expansion of manufacturing, industrial, energy, export, small business, and business enterprises. AIDEA provides various means of financing and PPP efforts through partnerships with other financial institutions, economic development groups, and guarantee agencies.

For each NSPAD pursued infrastructure endeavor, a detailed project and business plan will need to be prepared. The plan should include at a minimum:

- A summary of the project opportunity;
- Overview of the industry, market, and context of the project;
- Management plan;
- Operating plan;
- Financial plan; and,
- Social responsibility plan.

The project and business plan should be clear and compelling for potential participation by private sector partners. Work should also be of sufficient detail for use in garnering federal and state funding streams, low interest loans, loan guarantees, and grants.

As part of its annual budgeting process, the NSPAD will need to make provisions for studies, site assessment, preliminary engineering, business and project planning, and other similar programs. These expenditures should be capitalized when and if a specific infrastructure project moves forward.
Environmental stewardship is a foundational value of North Slope people. While advancing development in the region is desirable, this ambition needs to be balanced against the critical importance of protecting the environment and preserving subsistence activities.

Infrastructure investment promoted as part of the LRDP and by the NSPAD will need to meet a high environmental standard. This includes baseline considerations codified in local, state, and federal environmental regulations. It also means taking a step further in each project by considering how infrastructure can be more sustainable, reduce carbon emissions, and mitigate impacts contributing to climate change. Infrastructure needs to be developed and operated in a fashion that reflects the values and culture of North Slope people.

One consideration for the NSPAD is the application of guidelines for assessing the sustainability and resilience of infrastructure. One such program is the Institute for Sustainable Infrastructure’s Envision Program. Envision seeks to support higher performance through more sustainable choices in infrastructure development (Institute for Sustainable Infrastructure, 2020).

Envision does this through:

- Setting standards for what constitutes sustainable infrastructure;
- Incentivizing higher performance goals beyond minimum requirements;
- Providing a platform for giving recognition to projects that make significant contributions to sustainability; and,
- Providing a common language for collaboration and clear communication both internally and externally on sustainable infrastructure development.
As contained in the NSPAD mission statement, the Authority shall “… [support] provision of training and employment opportunities for local residents” (Ord. 2014-01-1, § 4 Edited, 2020). The 2019 Comprehensive Plan lists the NSPAD as a vital economic opportunity, one that “…will protect subsistence resources, provide emergency response opportunities, and create local jobs.”

The NSPAD will play an essential role in fostering economic and social benefit to the residents of the North Slope. Investment in infrastructure will generate construction jobs and opportunities for long term employment. Many of these jobs will be technical in nature and require specialized workforce training.

While each infrastructure opportunity will be evaluated on its respective merits, consideration should always be given as to how the project over its lifespan can enable increased employment and upward mobility of the local workforce. Training and education programs should always be built into capital and operational expenditure budgets. The potential for apprenticeship may also arise and should be pursued where possible.

In twenty years’ time, the effectiveness of the NSPAD to advance an ambitious agenda of infrastructure and economic development outlined in the LRDP will undoubtedgly occur. The hope is that the work undertaken by the NSPAD will be transformative both in terms of the quality-of-life improvements as well as its ability to instill optimism and a path forward for future generations of North Slope citizens.
SUMMARY OF LRDP GOALS, OBJECTIVES, AND IMPLEMENTATION NEXT STEPS

The following section summarizes the goals, objectives, and implementation strategies outlined in Sections 2 through 6 of the LRDP.

As presented previously:

- **Goals** are the big ideas and broad statements of what we want to achieve.
- **Objectives** provide a definitive measurement of our progress toward strategy achievement.
- **Implementing Strategies** describe specific steps to reach an objective or goal.

While a logical organization is offered, goals, objectives, and implementation steps can be pursued in any variety of order. The NSB Administration and staff, NSPAD, various development permitting and funding agencies, village residents, village leadership, and/or other entities are encouraged to work together to establish a prioritization that works for all and takes into account resource availability, market conditions, and regulatory issues.

- **Goal 1. Emerge as a Self-Sustaining Enterprise.** This goal addresses how best the NSPAD should be organized and function.
- **Goal 2. Preserve the Essential Role of Airports and Air Services.** The NSB is already moving forward on this important initiative through its work to bring airports of strategic significance under its administration and stewardship.
- **Goal 2. Advance Strategic Port and Small Boat Harbor Development.** Maritime is the first of three primary hard infrastructure groups for the NSPAD to evaluate, plan, and ultimately advance important initiatives.
- **Goal 4. Foster an Expanded Network of Roadways and Corridors Linking Communities and Commerce.** Road building is critical to the economic and social well-being of the North Slope.
- **Goal 5. Identify and Invest in Infrastructure that Enhances Safety and Security.** This goal outlines a number of related infrastructure types considered essential to the ultimate success of hard infrastructure investment categories.
GOAL 1. EMERGE AS A SELF-SUSTAINING ENTERPRISE

This goal addresses how best the NSPAD should be organized and function.

Objective 1: Foster the creation and expansion of the NSPAD to achieve its mission.

1.1.1: Nurture and grow a Department and related divisions to achieve the mission, goals, objectives, and tactics contained in the LRDP.

1.1.2: Advance studies, analysis, planning, design, construction, operation, management, and transfer of hard infrastructure assets to include those associated with maritime, aviation, regional roadways, communications, and other similar endeavors.

