

Prepared by: HDR

May 20, 2019



# **Table of Contents**

L		Introdu	ction	5
1.	1	Study A	rea Description	5
1.	2	Existing	System Description	6
1.	3	Roads		7
		1.3.1	NHS	7
		1.3.2	Alaska Highway System	7
		1.3.3	State Highway System	8
		1.3.4	Local or Community Roads	8
		Boa	rd Roads	9
		1.3.5	Industrial Roads	9
		1.3.6	Functional Classification	9
1.	4	Bridges		13
1.	5	Pedestr	ian Facilities	14
1.	6	Transit	System	14
,		Road Ti	ransportation Trends and Issues	15
<u>.</u> 2.			ion	
۷.		2.1.1	Average Annual Daily Traffic	
			ne	
			zebue	
			iaġvik (formerly Barrow)	
2.	2		red Vehicles	
2.		•	hway Drivers' Licenses	
2.		U	onal Issues	
۷.		2.4.1	Road maintenance	
		2.4.2	Safety	
		2.4.3	Dust Control	
		2.4.3	Climate	
		2.4.5	Drifting Snow/Fencing	
3		DOT&P	F Completed Projects since 2004	28
1		Major F	Road Projects Under Development or Study	30
4.			Road	
4.	2	ASTAR.		31
4.	3	Yukon F	River Corridor	32
4.	4	Cape Bl	ossom Road	34
4.	5	Red Do	g Mine/ Delong Mountain Transportation System Expansion	35
4.			ret Road	
4.	7	Dalton	Highway Projects	36
4.			OT&PF Planned Projects	
5			ed Local Roads Needs	
		Roforor	nces	30
,		WEIGIGI	ICC3	J

7	Appendix A – Road by Surface by Community41
8	Appendix B – Functional Classification by Community45
9	Appendix C - Identified Local Roads Needs51
List o	of Tables
Table 2 Table 3 Table 4	L. AHS Facilities in Northwest Alaska
List o	of Figures
	1. Study Area and Subregions6
	2. Distribution of NHS7
	3. Distribution of AHS7
_	4. Functional Classification Map – Nome
_	5. Functional Classification Map – Kotzebue11
	6. Functional Classification Map – Utqiagʻvik
-	7. Distribution of Roads by Functional Classification
	8. Bridges in the Region
_	9. Northwest Alaska Population Projection
	10. AADT on the Dalton Highway, 2012–2017
	11. 2017 Average Annual Daily Traffic for Nome
	12. Nome Population vs AADT, 2012–2017
	13. 2017 Average Annual Daily Traffic for Kotzebue
	14. Kotzebue Population vs AADT, 2012–2017
	15. 2017 Average Annual Daily Traffic for Utqiagʻvik
	16. Utqiagʻvik Population vs AADT, 2012–2017
_	17. Registered Vehicles, 2010-2018
•	18. Proposed Ambler Mining District Industrial Access Project
_	19. Proposed Preliminary ASTAR Alignments
	20. Refined Yukon River Corridor Stages
_	21. Proposed Route for the Cape Blossom Road
Figure	22. Totchaket Road Right-of-Way36

## Acronyms and Abbreviations

AADT Average Annual Daily Traffic
ADA Americans with Disabilities Act

AHS Alaska Highway System

AIDEA Alaska Industrial Development and Export Authority
ASTAR Arctic Strategic Transportation and Resource Project

ATV All-Terrain Vehicle

DMTS Delong Mountain Transportation System

DMV Alaska Department of Motor Vehicles

DOLWD Alaska Department of Labor and Work Force Development

DOT&PF Alaska Department of Transportation and Public Facilities

MP Milepost

NEI Northern Economics, Inc.
NHS National Highway System

NPR-A National Petroleum Reserve-Alaska

NPS National Park Service
NSB North Slope Borough

NVPH Native Village of Point Hope

NWATP Northwest Alaska Transportation Plan

SHS State Highway System

STIP State Transportation Improvement Program

This page intentionally left blank.

## 1 Introduction

Roads play a critical role in moving people, goods, and services in Northwest Alaska. Although most communities in the Northwest Alaska Transportation Plan Study are not connected to the contiguous road system, local and regional roads provide access to community airports, barge landings, schools, landfills, and clinics. Roads also support infrastructure development and economic activity in the area and provide access to important economic engines such the North Slope Oil Fields, Red Dog Mine, and the Port of Nome. A new industrial road in support of the Ambler Mining District is under study. The proposed Cape Blossom Road may provide a better intermodal connection to improved marine facilities to support the Northwest Arctic Borough communities. The road to Tanana provides a new connection to the Yukon River, enabling a closer connection to the contiguous road system to Middle Yukon communities. The Department of Natural Resources Arctic Strategic Transportation and Resource Project (ASTAR) study program is considering potential road corridors throughout the North Slope Borough. The proposed Tochaket Road would connect Nenana to 900,000 acres of agricultural lands, timber resources, mineral deposits, and potential oil and gas fields. New roads such as the Kivalina Evacuation Road are being developed to address coastal storms, flooding, and erosion as a result of the warming Arctic.

The Alaska Department of Transportation and Public Facilities (DOT&PF) partners with local governments, Native Tribes, and private operators to develop, expand, and maintain the Northwest Alaska road system. This Technical Memorandum describes the existing roads serving Northwest Alaska, discusses many of the major projects in the development process, and provides a comprehensive list of local roads needs identified through a review of local plans and public outreach.

### 1.1 Study Area Description

The Northwest Alaska region consists of four subregions: the North Slope Borough, Northwest Arctic Borough, Seward Peninsula, and Middle Yukon River (see Figure 1).



Figure 1. Study Area and Subregions

## 1.2 Existing System Description

According to DOT&PF records, the Northwest Alaska Transportation Plan (NWATP) planning area includes 1,578 miles of public roads (including 286.4 miles of paved roads). See Appendix A for mileage of paved and unpaved roads by community.

#### 1.3 Roads

#### 1.3.1 NHS

The National Highway System (NHS) is an interconnected system of routes that serve important national functions: security, commerce, and travel. The NHS consists of principal arterial routes and routes connecting to major intermodal facilities such as airports, ports,

and ferry terminals. NHS routes in Alaska are typically managed and maintained by  ${\tt DOT\&PF}$ .

Alaska has 2,352 centerline miles of NHS with 489.6 miles or 21 percent in the study area (see Figure 2). The two NHS facilities in the study area are:

 Dalton Highway – A 414-mile highway that connects the Elliott Highway to Deadhorse. It serves as the supply route to the North Slope oil field. The 2017 Average Annual Daily Traffic (AADT) ranges from 150 to 244. It generally has more traffic in summer than in winter. Most of the highway has a gravel surface.

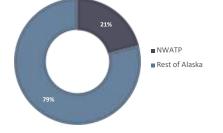


Figure 2. Distribution of NHS

Parks Highway - A 323-mile paved highway<sup>1</sup> that connects
 Fairbanks to Southcentral Alaska and provides highway access to the Port of Nenana. Only 55 miles of the highway are in the study area. The 2017 AADT on this segment was 1,545.

### 1.3.2 Alaska Highway System

The Alaska Highway System (AHS) consists of highways that have statewide significance but are not on the NHS. The AHS includes routes that connect communities and routes that link to recreational sites or areas of resource development. Most AHS routes are managed and maintained by DOT&PF.

Alaska has 1,507 miles of AHS, and 338.8 of them (22.5 percent) are in Northwest Alaska (see Figure 3). Table 1 summarizes the AHS facilities in the region.

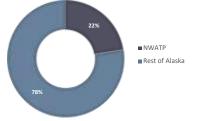


Figure 3. Distribution of AHS

Table 1. AHS Facilities in Northwest Alaska

Road Name	Community Served	Length (miles)	Surface	Seasonal Closures	2017 AADT
Elliott Highway	Manley Hot Springs, Minto, Livengood	154	Gravel & Pavement	None	48–368
Nome – Council Road	Nome, Council	69	Gravel	Winter	179
Kougarok Road <sup>d</sup>	Nome, Pilgrim Hot Springs	85	Gravel	Winter	188

 $<sup>^{\</sup>scriptsize 1}$  Only 55 miles is within the planning area.

Road Name	Community Served	Length (miles)	Surface	Seasonal Closures	2017 AADT
Nome – Teller Road	Nome, Teller	72	Gravel	Winter	26
Minto Road	Minto	11	N/A	N/A	42
Minook Creek Road	Rampart	4	N/A	N/A	N/A
Eureka-Rampart Road	Rampart	12.4	N/A	Winter	18
Glacier Creek Road	Nome	11	N/A	N/A	65

<sup>&</sup>lt;sup>a</sup> Alaska Highway System (AHS): The Alaska Highway System consists of highways that have statewide significance but are not on the NHS. The AHS includes routes that connect communities and routes that link to recreational sites or areas of resource development. Most AHS routes are owned by DOT&PF.