1.1.3: Ensure Department efficiency and accountability.

Objective 2: Plan for success.

1.2.1: Prepare, adopt, and update the NSPAD LRDP with a predefined frequency, typically 3 or 5 years.

1.2.2: Prepare annual budgets and strategic plans aligned with the LRDP and guidance provided by the Mayor and Assembly.

1.2.3: Scope and fund necessary studies and business planning for infrastructure investments.

Objective 3: Work together as a community.

1.3.1: Engage the community to foster understanding and support for Department activities, projects, and programs.

1.3.2: Seek local involvement consistency, especially through community leadership participation and input.

1.3.3: Actively participate in and promote public review and input into the writing, review and approval of any regional infrastructure plans or routes undertaken by the Borough, state, or federal government within the NSB.

1.3.4: Participate in regular regional planning with neighboring boroughs, State of Alaska, and appropriate federal agencies.

1.3.5: Provide input and support for legislation and funding at the local, State of Alaska, and federal levels.
Objective 4: Prepare and engage the workforce for employment associated with NSPAD infrastructure initiatives.

1.4.1: Create opportunities to expand training, education, and other opportunities to local citizens and businesses associated with NSPAD endeavors. Collaborate with Ilisagvik College, the State of Alaska, and industry. Seek out opportunities to expand vocational training in local schools and other venues.

1.4.2: Ready the workforce for specific skilled and technical jobs anticipated to emerge from NSPAD infrastructure initiatives.
GOAL 2. PRESERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES

The NSB is already moving forward on this important initiative through its work to bring airports of strategic significant under its administration and stewardship.

Objective 1: Create a portfolio of aviation infrastructure that helps secure the North Slope's aviation resilience.

2.1.1: Working with the state and FAA, complete the transfer of the airports of Utqiaġvik and Point Hope to the NSB.

2.1.2: Continue to pursue the future transfer of the Deadhorse Airport to the NSB.

2.1.3: Seek opportunities to create secondary transportation and logistical infrastructure at Utqiaġvik, Point Hope, and Deadhorse.

2.1.4: Study and prioritize aviation infrastructure investments at other regional community aviation facilities.

2.1.5: Explore and identify grants available to help offset costs associated with airport infrastructure development, expansion, and maintenance.

Objective 2: Support and grow air service to the North Slope

2.2.1: Explore and identify grants available to help provide revenue guarantees, financial assistance for marketing programs, start-up costs, and studies for air services.

2.2.2: Actively work to provide knowledge and network resources to help small airlines and support businesses survive and thrive on the North Slope.

2.2.3: Seek innovative ways new airline services and technologies can be brought to the North Slope.

2.2.4: Work to expand the population of new pilots on the North Slope.
GOAL 3. ADVANCE STRATEGIC PORT AND SMALL BOAT HARBOR DEVELOPMENT

Maritime is the first of three primary hard infrastructure groups for the NSPAD to evaluate, plan, and ultimately advance important initiatives.

Objective 1: Implement development of a deep-water Arctic Port on the North Slope.

3.1.1: In consultation with the NSB, agencies, and regional industries, prepare a detailed programming and siting criteria study for a deep-water port on the North Slope.

3.1.2: Conduct detailed site assessment and select a preferred location for a deep-water port on the North Slope.

3.1.3: Work with the state and federal agencies to study and ultimately designate the area as a federal navigation channel.

3.1.4: Identify project partners and structures for development.

Objective 2: Foster the development of small boat facilities and harbors as determined through community and industry outreach.

3.2.1: Study and assess the benefit associated with creating a network of small boat facilities along the North Slope.

3.2.2: Weigh the potential for NSPAD investment in highly strategic locations for small boat facility and harbor development.

3.2.3: Establish standards and best practices for small communities to follow in creation and expansion of small craft marine facilities.

3.2.4: Explore the need for broadening conflict avoidance agreements and other best practices for marine facility operation to minimize impacts of marine assets on subsistence activities.
Objective 3: Leverage port and harbor assets for marine research activities.

3.3.1: Partner with agencies and institutions to program, design, fund, construct, and operate marine research facilities and activities from NSPAD port and harbor facilities.

3.3.2: Use port and harbor facilities to study how best to respond to oil spills in the Arctic.

3.3.3: Encourage use of unique marine research assets to involve students and young adults on the issues and opportunities to protect and enhance the marine environment.

Objective 4: Ensure port and harbor assets are designed, developed, and utilized to provide critical response to regional oil spills and other hazards to the environment.

3.4.1: Partner with ADEC, the USCG, oil spill removal organizations, North Slope industries, and other agencies to program, design, fund, construct, and operate an oil spill response center from NSPAD port and harbor facilities.

3.4.2: Work with the NSB, village corporations, tribal and city governments, state and federal agencies, USCG, industry partners, and others to identify the critical paths and methods associated with oil spill response, staging of activities, and wildlife rehabilitation.

3.4.3: Advocate for USCG expansion into the Arctic region, including federal funding for development of vessels and equipment to be based year-round in the region.
GOAL 4. FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE

Work is well underway through the Arctic Strategic Transportation and Resources (ASTAR) planning effort and other to bring the next generation of essential roads to the North Slope. Strategically placed and administered roads are critical to the economic and social well-being of the North Slope.