Notes: AADT = annual average daily traffic

### 1.3.3 State Highway System

The State Highway System (SHS) refers to the system of highways and roads that are owned by DOT&PF. This includes all NHS, AHS, and some collector and local roads. These routes must be designated by the DOT&PF Commissioner in accordance with 17 Alaska Administrative Code 05.010 and Alaska Statute 19.10.

## 1.3.4 Local or Community Roads

Local roads, or community roads, are used to travel within a community. These roads may be paved or hardened, gravel or board roads. A community's road system depends on several factors, including available funding, traffic volumes, and environmental conditions. Larger communities rely on a combination of cars, trucks, all-terrain vehicles (ATVs), and snowmachines, while the smaller communities typically rely on ATVs and snowmachines.

Community roads serve a variety of functions including:

- Airport access roads to support the movement of people and goods by air.
- Roads to material sites to access gravel, which is essential to the development of community facilities.
- Access to boat launches/barge landings to support fuel and freight deliveries as well as subsistence fishing activities.
- Sanitation roads to access landfills, water, and wastewater sites. These connections are important for the health of community residents.
- Evacuation routes to provide residents with a path to a safe area during a storm or other disaster.

<sup>&</sup>lt;sup>b</sup> State Highway System (SHS): Identify state roads that do not have a population base. The SHS consists of roads owned by DOT&PF.

<sup>&</sup>lt;sup>d</sup> Also known as Nome-Taylor Road.

e From Fairbanks to Nenana.

f Source: DOT&PF 2011a.

#### **Board Roads**

In some communities, traditional road construction and maintenance are cost-prohibitive due to environmental conditions and lack of locally available earth materials. These communities are served by a drivable board road, which has proven to be an economical alternative to more traditional road surfaces. Board roads are often used by ATVs, snowmachines, and pedestrians.

### 1.3.5 Industrial Roads

Industrial roads in the planning area include private roads owned by the oil companies within the North Slope Borough and the Delong Mountain Transportation System (DMTS). Use of these roads is restricted to authorized vehicles only. The DMTS was opened in 1989 to support the development of the Red Dog Mine. The road



Source: DOT&PF

is a 52-mile, 30-foot-wide, all-weather, gravel industrial haul road that goes between the port and the mine site (AIDEA 2018). The construction of DMTS was funded by Alaska Industrial Development and Export Authority (AIDEA) cash and bonds. Road users are charged a "toll" that is used to repay the bonds.

#### 1.3.6 Functional Classification

"Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide (DOT&PF nd (a))." The basic functions are:

- Arterial: road that provides mobility so traffic can move from one place to another quickly and safely.
- Collector: road that link arterials and local roads, and performs some duties of each.
- Local: road that provides access to homes, businesses, and other property.

Figure 4, Figure 5, and Figure 6 show roads by functional classification.

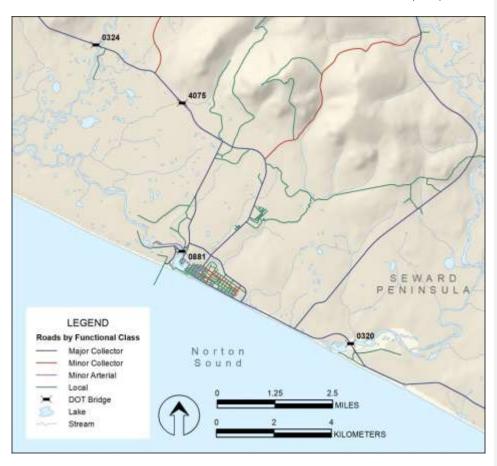


Figure 4. Functional Classification Map – Nome

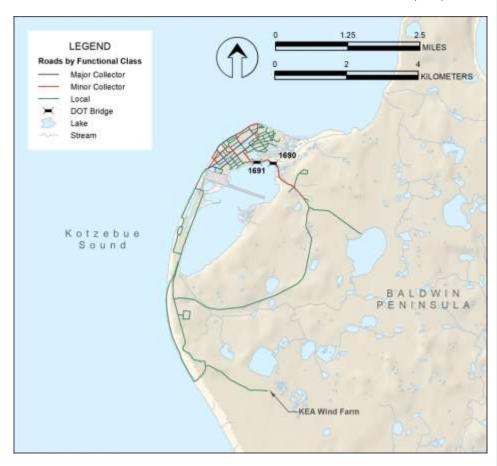


Figure 5. Functional Classification Map – Kotzebue

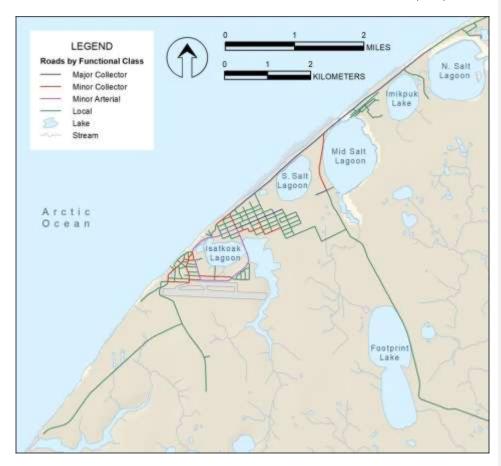


Figure 6. Functional Classification Map – Utqiagʻvik

Figure 7 shows the distribution of roads by functional classification in the Northwest Region.

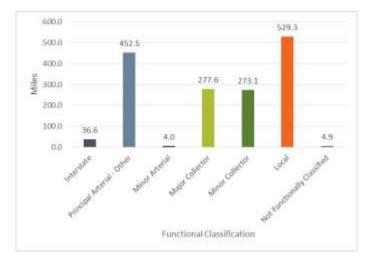


Figure 7. Distribution of Roads by Functional Classification

## 1.4 Bridges

DOT&PF is responsible for maintaining the 113 bridges in the region (see Figure 8). Almost half (48.7 percent) of these bridges are on the Dalton Highway.



Figure 8. Bridges in the Region

#### 1.5 Pedestrian Facilities

Pedestrians share the road with motorized traffic due to the lack of pedestrian facilities in most study area communities. Nome and Kotzebue have limited sidewalk networks. The condition of the sidewalks is unknown.

#### 1.6 Transit System

There are limited transit services in the planning area. It is difficult to quantify the types and locations of transit, as they are not well documented. Based on available information, Nome, Manley Hot Springs, and Noatak appear to be the only communities in the planning area that offer public transit service. Table 2 shows the operating characteristics of each system.

Table 2. Transit Characteristics, 2017

Transit Agency	Type of service	Ridership	Vehicles in Service	Annual Vehicle Revenue Miles	Annual Vehicle Revenue Hours
Native Village of Noatak	Demand Response	180	1	2,100	1,260
Manley Village Council	Bus	28	1	1,935	64
Nome Eskimo Council	Bus	5,944	1	7,713	1,007

Source: Federal Transit Administration Transit Agency Profiles

Human service agencies in other communities appear to offer transit service such as elder transportation on an as-needed basis. For example, Manilaq Association in Kotzebue offers elder transportation on weekdays using a small community bus. Based on Alaska Department of Education grants, several communities in the planning area appear to offer student transportation.<sup>2</sup>

The Federal Transit Administration provides funds to federally recognized Indian tribes to provide transportation services in and around tribal land in rural area. The funds are allocated by statutory formula and through a competitive discretionary program. In Fiscal Year 2014-2015 (FTA 2016), the following competitive projects were awarded in the planning area:

- Native Village of Point Hope (NVPH) Council funding to purchase Americans with Disabilities Act-compliant buses for transit services to jobs and to place NVPH logos on those buses
- Native Village of Point Hope Council start-up transportation services for residents and visitors in the Point Hope area

In State Fiscal Year 2019, DOT&PF did not award any public transit grants to communities in the region.

Stakeholders indicated that additional transit service is needed, especially for seniors and school-age children because of safety concerns. During bad weather and in darkness it is difficult to see wildlife, oncoming vehicles, and other potential hazards. Transit service would also make it easier for seniors to complete routine activities such as shopping or visiting the medical clinic. One of the biggest obstacles to providing transit service in the region is a lack of funding to purchase vehicles and the ability to fund

**Commented [CL1]:** We get conflicting information about Utqiagvik and we are trying to get confirmation if they have sidewalks on some roads or not.

<sup>&</sup>lt;sup>2</sup> Alaska Department of Education grants are listed by school district, not by individual schools.

operations such as a driver, fuel, and maintenance costs. Other potential obstacles include the lack of a vehicle storage building and a lack of qualified drivers.

## 2 Road Transportation Trends and Issues

### 2.1 Population

Population projections developed for this project by Northern Economics, Inc. (NEI), based on data from the Alaska Department of Labor and Work Force Development (DOLWD), indicate that population in the planning area is not expected to have significant growth over the next 30 years (see Figure 9). The Nome Census Area, the North Slope Borough, and the Northwest Arctic Boroughs are all expected to have a slight (less than 1 percent) increase annually over the next 30 years, while the Koyukuk-Middle Yukon Census Sub-Area is expected to have a slight population decrease each year over the same time frame. Changes in traffic volumes are largely tied to changes in population. As a result, substantial changes in traffic volumes on existing roads are not anticipated as a result of population changes.

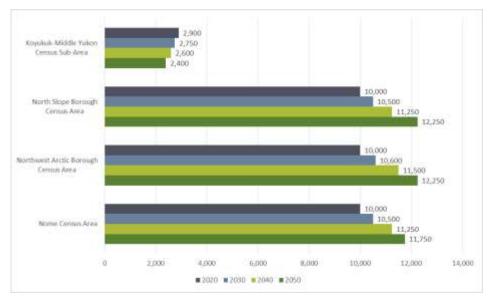


Figure 9. Northwest Alaska Population Projection

### 2.1.1 Average Annual Daily Traffic

AADT is the average traffic volume in both directions on a section of road and is adjusted for seasonal variation. In 2017, recorded AADT in the region ranged from 11 to 3,773. Only five road segments exceeded 3,000 AADT. In general, the AADT does not exceed the capacity of the roadway, indicating that congestion problems are unlikely.

## The AADT for three locations on the Dalton Highway is shown in Figure 10.



Figure 10. AADT on the Dalton Highway, 2012–2017

Nome

The 2017 AADT for Nome is shown on Figure 11.

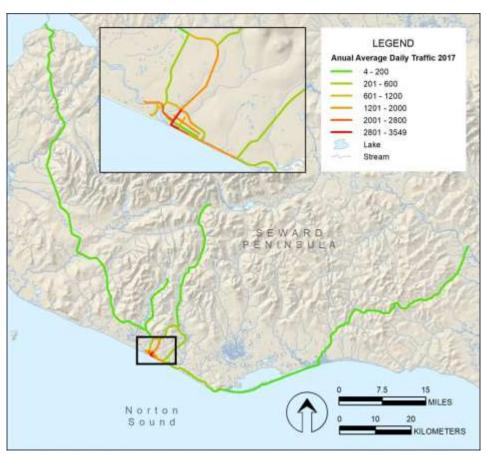


Figure 11. 2017 Average Annual Daily Traffic for Nome

Source: DOT&PF

Figure 12 compares the population of Nome to the AADT of selected roads between 2012 and 2017.

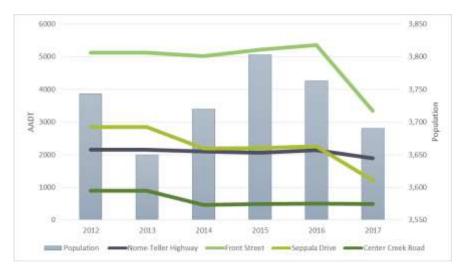


Figure 12. Nome Population vs AADT, 2012–2017

Source: DOLWD 2019, DOT&PF 2018

## Kotzebue

The 2017 AADT for Kotzebue is shown on Figure 13.

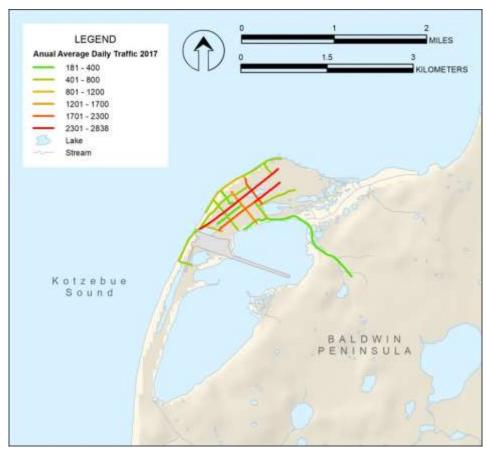


Figure 13. 2017 Average Annual Daily Traffic for Kotzebue

Source: DOT&PF

Figure 14 compares the population of Kotzebue to the AADT of selected roads between 2012 and 2017.

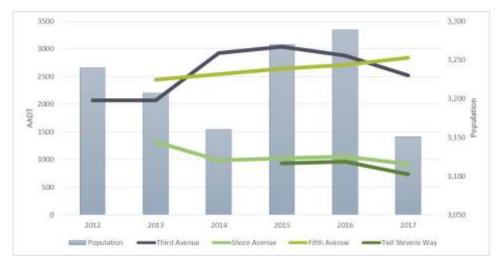


Figure 14. Kotzebue Population vs AADT, 2012–2017

Source: DOLWD 2019, DOT&PF 2018

Utqiaġvik (formerly Barrow)

The 2017 AADT for Utqiagvik is shown on Figure 15.

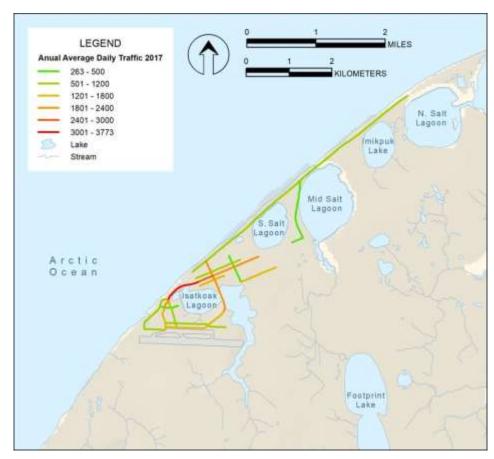


Figure 15. 2017 Average Annual Daily Traffic for Utqiagʻvik

Source: DOT&PF

Figure 16 compares the population of Utqiagʻvik to the AADT of selected roads between 2012 and 2017.

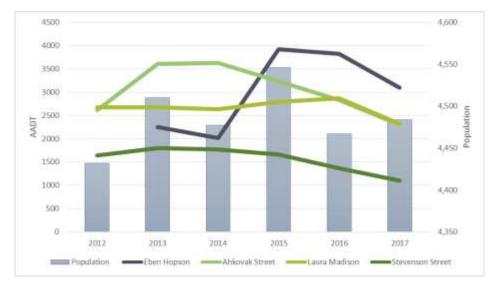


Figure 16. Utqiagvik Population vs AADT, 2012–2017

Source: DOLWD 2019; DOT&PF 2018

#### 2.2 Registered Vehicles

The Alaska Department of Motor Vehicles (DMV) tracks vehicle registrations for selected communities in the region (DMV 2017; also see Figure 17). The data indicate that Kotzebue had a noticeable increase in vehicle registrations in 2011 and 2012. This is largely due to Kotzebue losing its exemption from vehicle registration and insurance requirements in 2012.<sup>3</sup> Since 2012, registrations have remained around 1,500. In Nome, vehicle registrations have remained relatively constant (between 2,734 and 3,060) during the same 9-year timeframe. The North Slope Borough also experienced an increase in vehicle registrations during 2010–2018. Peaking in 2015 at 4,242, vehicle registrations have declined since then. The lack of substantial, sustained increases in the number of vehicle registrations, combined with the fact that population levels are expected to remain constant, indicates that traffic volumes are likely to remain similar to existing levels.

According to DOLWD population estimates (DOLWD 2019), the population of Utqiagʻvik, Kotzebue, and Nome decreased by approximately 1.2 percent between 2012 and 2018. Vehicle registrations declined by 5.5 percent in the same time frame. This suggests that vehicle usage in the area has not changed substantially.

<sup>&</sup>lt;sup>3</sup> Not all communities in Alaska require residents to register their vehicles. In general, if a community averages a traffic volume of less than 499 vehicles per day, the community qualifies for an exemption from the registration and insurance requirement. A complete list of communities exempt for registration of the Mandatory Insurance law can be found in Alaska Statute 28.22.011(1)(A) and (B).