Objective 1: Create a portfolio of roadway infrastructure that helps secure the North Slope surface transportation resilience.

4.1.1: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, advance development of an all-season gravel road and related bridge and other infrastructure linking Atqasuk to Utqiagvik.

4.1.2: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, advance development of an all-season gravel road and related bridge and other infrastructure linking Utqiagvik to Wainwright.

4.1.3: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, study all-season access from Utqiagvik to Deadhorse/Dalton Highway.

4.1.4: Working with the state, regulatory agencies, villages, tribal corporations, and other interests, continue to review opportunities to create a gravel road to replace the +/- 18-mile Alpine resupply ice road in Nuiqsut.

4.1.5: Explore and identify grants available to help provide offset costs associated with roadway infrastructure development, expansion, and maintenance.

4.1.6: Work with the oil industry to consolidate road and utility corridors.
GOAL 5. IDENTIFY AND INVEST IN INFRASTRUCTURE THAT ENHANCES SAFETY AND SECURITY

This goal outlines a number of related infrastructure types considered essential to the ultimate success of hard infrastructure investment categories.

Objective 1: Create a network of air, sea, and road infrastructure, staging areas and check points for use in emergency and pandemic response.

5.1.1: Develop a comprehensive regional network of emergency response infrastructure assets and staging areas. Integrate these assets into the strategies and coordination efforts continued within the NSB Risk Management Office’s Multi-Jurisdictional Hazard Mitigation Plan.

5.1.2: Study, fund, and deliver additional facility spaces in villages aligned with police, fire, search and rescue, and other state, federal, and private emergency services.

5.1.3: Identify and secure grants and other project finance to fund regional emergency response network elements.

5.1.4: Explore how air, harbor, and regional roadway infrastructure can be managed in times of natural disasters and pandemics to manage entry into the North Slope.

Objective 2: Educate communities and individuals on preparedness and emergency response protocols.

5.2.1: Create accessible emergency response literature to educate communities and individuals on risks and disaster response protocols, including best practices, coordinated evacuation plans and routes. A community that is more informed and prepared will have a greater opportunity to rebound quickly following an event.

Objective 3: Study, design, implement, and manage coastal protection and other engineered structures to protect life, property and environment and assist in needed community adaptation.

5.3.1: Develop a long-term coastal adaptation strategy that identifies “adaptation pathways” that allow for responses to be incrementally implemented as conditions and threats evolve over time. This approach allows for prioritization, flexibility and staggering of investments for adaptation measures.
5.3.2: Seek ways to fund and manage critical coastal protection infrastructure.

Objective 4: Promote and partner in the study, funding, and building of the communication system of the future for the North Slope.

5.4.1: Work with existing providers to enhance current communications networks within villages to maximize improved subsea fiber optic connections.

5.4.2: Investigate alternative technologies and partnership opportunities for supplying improved communications systems, especially satellite-based broadband Internet.

5.4.3: Work to plan and partner in building a network of smart rural communities of the future, allowing North Slope villages and industries to unlock new economic value and jump past existing and near-term technologies and capital outlays.
RELEVANT GOALS FROM THE 2019 NSB COMPREHENSIVE PLAN

The following section presents selected goals, objectives, and implementation strategies contained within the approved 2019 NSB Comprehensive Plan considered relevant to the work of the NSPAD. As noted, the LRDP and NSPAD are an important means to implement community vision and desire codified in the Comprehensive Plan. Many aspects of LRDP recommendation and direction take cues from these Comprehensive Plan goals, objectives, and implementation strategies. Please note, only applicable goals, objectives, and policies from the Comprehensive Plan are listed, and as such, there are gaps between some of the subsection references/numbering.
GOAL 1. EMERGE AS A SELF-SUSTAINING ENTERPRISE

Goal 1 of the LRDP is aligned with and seeks to advance the following goals, objectives, and implementation features of the Comprehensive Plan (North Slope Borough, 2019):

GOAL 2: MAXIMIZE OPPORTUNITIES BY ENCOURAGING SELF DETERMINATION

Objective 1: Seek ways for communities to become more self-sufficient.
2.1.1: Seek local involvement consistency, especially through community leadership participation and input.

Objective 3: Strengthen relationships with external agencies for the benefit of residents.
2.3.2: Participate in regular regional planning with neighboring jurisdictions, such as the Northwest Arctic Borough and the Yukon-Koyukuk Borough.

GOAL 4: IMPROVE THE BOROUGH’S TRANSPORTATION NETWORK BETWEEN COMMUNITIES.

Objective 1: Focus efforts to improve inter- and intra-community connectivity.
4.1.1: Investigate ways to entice additional airlines to serve North Slope villages in an effort to increase competition, choice, efficiency, and cost.

4.1.2: Ensure close involvement in any program to connect villages to the road system, which would allow greater infrastructure expansion and investment in villages, but which could negatively affect residents through importation of alcohol and drugs and interrupt subsistence activities and caribou migration routes.

4.1.5: Improve road and airport maintenance budgeting tools to better track and forecast expenditures.

4.1.6: In Utqiaġvik, coordinate with ADOT&PF on lease areas and street realignment to improve airport loading and unloading and traffic congestion.