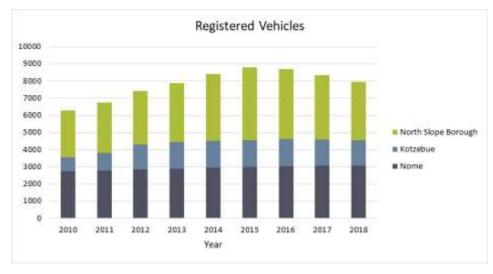


Figure 17. Registered Vehicles, 2010-2018

## 2.3 Off-Highway Drivers' Licenses

An off-highway license allows Alaskans who reside in a community<sup>4</sup> without a local DMV to drive on roads that are not connected to the SHS or to a highway or vehicular way with an AADT greater than 499. To obtain an off-highway license, the applicant must complete all the licensing requirements of a regular driver's license except for the skills (road) test. Alaska also offers an off-highway Commercial Driver's License.

 $<sup>^4</sup>$  A list of communities exempt from non-commercial road skills testing is available at http://doa.alaska.gov/dmv/akol/off\_system\_communities.htm

## 2.4 Operational Issues

#### 2.4.1 Road maintenance

Road maintenance in the region is challenging. The most prevalent reasons include:

- Thaw-unstable permafrost. Many roads are built on thaw-unstable permafrost, which freezes and thaws over time and leads to subsidence in roads. Subsidence creates rough traveling conditions and increases the risk of injury to those traveling by ATV and automobile.
- Poor drainage. Poor drainage can lead to erosion, potholes, rust, and soft spots in a road.
- Lack of equipment and storage facilities. Equipment, personnel, and resources such as gravel needed to perform maintenance are often not available locally and

Cracking pavement in Nome, AK



Source: PDC Engineers

- have to be transported to the community, which increases the cost of maintenance. The lack of equipment storage facilities needed to keep existing equipment in good repair, protected from the elements, and away from unauthorized users creates problems for many communities.
- Lack of suitable materials. Many areas lack suitable material, such as gravel, to conduct
  maintenance activities.
- Lack of funding. Public road maintenance is funded by the State, borough government, local government, or local Tribe. There is insufficient funding to address all road maintenance needs in the region.

Specific issues related to board roads have been identified based on stakeholder input and local plans:

- Board road surface is no longer level, making travel difficult.
- Board road edges are sharp and could cut people.
- Board road is too narrow to allow for passing traffic or a clinic patient on a gurney.
- There is lack of funding for boardwalk maintenance.

#### 2.4.2 Safety

Transportation safety is a priority for all agencies and communities in the planning area. According to stakeholder input and local plans, communities have pursued many efforts designed to improve transportation safety. These include::

- Educate residents about snowmachine and ATV safety;
- Improve lighting;
- Clear brush and vegetation to improve visibility at intersections and blind corners;
- Require persons 18 and under to wear helmets on snowmachines, ATVs, and similar vehicles, and to wear life jackets in boats; and
- Establish speed limits on local roads.

Enforcement of speed limits and other safety-related requirements is problematic in many communities. In many cases, violations are not reported or, if they are, only a warning is issued. Another safety issue reported by stakeholders is that communities often lack the statistics needed to prove that a safety issue exists.

Additional street lighting has been identified as a need in many local plans and by stakeholders. Street lighting can improve traffic safety by improving a driver's ability to see potential hazards. Lighting also improves pedestrian safety. Funding of the initial installation and ongoing energy and maintenance costs are significant constraints to installing street lighting. Street lighting is also vulnerable to vandalism, which adds to ongoing operating costs.

#### 2.4.3 Dust Control

One of the biggest concerns mentioned by stakeholders is dust control. Road dust is often generated by vehicles traveling too fast or by ATVs having heavy lugged tires. Dust can have serious negative impacts on:

- Health. Dust contributes to respiratory problems in children, the elderly, and people with chronic lung conditions or asthma.
- Safety. Dust obscures driver visibility.
- Quality of life. Dust contaminates subsistence resources hanging on drying racks, affects the
  growth and quality of wild berries and other edible plants, pollutes water sources, and coats
  surfaces inside homes and businesses.

Paving or hardening roads may not be the most reasonable solution to dust problems due to high capital costs and maintenance difficulty over time. Paving a road also may not be feasible if the ground contains thaw-unstable permafrost, has poor drainage or poor soil/foundation. More reasonable ways to reduce dust include reduced vehicle speed, use of smooth tires, and use of dust palliatives such as Durasoil and EK-35<sup>5</sup>.

<sup>&</sup>lt;sup>5</sup> DOT&PF uses allows use of a variety of dust palliative products to be used, provided they meet DOT&PF specifications.

#### 2.4.4 Climate

The warming Arctic is affecting the region's road system and other infrastructure. Changing climate has led to melting permafrost, ferosion, and increased storm and flood events, which have damaged transportation infrastructure. For example, the Shishmaref landfill road experienced erosion in a November 2017 storm (Leo Network 2017), and thawing permafrost has caused the sinking of Selawik's Airport Bridge (ANTHC 2012).





Warming trends have increased road maintenance needs and

influenced how roads are designed and constructed as climate-related issues are addressed. For example, a road may need to be relocated farther inland to avoid an area experiencing coastal erosion, or a road may have to be designed to reduce the effects of melting permafrost.

Collectively, addressing climate issues make roads more costly to build and maintain.

DRAFT 26

\_

<sup>&</sup>lt;sup>6</sup> Permafrost is generally considered to be soil that has been continuously frozen for 2 or more years.

Changing weather has had an additional impact on the road system. Many of Alaska's communities are located on coastlines or river banks, making them extremely vulnerable to erosion, flooding, and coastal storms. Communities are interested in relocating, which creates a need to develop a new transportation system. They are also interested in developing safe evacuation routes in case of severe storms, resulting in more communities prioritizing the need for such roads. Communities that have expressed interest in evacuation roads include Kivalina, Shishmaref, Shaktoolik, Unalakleet, Golovin, and Point Hope.

#### Kivalina Evacuation Road – A Case Story

Kivalina is located at the tip of an 8-mile barrier island off the Chukchi Sea. It has been threatened by coastal erosion and sea storms for several decades. While the community has considered relocation of the entire community, relocation efforts have faced many challenges, such as potential relocation sites being neither culturally preferable nor fiscally realistic. Kivalina is currently working with DOT&PF and others to develop an evacuation road that would provide residents with a safe and reliable route to a refuge site on Kisimigiuqtuq Hill (K-Hill) during a catastrophic storm. This road would also provide access to a new school being developed by the Northwest Arctic Borough School District. When constructed, the school could also serve as an emergency shelter.

Building the road in a timely manner is important because climate data show that protective sea ice is forming later in the season, while fall and winter storm intensity is increasing. The risk to Kivalina residents will only increase over time.

DOT&PF is developing this project as a Construction Management/General Contactor (CMGC) method. CMGC is an innovative contracting process designed to reduce project delivery time. This process allows a contractor to be hired during the road's design phase so that the contactor can provide input on how to accelerate the project schedule and reduce project cost.

The evacuation road began construction in 2018/2019 and is scheduled to be completed in 2020.

### ADD ADDITIONAL DETAIL ABOUT CONSTUCTION

For additional information, please visit http://dot.alaska.gov/nreg/KivalinaEvacRd/ (DOT&PF n.d.)

### 2.4.5 Drifting Snow/Fencing

Blowing and drifting snow is a common occurrence in Northwest Alaska. Snow creates poor driving conditions and increases the need for snow plowing. Snow fences are often used as a cost-effective way to reduce the need for snow plowing; however, snow fencing can be damaged by wildlife, high winds, and vandalism.

Snow fences work by slowing down the wind as it passes through the fence. The wind then drops some of the snow it is carrying, reducing the amount of snow deposited on roads.

Although many communities are interested in additional snow fencing, better ways of anchoring fencing to preserve its functionality need to be explored.

# 3 DOT&PF Completed Projects since 2004

Since the 2004 NWATP was completed, DOT&PF and its partners have made substantial progress in improving the road system in the area. Table 3 lists many of the road projects completed by DOT&PF since the 2004 NWATP was developed.

Table 3. Road Projects Completed by DOT&PF since the 2004 NWATP

Project Name	Community
AMBLER BRIDGE #1552 REPLACEMENT (AKA GRIZZLIES BRIDGE)	Ambler
ATIGUN PASS GUARDRAIL REPLACEMENT - G.O. BOND	
BARROW ARCTIC RESEARCH CENTER ROAD AK113	Utqiaġvik
BLOWBACK CREEK BRIDGE REPLACEMENT	
BONANZA CHANNEL BRIDGE #347 REPAINTING	Nome
COLVILLE RIVER ROAD	Nuiqsut
DALTON HWY CULVERT REPAIR FY05 DEFERRED MAINTENANCE	
DALTON HWY CULVERTS Milepost (MP) 260-321 AK090	
DALTON HWY FLOODING FY2002	
DALTON HWY GUARDRAIL REPAIR FY04 DEFERRED MAINTENANCE	
DALTON HWY MARION CREEK BRIDGE #1438 DEMO ID #AK009	
DALTON HWY MP 0-53 MATERIAL SITE EVALUATION	
DALTON HWY MP 11-18 RECONSTRUCTION	
DALTON HWY MP 175-197 REHABILITATION	
DALTON HWY MP 240-247 RECONSTRUCTION	
DALTON HWY MP 246 CULVERT REPAIR	
DALTON HWY MP 254-414 DELINEATORS	
DALTON HWY MP 267 HOLDEN CREEK BRIDGE (#1520)	
DALTON HWY MP 325-334 (HAPPY VALLEY) IMPROVEMENTS - GO	
BOND	
DALTON HWY MP 414 EROSION CONTROL	
DALTON HWY SURFACE REPAIRS	
DALTON HWY SURFACE REPAIRS - G.O. BOND	
DALTON HWY SURFACE REPAIRS FY11	
DALTON HWY SURFACE REPAIRS FY13	
DALTON HWY SURFACING UPGRADES	
ELLIOTT HWY LIVENGOOD CREEK BRIDGE (#0229) AK090	Livengood
ELLIOTT HWY WASHINGTON CREEK BRIDGE #0838	
EUREKA TO RAMPART ROAD - PHASE I	
GALENA LOUDEN LOOP ROAD REPAIR - WFL FUND ER30	Galena
GALENA LOUDEN LOOP ROAD REPAIR - WFL FUND TR60	Galena
GALENA ROAD RESURFACING AK060	Galena
GAMBELL EVACUATION ROAD	Gambell
GAMBELL EVACUATION ROAD	Gambell
HUGHES LANDFILL ROAD	Hughes

Project Name	Community
HUSLIA LANDFILL ROAD	Huslia
JACK CREEK BRIDGE PREVENTIVE MAINTENANCE	
JIM RIVER RESTORATION PROJECT 2015	
KOTZEBUE ROAD IMPROVEMENTS AK064	Kotzebue
KOTZEBUE SHORE AVENUE ENHANCEMENTS	Kotzebue
KOTZEBUE SLOUGH BRIDGE #1690 PIER REPAIRS 2015	Kotzebue
KOUGAROK ROAD REPAIRS	Nome
NOME AREA DUST CONTROL DEFERRED MAINTENANCE FY07	Nome
NOME AREA VEGETATION MANAGEMENT DEFERRED MAINT FY2010	Nome
NOME BY PASS REPAIRS	Nome
NOME BYPASS ROAD AK033	Nome
NOME BYPASS ROAD AK074	Nome
NOME BYPASS ROAD AK142	Nome
NOME CITY STREETS REHABILITATION (GO BOND)	Nome
NOME COUNCIL ROAD SAFETY SOUND BRIDGE CATHODIC	Nome
PROTECTION	
NOME FLOODING ER TEMPORARY REPAIRS	Nome
NOME FRONT STREET SAFETY & ENHANCEMENTS	Nome
NOME FRONT STREET STORM DRAIN IMPROVEMENTS - FEMA	Nome
MITIGATION	
NOME HIGHWAY BRIDGE IMPROVEMENTS	Nome
NOME ROADS AK066	Nome
NOME ROADS DUST CONTROL FY09 DEFERRED MAINTENANCE	Nome
NOME SEA STORM (9/05) PERMANENT REPAIRS-NOME-TELLER	Nome
HIGHWAY	
NOME SEA STORM (9/05) PERMANENT RPRS - UNALAKLEET BEACH	Nome
ROAD	
NOME SEA STORM (9/05) TEMPORARY REPAIRS	Nome
NOME SNAKE RIVER BRIDGE - STAGE II (GO BOND)	Nome
NOME SNAKE RIVER BRIDGE - STAGE II (GO BOND)	Nome
NOME SNOW FENCING FY06 DEFERRED MAINTENANCE	Nome
NOME STORM ER PERMANENT REPAIRS - 2004/2005 STAGE I	Nome
NOME STORM ER PERMANENT REPAIRS - SAFETY SOUND	Nome
NOME STORM ER TEMPORARY REPAIRS - 2004	Nome
NOME-COUNCIL HWY FLOOD PERMANENT REPAIRS (ER)	Nome
NOME-TAYLOR HWY FLOOD PERMANENT REPAIRS (ER)	Nome
NOME-TELLER HWY RESURFACE FY08 DEFERRED MAINTENANCE	Nome
NOR REG ER: DALTON HWY EMERGENCY MATERIAL SITE	
DEVELOPMENT	
NOR REG ER: NOME SEA STORM PERMANENT REPAIRS NOV 2011	Nome
AK12-1	
NOR REG ER: NOME STORM PERM REPAIRS-2004/2005 STAGE II	Nome
NOR REG ER: SHISHMAREF SANITATION ROAD EMERGENCY REPAIRS	Shishmaref
NOR REG FFY02 M&O CTP PREV MAINT: MANLEY HOT SPRINGS	Manley Hot Springs

Project Name	Community	
NOR REG FFY02 M&O CTP PREV MAINT: WESTERN SURFACE		
TREATMENT		
NORTHWEST ARCTIC BOROUGH ICE ROAD	Kotzebue, Noorvik, Kiana	
NORTHWEST ARCTIC BOROUGH ICE ROAD	Kotzebue, Noorvik, Kiana	
RUBY POORMAN ROAD SURFACE REPAIRS	Ruby	
SELAWIK BOARDWALK & LANDFILL ROAD	Selawik	
SELAWIK LANDFILL ROAD AK090	Selawik	
SELAWIK UTILITY CROSSING REPAIR	Selawik	
TANANA DUST CONTROL AK157	Tanana	
TELLER AIRPORT ROAD DUST CONTROL	Teller	
TOFTY ROAD SURFACE REPAIRS	Manley Hot Springs	
YUKON RIVER BRIDGE RE-DECKING AND BRIDGE RAIL #0271 AK090		
YUKON RIVER BRIDGE REHABILITATION #AK009 (SEISMIC RETROFIT)		

## 4 Major Road Projects Under Development or Study

There are several new inter-community and industrial roads currently being studied or awaiting funding within the study area. These roads are summarized below.

#### 4.1 Ambler Road

The Ambler Mining District has extensive mineral resources, including silver, gold, lead, and zinc. Development of these mineral resources has been limited due to the lack of transportation infrastructure.

There has been considerable interest over the years to improve access to the Ambler Mining District to support mineral development activity. Work has been underway since 2009 to identify and develop surface transportation access to the area. AIDEA initiated an Environmental Impact Statement in March 2019, and the National Park Service (NPS) is developing an Environmental and Economic Analysis for the road section across NPS lands. Both reports are scheduled for completion in December 2019.

The project is being developed as an approximately 200-mile, two-lane, gravel industrial access road extending from the Dalton Highway to the Ambler Mining District (see Figure 18). The proposed alignment begins at the Dalton Highway (MP 161) and extends westward along the south side of the Brooks Range to the south bank of the Ambler River. At full build-out, the proposed road would be an all-season gravel road with two 12-foot-wide travel lines, but would begin as a single-lane, gravel-surfaced pioneer road (approximately 16 feet wide).

The proposed road would have controlled access, meaning that traffic on the road would primarily support mineral exploration and mining activity. Other traffic may be allowed through access permits. Communities near the road may be able to hire commercial transportation providers for freight deliveries.

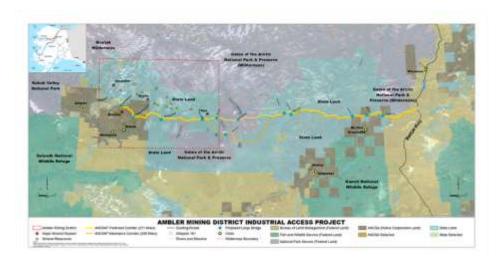


Figure 18. Proposed Ambler Mining District Industrial Access Project

Source: AIDEA (n.d.)

#### 4.2 ASTAR

The Arctic Strategic Transportation and Resource Project (ASTAR) is a planned road network extending hundreds of miles across the North Slope Borough (NSB), primarily connecting Utqiagvik to the Dalton Highway at Deadhorse/Prudhoe Bay, and connecting to other communities in the NSB (see Figure 19). The network would connect isolated communities to the larger road network and allow for exploration of oil fields in the National Petroleum Reserve-Alaska (NPR-A). The first phase would connect Utqiagvik to Nuiqsut, approximately 170 miles southeast. The main east-west routes would traverse NPR-A, making it easier for oil and gas industry partners to evaluate potential resource sites.