Objective 2: Coordinate efforts with outside agencies to develop more efficient marine, air and road transportation corridors.
4.2.1: Actively participate in and promote public review and input into the writing, review and
RELEVANT GOALS FROM THE 2019 NSB COMPREHENSIVE PLAN

4.2.2: Develop regulations and guidelines for proper siting, design, construction, and maintenance of transportation facilities so as to not adversely impact subsistence resources.

4.2.3: Continue important efforts to develop a port on the North Slope due to the recent increase in marine traffic, a trend likely to continue well into the future.

4.2.4: Ensure the airport facilities within the Borough continue to meet the needs of residents and the local economy through regular needs assessments and usage data.

4.2.5: Reserve land for future transportation needs and activities through easements and land acquisition.

4.2.6: Develop a program to anticipate advances in transportation technology and other innovations.

Objective 3: Work with Industry to develop mutually beneficial transit on the slope.

4.3.1: Seek assistance and funding from industry for transportation needs

GOAL 6: DEVELOPED STRONG, RESILIENT LOCAL AND REGIONAL ECONOMIES

Objective 1: Encourage collaborative agreements, invest in training, and seek new industries for economic development of the region.

6.1.1: Engage in regional efforts to create a trained local workforce, including collaborative efforts with Ilisaġvik College, the State of Alaska, and industry.

GOAL 7: PROVIDE ESSENTIAL PUBLIC INFRASTRUCTURE AND SERVICES

Objective 1: Seek program improvements to better maintain infrastructure and consolidate and share services.
7.1.7: Seek innovative ways to coordinate or consolidate infrastructure, such as constructing one ice road and accessing a toll for industry use.

7.1.8: Research potential ramifications of climate change on the region’s infrastructure and plan accordingly.

GOAL 13: ENSURE GOVERNMENT EFFICIENCY AND ACCOUNTABILITY

Objective 2: Rediscover our founders’ intent as a home rule Borough.

13.2.1: Measure government performance and make information available to the public.

13.2.2: Focus on consistent and effective enforcement of Borough laws and regulations.

13.2.3: Review options to ensure that local resources are deployed in the most cost effective manner to help achieve the community’s vision and goals for the future.
RELEVANT GOALS FROM THE 2019 NSB COMPREHENSIVE PLAN

GOAL 2. PRESERVE THE ESSENTIAL ROLE OF AIRPORTS AND AIR SERVICES

The LRDP is aligned with and seeks to advance the following goals, objectives, and implementation features of the 2019 Comprehensive Plan (North Slope Borough, 2019).

GOAL 4: IMPROVE THE BOROUGH’S TRANSPORTATION NETWORK BETWEEN COMMUNITIES.

Objective 1: Focus efforts to improve inter- and intra-community connectivity.

4.1.1: Investigate ways to entice additional airlines to serve North Slope villages in an effort to increase competition, choice, efficiency, and cost.

4.1.5: Improve road and airport maintenance budgeting tools to better track and forecast expenditures.

4.1.6: In Utqiagvik, coordinate with ADOT&PF on lease areas and street realignment to improve airport loading and unloading and traffic congestion.

Objective 2: Coordinate efforts with outside agencies to develop more efficient marine, air and road transportation corridors.

4.2.2: Develop regulations and guidelines for proper siting, design, construction, and maintenance of transportation facilities so as to not adversely impact subsistence resources.

4.2.4: Ensure the airport facilities within the Borough continue to meet the needs of residents and the local economy through regular needs assessments and usage data.

4.2.9: Seek bonding and other funding for port one or more facilities from non-Borough entities.

GOAL 5: PROTECT THE İNUPIAQ LANGUAGE AND SUBSISTENCE CULTURE.

Objective 2: Protect and enhance access for traditional subsistence activities to ensure food security and cultural values.

5.2.10. Plan, design, construct, and maintain infrastructure and facilities in a manner that preserves the local environment and subsistence lifestyle.
Goal 3 of the LRDP is aligned with and seeks to advance the following goals, objectives, and implementation features of the adopted 2019 North Slope Comprehensive Plan (North Slope Borough, 2019).

**GOAL 4: IMPROVE THE BOROUGH’S TRANSPORTATION NETWORK BETWEEN COMMUNITIES.**

Objective 2: Coordinate efforts with outside agencies to develop more efficient marine, air and road transportation corridors.

4.2.2: Develop regulations and guidelines for proper siting, design, construction, and maintenance of transportation facilities so as to not adversely impact subsistence resources.

4.2.3: Continue important efforts to develop a port on the North Slope due to the recent increase in marine traffic, a trend likely to continue well into the future.

4.2.9: Seek bonding and other funding for port one or more facilities from non-Borough entities.

**GOAL 5: PROTECT THE İŇUPIAQ LANGUAGE AND SUBSISTENCE CULTURE.**

Objective 2: Protect and enhance access for traditional subsistence activities to ensure food security and cultural values.

5.2.10: Plan, design, construct, and maintain infrastructure and facilities in a manner that preserves the local environment and subsistence lifestyle.

**GOAL 7: PROVIDE ESSENTIAL PUBLIC INFRASTRUCTURE AND SERVICES.**

Objective 2: Address current critical infrastructure needs and plan for future needs.

7.2.3: Proactively protect critical infrastructure from unforeseen events, such as flooding and storm events.
GOAL 4. FOSTER AN EXPANDED NETWORK OF ROADWAYS AND CORRIDORS LINKING COMMUNITIES AND COMMERCE

Several goals, objectives, and implementation features from the current Comprehensive Plan are aligned with the efforts and initiatives provided under within the LRDP (North Slope Borough, 2019). We highlight these in the following section.