Phase one planning is estimated at \$10 million, with an additional \$300+ million needed for road construction and subsequent phases (Herz 2017).



Figure 19. Proposed Preliminary ASTAR Alignments

## 4.3 Yukon River Corridor

DOT&PF completed the Western Alaska Access Planning Study in 2010 which evaluated alternative corridors to connect the existing road system in the Fairbanks area to Nome and the Seward Peninsula. The study recommended the Yukon River Corridor, an approximately 548-mile route that connects the Elliott Highway from Manley Hot Springs to the Nome-Council Highway.

The estimated total project cost is \$2.3 to \$2.7 billion. Annual routine maintenance costs for the road and associated maintenance facilities are estimated at \$14.9 million per year, and the annual cost for road resurfacing and rehabilitation is estimated at \$25 million per year.

The study identified potential economic benefits to six case study communities and mines affected by the corridor, including reduced transportation cost, improved access to subsistence resources, and new employment opportunities.

In December 2011, DOT&PF completed a Corridor Staging and Alternatives Report, which refined the alignment and analyzed possible stages for the Yukon River Corridor and ways to reduce project costs (see Figure 20). This report recommended that the corridor be constructed in seven stages.

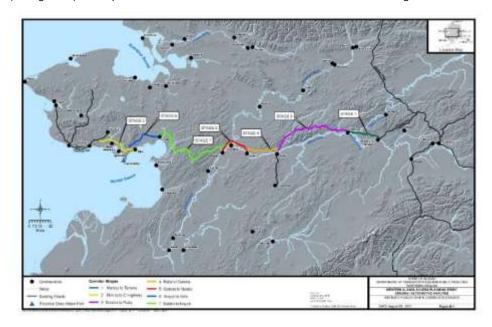


Figure 20. Refined Yukon River Corridor Stages

Source: DOT&PF 2011.

Stage 1, from Manley Hot Springs to Tanana, was officially opened in August 2016. The \$13.7 million project involved constructing 20 miles of new road and upgrading 14 miles of existing road. The road is a 15-foot-wide, single-lane pioneer road with a gravel surface. The road ends at the south bank of the Yukon River, approximately 6 miles upstream from Tanana. People must use a boat in summer, or an ice road in winter, to travel between the end of the road and Tanana.

Six more stages are yet to be engineered, funded, and constructed. :

- Nome-Council Highway to Elim (58 miles);
- Tanana to Ruby (134 miles);
- Ruby to Galena (38 miles);
- Galena to Nulato (54 miles);
- Elim to Koyuk (58 miles); and
- Koyuk to Nulato (142 miles).

No project stage will be developed without the approval of affected communities.

#### Road to Tanana – A Case Study

The road to Tanana is the first new road to connect a community to the State road system in more than 20 years. This road project, completed in 2016, is Stage 1 of the larger Yukon River Corridor Project. Stage 1 constructed 20 miles of new road and upgraded 14 miles of existing road (Tofty Road). The project cost \$13.7 million, which is substantially less than other road projects, because it was built as a pioneer road with a single 15-foot-wide lane and a gravel surface. The road ends at the south bank of the Yukon River, approximately 6 miles upstream from Tanana. People must use a boat in summer, or an ice road in winter, to travel between the end of the road and Tanana.

The road is used primarily by local residents, as the adjacent property is largely privately owned and there is no space for public parking. Parking at the Yukon River area is on Tozitna, Limited, land and is available only for Tanana residents as of March 2019.

The Economic Effects of the Proposed Road: The Manley Hot Springs to Tanana report indicates that Tanana could save approximately \$600,000 annually with the road. Other Yukon River communities have the potential to save \$2.4 million annually. Most of these cost savings would result from the changes in freight and mail movement in the area. With the Tanana road, cargo and mail can be transported by truck instead of by air. Other cost savings, such as residents being able to drive to Fairbanks rather than fly, may also occur.

The road connection has already resulted in substantial cost savings for the community. In 2016, a new triplex for teacher housing was built. The City of Tanana shipped a Conex storage container of construction materials to Fairbanks and then had it driven to the end of the road. The community then brought the Conex to Tanana via a village-built ice road. The cost of shipping the construction materials cost the City several thousand dollars, whereas shipping the container would have cost more than \$10.000 (Friedman 2017).

The road to Tanana is also expected to improve quality of life for local residents. The road makes i easier for people able to travel to Fairbanks and other communities. This connection will improve social interactions with people in other communities and make it easier to get to routine medical appointments and other services available in Fairbanks.

### 4.4 Cape Blossom Road

DOT&PF has proposed an 11-mile, all-season road from Kotzebue to Cape Blossom (see Figure 21). The road would improve access and enhance safety between Kotzebue and a possible deep water port site at Cape Blossom. The proposed road includes upgrades to the existing Air Force Road south of the Hillside Road intersection all the way to the Kotzebue Electric Association Wind Farm, and construction of a new two-lane gravel road from the wind farm south to a beach access ramp at Cape Blossom.

In addition to providing future barge access, the road would improve access to Native allotments and subsistence resources along the coastline. It would also provide additional opportunities to develop the area to meet community needs.

DOT&PF has completed an Environmental Assessment and obtained a Finding of No Significant Impact for the project. DOT&PF also completed a re-evaluation in 2017 to cover several minor design revisions. Next steps include preparing a U.S. Army Corps of Engineers Section 404 Permit application for wetland impacts, obtaining the necessary right-of-way, and completing the project's final design and construction specifications.



Figure 21. Proposed Route for the Cape Blossom Road

Source: DOT&PF (n.d.(b))

### 4.5 Red Dog Mine/ Delong Mountain Transportation System Expansion

Teck Resources, Limited, operator of the Red Dog Mine, is proposing to expand into two adjacent prospects called Aktigiruq and Anarraaq. This expansion would include the construction of 13 miles of connecting roads (Rosen 2018). Construction of the first phase, an approximately 10-mile primary access road, is expected to begin in early 2019. Work on that road, and secondary roads, would continue through 2020.

#### 4.6 Totchaket Road

The Totchaket Road has been proposed to access the Nenana-Totchaket Resource Area. The resource area contains approximately 900,000 acres of agricultural land, timber harvesting, oil and gas deposits, and potential mineral development. Historical access to this area has been via river barge or ice road from Nenana, which has limited its development. The City of Nenana and others have been pursuing a year-round, all-weather road and bridge to this area for many years (Wood 2018).

The proposed road would be approximately 28 miles long and would be built in an existing 500-foot-wide right-of-way held by the City of Nenana (see Figure 22). Approximately 11 miles of road and three smaller bridges have already been competed (Alaska Legislature 2017). To complete the project, a bridge over the Nenana River is needed. The City of Nenana has the U.S. Coast Guard permit it needs to complete the bridge, and the bridge has been partially constructed. However, as of April 2019, the City does not have sufficient funds to complete the bridge construction.

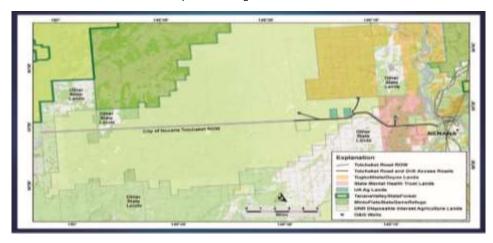


Figure 22. Totchaket Road Right-of-Way

Source: Alaska Legislature

#### 4.7 Dalton Highway Projects

According to the 2018-2021 State Transportation Improvement Program (STIP), DOT&PF is planning several reconstruction projects on the Dalton Highway. These improvements are summarized in Table 4.

Table 4. Planned Dalton Highway Improvements

### Name

Dalton Highway Mile Point 17-38 (MP 18-37) Reconstruction (Hess Creek Area)

Dalton Hwy Mile Point 109-145 (MP 109-144) Reconstruction (Old Man Camp to Jim River Bridge#3)

Dalton Highway Mile Point 0-10 (MP 0-9) Reconstruction (Livengood to 9 Mile Hill)

Dalton Highway Mile Point 306-337 (MP 305-335) Reconstruction (Sag Camp to Happy Valley)

Dalton Highway Mile Point 210-238 (MP 209-235) Reconstruction (Dietrich to Chandalar Shelf)

Name
Dalton Highway Mile Point 290-307 (MP 289-305) Rehabilitation (Kuparuk to Sag Camp)
Dalton Highway Mile Point 363-417 (MP 362-414) Reconstruction (Pump 2 to Deadhorse)
Dalton Highway Mile Point 120-136 (MP 120-135) Reconstruction (Pung Creek to Prospect Creek)
Dalton Highway Mile Point 109-121 (MP 109-120) Reconstruction
Dalton Highway Mile Point 210-224 (MP 209-222) Reconstruction (Owen Creek to Chandalar Shelf)
Dalton Highway Mile Point 306-317 (MP 305-314) Reconstruction
Dalton Highway Mile Point 315-329 (MP 314-327) Reconstruction
Dalton Highway Mile Point 18-26 (MP 18-25) Reconstruction and Bridge Replacement
Dalton Highway Mile Point 223-238 (MP 222-235) Reconstruction and Bridge Replacement
Source: DOT&PF 2019

## 4.8 Other DOT&PF Planned Projects

Other active road DOT&PF projects are listed in Table 5.

Table 5. STIP Projects in Region

Project Name	Status
BARROW AHKOVAK STREET UPGRADE	DESIGN
CENTER CREEK ROAD REHABILITATION	DESIGN
DALTON HWY CORRIDOR SURFACE REPAIRS	CONSTRUCTION
DALTON HWY CORRIDOR SURFACE REPAIRS FY2015	CONSTRUCTION
DALTON HWY MP 0-9 RECONSTRUCTION	DESIGN
DALTON HWY MP 109-144 RECONSTRUCTION	DESIGN
DALTON HWY MP 18-37 RECONSTRUCTION	DESIGN
DALTON HWY MP 209-235 RECONSTRUCTION	DESIGN
DALTON HWY MP 222-235 RECONSTRUCTION	DESIGN
DALTON HWY MP 289-305 REHABILITATION	DESIGN
DALTON HWY MP 305-335 RECONSTRUCTION	DESIGN
DALTON HWY MP 362-379 RECONSTRUCTION	CONSTRUCTION
DALTON HWY MP 362-414 RECONSTRUCTION (CONST PAVE MP 362-414)	DESIGN
DALTON HWY WETLANDS MITIGATION	DESIGN
ELLIOTT HWY MP 107.7-120.5 RECONSTRUCTION	CONSTRUCTION
GALENA CAMPION ROAD BEAVER CREEK CULVERT REPLMNT MAY13 ER	CONSTRUCTION
GALENA CAMPION ROAD EROSION PROTECTION	CONSTRUCTION
KIVALINA EVAC & SCHL SITE ACCESS RD- KIVALINA LAGN TO K HILL	CONSTRUCTION
KIVALINA EVACUATION AND ACCESS ROAD	DESIGN
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD	DESIGN
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD - STAGE I	CONSTRUCTION
KOTZEBUE THIRD AVENUE SIDEWALK (TAP)	DESIGN
KOTZEBUE TO CAPE BLOSSOM ROAD	DESIGN
KOTZEBUE TO CAPE BLOSSOM ROAD - STAGE I	DESIGN

Northwest Alaska Transportation Plan Roads: Conditions, Issues, and Trends

Project Name	Status
NOATAK PLANNING AND ENVIRONMENTAL LINKAGE STUDY	PLANNING
NOME BERING STREET - NOME JOINT UTILITY SYSTEM	DESIGN
NOME BERING STREET REHABILITATION	DESIGN
NOME PORT ROAD RECONSTRUCTION	DESIGN
NOME SNAKE RIVER BRIDGE REPLACEMENT (GO BOND)	UTILITY
NORTHWEST ALASKA TRANSPORTATION PLAN UPDATE	PLANNING
NULATO AIRPORT ACCESS ROAD IMPROVEMENTS	DESIGN
ROAD TO TANANA - STAGE II	DESIGN
SELAWIK BARGE LANDING ACCESS RD & BOARDWALK IMPROVEMENTS	DESIGN
SELAWIK FOOTBRIDGE REHABILITATION	CONSTRUCTION
SEPPALA DRIVE UPGRADE	DESIGN
SHISHMAREF RELOCATION ROAD PLANNING & ENV LINKAGE STUDY	DESIGN
SHISHMAREF SANITATION ROAD EMERGENCY REPAIRS	DESIGN
YUKON RIVER BRIDGE SLIDE INVESTIGATION	DESIGN
YUKON RIVER RECONNAISSANCE STUDY	DESIGN

Source: DOT&PF 2019

### 5 Identified Local Roads Needs

A review of local comprehensive plans, long-range transportation plans, and other documents and reports identified a series of local road improvements in each community (see Appendix C). Appendix C focuses on capital improvements that address community transportation needs. As a result, some locally identified projects, such as dust control and routine maintenance, are not listed because they are not capital improvements.

#### 6 References

- Alaska Legislature. 2017. Nenana Tochaket Bridge to Resources. Representative Dave Talerico, March 2017. <a href="http://www.akleg.gov/basis/get\_documents.asp?session=30&docid=14135">http://www.akleg.gov/basis/get\_documents.asp?session=30&docid=14135</a>
- AIDEA (Alaska Industrial Development an Export Authority). 2018. Delong Mountain Transportation System: Project Fact Sheet. <a href="http://www.aidea.org/Portals/0/PDF%20Files/PFS\_DMTS.pdf">http://www.aidea.org/Portals/0/PDF%20Files/PFS\_DMTS.pdf</a>
- AIDEA. No date. Ambler Access: Ambler Mining District. http://www.ambleraccess.com/
- ANTHC (Alaska Native Tribal Health Consortium). 2012. Climate Change in Selawik, Alaska: Strategies for Community Health. ANTHC Center for Climate and Health. <a href="https://anthc.org/wp-content/uploads/2016/01/CCH">https://anthc.org/wp-content/uploads/2016/01/CCH</a> AR 052012 Climate-Change-in-Selawik.pdf
- DMV (Alaska Department of Administration, Division of Motor Vehicles). 2017. Communities Exempt from Registration. <a href="http://doa.alaska.gov/dmv/reg/exempt.htm">http://doa.alaska.gov/dmv/reg/exempt.htm</a>
- DOLWD (Alaska Department of Labor and Workforce Development). 2019. Alaska Population Estimates by Borough, Census Area, City, and Census Designated Place (CDP), 2010 to 2018. http://live.laborstats.alaska.gov/pop/estimates/data/TotalPopulationPlace.xls
- DOT&PF (Alaska Department of Transportation and Public Facilities). 2004. Northwest Alaska Transportation Plan: Community Transportation Analysis. An Element of the Alaska Statewide Transportation Plan.
  - http://www.dot.state.ak.us/stwdplng/areaplans/area\_regional/assets/nw/nw\_cta\_final.pdf
- DOT&PF. 2011. Western Alaska Access Planning Study: Corridor Staging and Alternatives Report.

  Prepared by DOWL HKM. DOT&PF Project No. 60800.

  <a href="http://dot.alaska.gov/nreg/westernaccess/documents/corridor\_staging\_alternatives\_report.pdf">http://dot.alaska.gov/nreg/westernaccess/documents/corridor\_staging\_alternatives\_report.pdf</a>
- DOT&PF. 2018. 2017 Average Annual Daily Traffic Counts.

  <a href="http://akdot.maps.arcgis.com/home/webmap/viewer.html?webmap=7c1e1029fdb64d7a86449">http://akdot.maps.arcgis.com/home/webmap/viewer.html?webmap=7c1e1029fdb64d7a86449</a>
  <a href="https://documents.org/doi:10.1016/j.com/home/webmap/viewer.html?webmap=7c1e1029fdb64d7a86449">https://documents.org/doi:10.1016/j.com/home/webmap/viewer.html?webmap=7c1e1029fdb64d7a86449</a>
  <a href="https://documents.org/doi:10.1016/j.com/home/webmap-7c1e1029fdb64d7a86449">https://documents.org/documen
- DOT&PF. 2019. 2018-2021 Statewide Transportation Improvement Program (STIP), Amendment 2. http://dot.alaska.gov/stwdplng/cip/stip/assets/STIP.pdf
- DOT&PF. No date-a. Functional Classification. http://dot.alaska.gov/stwdplng/fclass/
- DOT&PF. No date-b. Kivalina Evaluation and School Site Access Road Project No: 0002384/NFHWY00162. http://dot.alaska.gov/nreg/KivalinaEvacRd
- FTA (Federal Transit Administration). 2016. Fiscal Year 2014-15 Tribal Transit Competitive Projects.