GOAL 1: COOPERATE WITH LANDOWNERS AND LAND MANAGERS TO UPDATE LAND USE REGULATIONS CONSISTENT WITH VILLAGE PRIORITIES.

Objective 1. Land use regulations and procedures should reflect current goals and priorities.

1.1.7: Establish future transportation and utility corridors where appropriate with collaboration with federal and state agencies and landowners.

GOAL 4: IMPROVE THE BOROUGH’S TRANSPORTATION NETWORK BETWEEN COMMUNITIES.

Objective 1: Focus efforts to improve inter- and intra-community connectivity.

4.1.2: Ensure close involvement in any program to connect villages to the road system, which would allow greater infrastructure expansion and investment in villages but could also negatively affect residents through importation of alcohol and drugs and interrupt subsistence activities and caribou migration routes.

4.1.5: Improve road and airport maintenance budgeting tools to better track and forecast expenditures.

Objective 2: Coordinate efforts with outside agencies to develop more efficient marine, air and road transportation corridors.

4.2.1: Actively participate in and promote public review and input into the writing, review and approval of any transportation or utility corridors, plans or routes undertaken by the borough, state, or federal government within the NSB.

4.2.5: Reserve land for future transportation needs and activities through easements and land acquisition.
Objective 3: Work with Industry to develop mutually beneficial transit on the slope.
  4.3.1: Seek assistance and funding from industry for transportation needs.
  4.3.2: Seek borough right-of-first refusal on remediated abandoned industry gravel roads.

GOAL 5: PROTECT THE IÑUPIAQ LANGUAGE AND SUBSISTENCE CULTURE.
Objective 2: Protect and enhance access for traditional subsistence activities to ensure food security and cultural values.
  5.2.5: Encourage more research and coordination on studying and mitigating any potential effects of future road corridors on caribou migration.
  5.2.7: Encourage industry and the State of Alaska to work with local residents when designing new roads to determine if it would be desirable to include pullouts to accommodate subsistence users.

Relevant Goals from the 2019 NSB Comprehensive Plan

GOAL 7: PROVIDE ESSENTIAL PUBLIC INFRASTRUCTURE AND SERVICES.

Objective 1: Seek program improvements to better maintain infrastructure and consolidate and share services.
  7.1.7: Seek innovative ways to coordinate or consolidate infrastructure, such as constructing one ice road and accessing a toll for industry use.

5.2.10: Plan, design, construct, and maintain infrastructure and facilities in a manner that preserves the local environment and subsistence lifestyle.
GOAL 5. IDENTIFY AND INVEST IN INFRASTRUCTURE THAT ENHANCES SAFETY AND SECURITY

The LRDP is aligned with and seeks to advance the following goals, objectives, and implementation features of the Comprehensive Plan (North Slope Borough, 2019).

Objective 2: Address current critical infrastructure needs and plan for future needs.

7.2.3: Proactively protect critical infrastructure from unforeseen events, such as flooding and storm events.

7.2.7: Assist local efforts to secure search and rescue facility space in the villages.

7.2.8: Investigate alternative technologies for supplying improved communications systems.

7.2.9: Enhance current communications networks within villages to maximize improved subsea fiber optic connections.

7.2.10: Seek funding for development of terrestrial high speed fiber optic networks to inland communities.

GOAL 7: PROVIDE ESSENTIAL PUBLIC INFRASTRUCTURE AND SERVICES.

Objective 1: Seek program improvements to better maintain infrastructure and consolidate and share services.

7.1.1: Implement a program for consistency and standardization of utilities in general, and utility technology, construction, and maintenance software programs specifically, for easier maintenance and upgrades.

7.1.8: Research potential ramifications of climate change on the region’s infrastructure and plan accordingly.
NORTH SLOPE BOROUGH
ORDINANCE SERIAL NO. 2014-01-1

AN ORDINANCE AMENDING TITLE 4 OF THE
NORTH SLOPE BOROUGH CODE TO CREATE
THE NORTH SLOPE BOROUGH PORT
AUTHORITY DEPARTMENT

WHEREAS, on July 1, 2014, the North Slope Borough (Borough) Assembly adopted Ordinance 2014-01 as Title 4 of the North Slope Borough Code, creating a Port Authority; and

WHEREAS, that Port Authority became defunct, as acknowledged by its last Chair in a letter dated August 21, 2020 dissolving the Port Authority; and

WHEREAS, Title 4 of the North Slope Borough Code (NSB Code) is still in effect, and can be modified to suit the needs of the people of the North Slope Borough; and

WHEREAS, NSB Code Section 4.01.030, titled, “Creation of the Authority,” specifies that, “the Authority shall be a public corporation separate and apart from the North Slope Borough”; and

WHEREAS, it has been determined that the creation of a Borough Port Authority department and an advisory board to carry out the goals of a Port Authority would make the goals of the Port Authority subject to the needs of the people and more readily obtained; and

WHEREAS, as acknowledged by Alaska Statutes section 29.35.605(d), “Establishment of port authorities,” creation of the former port authority was an exercise of the municipality’s (Borough’s) transportation system powers, some of which are noted in NSB Code Section 1.20.010 “Powers outside Incorporated Cities,” paragraphs (C), (l), (I), and (P); and

WHEREAS, under Alaska Constitution Article 10, “Local Government,” Section 11, “Home Rule Powers,” and Alaska Statute section 29.35.410, “Extent of Powers,” the Borough has and may exercise all power and functions necessarily or fairly implied in or incident to its purpose, an edict seconded by NSB Charter section 2.020, “Construction,” stating that the powers of the Borough shall be liberally construed, and the enumeration of a particular power in the Charter shall not be construed as limiting the powers of the municipality; and

WHEREAS, the Assembly establishes departments under North Slope Borough Charter (NSB Charter) Sections 4.060(a) “Acts Required to be by Ordinance,” and 5.090, “Unified Administration,” and NSB Code sections 2.04.060, “Department
Establishment Power,” and 2.08.010 “Distribution of Activities Among Departments; Administration”; and

WHEREAS, the Assembly establishes Boards and Commissions under NSB Charter 3.130 “Boards and Commissions”.

NOW, THEREFORE, BE IT ENACTED THAT:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become part of the Borough Code.

Section 2. Severability. If any provision of this ordinance or any application thereof to any person or circumstances is held invalid, the remainder of this ordinance and the application to other persons and circumstances shall not be affected thereby.

Section 3. Effectiveness. This code ordinance shall become effective immediately upon adoption.

Section 4. Repeal, Amendment and Adoption of Sections. Code Sections 4.01.010 to 4.01.180 are hereby amended to read with new language indicated by underlining and bolding, and deleted language by brackets and strike through [brackets] as set forth below in Exhibit A as part of the Code of Ordinances of the North Slope Borough.

INTRODUCED: November 10, 2020
ADOPTED: December 1, 2020

John Hopson, Jr., President
Date: 12/1/2020

Sheila Burke, Borough Clerk
Date: 12/1/2020

Harry Brewer, Jr., Mayor
Date: 12/1/2020
EXHIBIT A

TITLE 4: - NORTH SLOPE BOROUGH PORT AUTHORITY DEPARTMENT

§ 4.01.010 - Definitions.

For the purpose of this Title the following definitions shall apply unless the context clearly indicates or requires a different meaning.

[Act—The term "Act" shall mean the Municipal Port Authority Act, Alaska Statute §29.35.600—29.35.730.]

[Authority] Department - The term ["Authority"] "Department" shall mean the North Slope Borough Port Authority Department.

Assembly - The term "Assembly" shall mean the North Slope Borough Assembly.

Board - The term "Board" shall mean the [governing] advisory board of the [Authority] Department.

Bonds - The term "Bonds" shall mean bonds or other obligations of the [Authority] Borough authorized and issued [pursuant to the Act] to carry out the purposes of this ordinance, including each and all series of bonds, and shall also include, any other form of indebtedness of the [Authority] Borough authorized, issued or incurred [pursuant to the Act] to carry out the purposes of this ordinance.

Borough - The term "Borough" shall mean the North Slope Borough.

Bylaws - The term "Bylaws" shall mean the bylaws of the Advisory Board [Authority] as adopted by the Advisory Board [Director] pursuant to this [pursuant to the Act and section 4.01.080 of this] Ordinance.

Mayor - The term "Mayor" shall mean the Mayor of the North Slope Borough.

Project - The term "Project" shall mean the acquisition, construction financing, installation, and improvement of a port facility, airport, road, pipeline right of way, communication system or other transportation or cargo related facility, emergency and oil spill response or other maritime service within the North Slope Borough.
§ 4.01.020 - Purpose and boundaries.

[6A] The purpose of the [Authority] Department is to plan for, finance, construct, operate and maintain transportation related facilities and activities within the boundaries of the North Slope Borough. These facilities and activities, or Projects, are intended to provide emergency response capability, environmental protection, improved efficiency of local cargo operations, facilitation of resource development, and provision of training and employment opportunities for local residents. These facilities and activities shall be pursuant to the Development Plan.

[(B) The boundaries of the Authority shall be coterminous with the boundaries of the North Slope Borough.]

§ 4.01.030 - Creation of the [Authority] Department.

There is created within the North Slope Borough a Port Authority Department.

[Upon approval by a majority of the voters in the next regular Borough election, there shall be created pursuant to the Act and this Ordinance a Port Authority to be known as the "North Slope Port Authority". As provided in the Act, the Authority shall be a public corporation separate and apart from the North Slope Borough.]

§ 4.01.040 – Power; restriction upon exercise.

(A) The [Authority] Department Director and his delegate(s) shall have the power to advise the Mayor that the Borough acquire by purchase, assignment, lease, or contribution real property and personal property for a Project and to construct and improve, or cause to be constructed and improved and to maintain and operate by its own administration or by contracts with third parties, all or parts of a Project [of the Authority, subject to the conditions and restrictions in this Ordinance].

(B) The [Authority] Department Director and his delegate(s) are [in its own name] to advise the Mayor to do all acts on behalf of the Borough necessary or convenient for carrying out the purpose of the Department [the exercise of said power for said purposes as specified in A.S. §29.35.620], including the following:

1. Sue and be sued;
2. Have a seal and alter it at pleasure;
3. Acquire an interest in a Project as necessary or appropriate to provide financing for the Project, whether by purchase, gift, or lease;
(4) Lease to others a Project acquired by it and upon the terms and conditions the
[Authority] Department may consider advisable, including, without limitation, provisions for purchase or renewal;

(5) Sell, by installment, sale or otherwise exchange, donate, convey or encumber in any manner by mortgage or by creation of another security interest, real or personal property owned by it, or in which it has an interest including a project, when in the judgment of the Department Director or his delegate(s) [Authority], the action is in furtherance of the [Authority's] Department's purposes;

(6) Accept gifts, grants, or loans, under the terms and conditions imposed under the gift, grant or loan, and enter into contracts, conveyances or other transactions with a federal agency or an agency or instrumentality of the state, a municipality, tribe, private organization or other person;

(7) Deposit or invest its funds, subject to agreements with bondholders;

(8) Purchase or insure loans to finance the costs of projects;

(9) Provide for security within the boundaries of the Authority;

(10) Enter into loan agreements with respect to one or more projects upon the terms and conditions the [Authority] Department considers advisable;

(11) Acquire, manage, and operate projects as the [Authority] Department considers necessary or appropriate to serve the Authority's purposes;

(12) Assist private lenders to make loans to finance the costs of projects through loan commitments, short term financing, or otherwise;

(13) Charge fees or other forms of remuneration for the use or possession of projects in accordance with the agreements described in this section, other agreements relating to the projects, covenants, or representations made in bond documents relating to the projects [or regulations of the Authority relating to the projects];

(14) The [Authority] Borough may receive real properties acquired under eminent domain or through takings by the North Slope Borough;

(15) Defend and indemnify a current or former member of the board, employee or agent of the [Authority] Borough against all costs, expenses, judgments, and liabilities, including attorney fees, incurred by or imposed upon that person in connection with civil or criminal action in which the person is involved as a result of the person's affiliation with the [Authority] Department if the person acted in good faith on behalf of the [Authority] Department and within the scope of the person's official duties and powers;

(16) Purchase insurance to protect and hold harmless [its] Department employees, agents, and board members from an action, claim or proceeding arising out of the performance, purported performance, or failure to perform in good faith, of duties for, or employment with the [Authority] Department and to hold them harmless from expenses connected with the defense, settlement, or
monetary judgments from that action, claim or proceeding [that the purchase of insurance is subject to the discretion of the Board]. Insurance purchased under this paragraph may not be considered compensation to the insured person; and,

(17) Protect [its] Borough assets, services and employees associated with the Department by purchasing insurance or providing for certain self-insurance retentions; the [Authority] Borough may also maintain casualty, property, business interruption, marine, boiler and machinery pollution liability, and other insurance in amounts reasonably calculated to cover potential claims against the [Authority] Borough or a municipality for bodily injury, death or disability and property damage that may arise from or be related to [Authority] Department operations and activities.


The [authority] Department shall be [governed] advised by [a board of directors] an advisory board, which shall [exercise] pay heed to the responsibilities of the Department in offering recommendations, [the powers of the authority.]

(A) Composition. The Advisory board shall be composed of seven (7) members represented in the following manner:

(1) 1 member appointed at large;
(2) 1 member representing a regional native corporation;
(3) 1 member representing a native village corporation;
(4) 1 member representing a North Slope tribal organization;
(5) 1 member representing a City government within the North Slope Borough;
(6) 1 member representing the North Slope Borough;
(7) 1 member representing the Alaska Eskimo Whaling Commission

(B) Board members shall be appointed by the Mayor subject to confirmation by the Assembly.

(C) The term of office of the Board shall be three (3) years. Initial appointment shall be staggered to provide continuity of Board functions.

(D) Compensation. Members of the Board shall be entitled to receive reimbursement for any expenses actually incurred in connection with serving as a member of the Board. Board members may be paid a stipend for their service if there are unencumbered funds available for such purposes.

(E) Removal. A member of the Board may be removed by an affirmative vote of at least two-thirds of the members of the Assembly. The Board member being
considered for removal shall have the option of appearing before the Assembly in advance of the vote for removal.

(F) Vacancy. A Vacancy shall be filled by the Mayor subject to confirmation by the Assembly. Appointments to fill vacancies shall be for the unexpired term only.

§ 4.01.060 – Bylaws of the Advisory Board.

The Board shall adopt appropriate bylaws necessary or convenient for the conduct of its advisory function and purposes, in accordance with this [AS §§29.35.600 – 29.35.730, the enabling] ordinance and the North Slope Borough Municipal Code. Among other requirements, these bylaws must include a section outlining Conflicts of Interest.

§ 4.01.070 - Meetings of the Advisory Board.

The time, place, manner of calling, conducting and giving public notice of meetings of the Advisory Board shall be as set forth in the Bylaws and shall be subject to AS §§40.25.110 - 40.25.220 and AS §§44.62.310 - 44.62.319 (Open Meetings Act).

§ 4.01.080 – [Officers; duties.] Department Director: Divisions

(A) The Mayor shall appoint a Department Director who serves at the pleasure of the Mayor. [The Board shall appoint a chief executive officer of the Authority who serves at the pleasure of the Board. The Board shall fix the compensation of the chief executive officer.]

(B) [The Board shall appoint other officers as shall be set forth in the Bylaws.] The Department shall have four initial divisions: Airports, Seaports, Roads and Telecommunications. With approval of the Mayor the Director may add further divisions, as required, upon consultation with the Advisory Board.

(C) [The Duties of the Officers will be outlined in the Bylaws.] The Department Director will outline the duties and procedures of the divisions.

§ 4.01.090 - Bonds; indebtedness.

(A) The [Authority] Department Director or his delegate(s) shall have power to recommend to the Mayor to issue Bonds [in accordance with the provisions of the Act] for the purpose of raising funds necessary to carry out [its powers under this Ordinance] Department objectives and to enter into appropriate agreements or leases to secure said Bonds.

(B) The [Authority] Department Director or his delegate(s) shall also have the power to recommend to the Mayor to issue any other form of indebtedness
authorized by the [Act] Borough Code [in accordance with the provisions of the Act for such purposes.] to carry out Department objectives.

§ 4.01.100 - Debts, liabilities and limits thereon:

(A) In accordance with AS 29.35.640, the debts, liabilities and obligations of the Authority shall not constitute debts, liabilities or obligations of the North Slope Borough.

(B) A liability incurred by the Authority shall be satisfied exclusively from the assets or revenue of the Authority. No right of action against the North Slope Borough shall exist.

§ 4.01.110 - Operation of projects.

The [Authority] Department shall provide for the operation and maintenance of its Projects in cooperation with other Departments of the Borough.

§ 4.01.120 - Contributions and advances; payment of costs.

Contributions or advances of public funds and of personnel, equipment or property may be made [to the Authority] by the North Slope Borough for any of the purposes of this Ordinance. Payment of public funds may be made to defray the cost of any such contribution. [Any such advance may be made subject to repayment and in such case shall be repaid in the manner agreed upon by the Borough and the Authority at the time of the making of such advance.]

§ 4.01.130 - Accounts, audits and annual reports.

(A) The [Authority] Department shall establish and maintain such funds and accounts as may be required by generally accepted accounting principles and by any provision of any resolution of the [Authority] Borough securing Bonds. [The books and records of the Authority shall be open to inspection at all reasonable times by the Borough and their respective representatives.]

(B) The [Board] Borough shall have the financial records of the [Authority] Department audited annually by an independent certified public accountant. The [Authority] Department shall make all of its financial records available to the auditor. [an auditor appointed by a municipality participating in the authority for examination.]
(C) Within ninety (90) days following the end of each fiscal year of the [Authority] Borough, the [Board] Department shall distribute to the Mayor, the Assembly, and the public, a report describing the development plans, operations and financial condition of the [Authority] Department during the preceding fiscal year ("Annual Report"). The report may include suggestions for legislation relating to the structure, powers, or duties of the [Authority] Department or operation of facilities of the [Authority] Department. The report must itemize the cost of providing each category of service offered by the [Authority] and the income generated by each category.

§ 4.01.140 - Development plan.

(A) The North Slope Borough Port Authority Department shall create a Development Plan that outlines the Projects it will develop. This Plan will include construction and operation of sea, land and air transportation facilities and systems, and associated services such as communications and training, for the purpose of providing emergency response capability, efficient commercial delivery of goods and services, resource development and training for local workforce development.

(B) The [authority] Department shall be:

1. Required to submit a Development Plan to the North Slope Borough Planning Commission and the Assembly for approval; and

2. Prohibited from undertaking the construction or acquisition of a project unless the project appears in a Development Plan submitted to and approved by the North Slope Borough Planning Commission and the Assembly.

§ 4.01.150 - Taxation.

[(A) The Authority, exercising the powers granted by the enabling ordinance under AS 29.35.600 - 29.35.730 is in all respects for the benefit of the people of the Borough and the people of the State in general, for their well-being and prosperity, and for the improvement of their social and economic condition. The real and personal property of the Authority and its assets, income, and receipts are exempt from all taxes and special assessments of the State or the Borough.]

[(B) Bonds issued by the Authority under AS 29.35.625 are issued for an essential public and governmental purpose; therefore, the bonds, interest and income from them, and all fees, charges, funds, revenue, income, and other money pledged or available to pay or secure the payment of the bonds or interest on them are exempt from taxation except for inheritance, transfer, and estate taxes.]

[(C) Notwithstanding the provisions of (a) of this section, the Authority and the Borough may enter into agreements under which the Authority agrees to pay the Borough payments in lieu of taxes and special assessments on real and personal property of the Authority that is within the taxing jurisdiction of the Borough.]
Nothing in this [section] ordinance creates a tax exemption with respect to the
interests of a business enterprise or other person, other than the Borough
Authority, in property, assets, income, or receipts [—whether or not finances under AS 29.35.600
—29.35.730].

§ 4.01.160—Dissolution.

The Authority shall continue in existence and effect until the later of (1)
such time as the Bonds and the interest thereon shall have been paid in full, and
(2) dissolution of the Authority upon an affirmative vote of at least two-thirds of
the members of the Board.

Upon dissolution of the Authority, the assets of the Authority shall be
distributed to the Borough, provided that any obligation to bondholders then
outstanding shall first be satisfied in full.

§ 4.01.170 - Section headings.

All section headings contained herein are for convenience of reference
only and do not limit the scope of any provision of the Ordinance.

§ 4.01.180 - Amendment of law.

All references in the Ordinance to specific [statues] statutes shall be
construed to refer to those [statues] statutes as may be amended or recodified
from time to time.
REFERENCES


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