  <a href="https://www.transit.dot.gov/funding/grants/fiscal-year-2014-15-tribal-transit-competitive-projects">https://www.transit.dot.gov/funding/grants/fiscal-year-2014-15-tribal-transit-competitive-projects</a>

- Heimbuch, Hannah. 2011. "Kotzebue faces new vehicle regulations in 2012." Anchorage Daily News Online (updated September 27, 2016). <a href="https://www.adn.com/rural-alaska/article/kotzebue-faces-new-vehicle-regulations-2012/2011/11/14/">https://www.adn.com/rural-alaska/article/kotzebue-faces-new-vehicle-regulations-2012/2011/11/14/</a> Accessed April 28, 2019.
- Herz, N. 2017. Alaska's Initial Priority Infrastructure Projects: Detailed Project Summaries. *In* "Here's the infrastructure wish list that Gov. Walker sent to President Trump," Anchorage Daily News (online version), Nathaniel Herz, June 4, 2017.

  <a href="https://www.adn.com/politics/2017/06/04/heres-the-infrastructure-wish-list-that-alaska-gov-walker-sent-to-donald-trump/">https://www.adn.com/politics/2017/06/04/heres-the-infrastructure-wish-list-that-alaska-gov-walker-sent-to-donald-trump/</a> (document on file).
- Leo Network. 2017. Storm Watch 2017 Event 01: Northwest Alaska.

  <a href="https://www.leonetwork.org/en/posts/show/5C948AC7-9AD9-4037-BC60-0E543F73A40E#lat=66.49029362405625&Ing=-163.19945970581054&zoom=5">https://www.leonetwork.org/en/posts/show/5C948AC7-9AD9-4037-BC60-0E543F73A40E#lat=66.49029362405625&Ing=-163.19945970581054&zoom=5</a> Accessed April 24, 2019.
- Rosen, Y. 2018. "Alaska's Red Dog Mine plans expansion in to new territory." ArcticToday, October 10, 2018. <a href="https://www.arctictoday.com/alaskas-red-dog-mine-plans-expansion-new-territory/">https://www.arctictoday.com/alaskas-red-dog-mine-plans-expansion-new-territory/</a>
- Wood, Robin. 2018. "Nenana's bridge to somewhere going nowhere." Fairbanks Daily News-Miner Online, December 2, 2018. <a href="http://www.newsminer.com/news/alaska\_news/nenana-s-bridge-to-somewhere-going-nowhere/article\_dd6e8590-f608-11e8-9a0c-0391ad187e4b.html">http://www.newsminer.com/news/alaska\_news/nenana-s-bridge-to-somewhere-going-nowhere/article\_dd6e8590-f608-11e8-9a0c-0391ad187e4b.html</a>
  Accessed April 17, 2019.

# 7 Appendix A – Road by Surface by Community

Middle Yukon River Basin Subregion	565.4
Allakaket Connected Road System	2.0
Unpaved	2.0
Allakaket Incorporated City Boundary	5.0
Unpaved	5.0
Bettles Incorporated City Boundary	1.1
Unpaved	1.1
Evansville Connected Road System	2.0
Unpaved	2.0
Galena Connected Road System	2.5
Unpaved	2.5
Galena Incorporated City Boundary	23.3
Unpaved	23.3
Hughes Connected Road System	0.0
Unpaved	0.0
Hughes Incorporated City Boundary	2.3
Unpaved	2.3
Huslia Incorporated City Boundary	2.5
Unpaved	2.5
Kaltag Incorporated City Boundary	6.3
Unpaved	6.3
Koyukuk Incorporated City Boundary	3.7
Unpaved	3.7
Nenana Incorporated City Boundary	9.0
Paved	5.7
Unpaved	3.3
Nulato Incorporated City Boundary	3.3
Unpaved	3.3
Outside Specific Community	483.6
Paved	233.0
Unpaved	250.6
Rampart Connected Road System	5.3
Unpaved	5.3
Ruby Incorporated City Boundary	7.8
Unpaved	7.8
Tanana Connected Road System	0.1
Unpaved	0.1
Tanana Incorporated City Boundary	5.6
Unpaved	5.6

Middle Yukon River Basin Subregion	565.4
North Slope Borough Subregion	258.7
Anaktuvuk Pass Connected Road System	1.2
Unpaved	1.2
Anaktuvuk Pass Incorporated City Boundary	5.5
Unpaved	5.5
Atqasuk Incorporated City Boundary	5.9
Unpaved	5.9
Barrow Connected Road System	11.5
Unpaved	11.5
Kaktovik Connected Road System	4.1
Unpaved	4.1
Kaktovik Incorporated City Boundary	1.4
Unpaved	1.4
Nuiqsut Incorporated City Boundary	5.9
Unpaved	5.9
Outside Specific Community	183.8
Paved	19.6
Unpaved	164.2
Point Hope Incorporated City Boundary	14.4
Paved	4.7
Unpaved	9.7
Point Lay Connected Road System	5.4
Unpaved	5.4
Utqiagvik Incorporated City Boundary	16.1
Unpaved	16.1
Wainwright Incorporated City Boundary	3.6
Unpaved	3.6
Northwest Arctic Borough Subregion	139.7
Ambler Incorporated City Boundary	3.7
Unpaved	3.7
Buckland Connected Road System	3.7
Unpaved	3.7
Buckland Incorporated City Boundary	1.8
Unpaved	1.8
Deering Connected Road System	17.2
Unpaved	17.2
Deering Incorporated City Boundary	4.8
Unpaved	4.8
Kiana Connected Road System	1.5
Unpaved	1.5

Middle Yukon River Basin Subregion	565.4
Kiana Incorporated City Boundary	1.2
Unpaved	1.2
Kivalina Connected Road System	0.1
Unpaved	0.1
Kivalina Incorporated City Boundary	1.7
Unpaved	1.7
Kobuk Connected Road System	9.5
Unpaved	9.5
Kobuk Incorporated City Boundary	6.1
Unpaved	6.1
Kotzebue Incorporated City Boundary	19.0
Paved	6.4
Unpaved	12.6
Noatak Connected Road System	2.7
Unpaved	2.7
Noorvik Connected Road System	7.9
Unpaved	7.9
Noorvik Incorporated City Boundary	1.7
Unpaved	1.7
Outside Specific Community	51.0
Unpaved	51.0
Selawik Connected Road System	0.6
Unpaved	0.6
Selawik Incorporated City Boundary	2.7
Unpaved	2.7
Shungnak Incorporated City Boundary	2.8
Unpaved	2.8
Seward Peninsula Norton Sound Subregion	369.1
Brevig Mission Connected Road System	1.7
Unpaved	1.7
Brevig Mission Incorporated City Boundary	4.1
Unpaved	4.1
Elim Connected Road System	7.9
Unpaved	7.9
Elim Incorporated City Boundary	4.4
Unpaved	4.4
Gambell Incorporated City Boundary	0.5
Unpaved	0.5
Golovin Incorporated City Boundary	3.5
Unpaved	3.5

Middle Yukon River Basin Subregion	565.4
Koyuk Incorporated City Boundary	1.9
Unpaved	1.9
Nome Incorporated City Boundary	23.1
Paved	13.2
Unpaved	9.9
Outside Specific Community	264.2
Paved	1.4
Unpaved	262.8
Saint Michael Incorporated City Boundary	9.0
Unpaved	9.0
Savoonga Incorporated City Boundary	2.8
Unpaved	2.8
Shaktoolik Connected Road System	0.0
Unpaved	0.0
Shaktoolik Incorporated City Boundary	3.8
Unpaved	3.8
Shishmaref Incorporated City Boundary	2.3
Unpaved	2.3
Stebbins Incorporated City Boundary	8.7
Unpaved	8.7
Teller Incorporated City Boundary	2.6
Unpaved	2.6
Unalakleet Connected Road System	11.9
Unpaved	11.9
Unalakleet Incorporated City Boundary	8.7
Paved	4.0
Unpaved	4.7
Wales Connected Road System	2.3
Unpaved	2.3
Wales Incorporated City Boundary	3.3
Unpaved	3.3
White Mountain Connected Road System	0.1
Unpaved	0.1
White Mountain Incorporated City Boundary	2.0
Unpaved	2.0

# 8 Appendix B – Functional Classification by Community

Middle Yukon River Basin Subregion	688.6
Allakaket Connected Road System	2.4
Local	0.4
Minor Collector	2.0
Allakaket Incorporated City Boundary	10.9
Local	6.5
Minor Collector	4.4
Bettles Incorporated City Boundary	5.8
Local	4.7
Minor Collector	1.1
Evansville Connected Road System	4.8
Local	2.9
Minor Collector	2.0
Galena Connected Road System	2.5
Minor Collector	2.5
Galena Incorporated City Boundary	26.6
Local	15.4
Minor Collector	11.2
Hughes Connected Road System	2.9
Local	2.9
Minor Collector	0.0
Hughes Incorporated City Boundary	4.2
Local	2.2
Minor Collector	2.0
Huslia Incorporated City Boundary	14.4
Local	11.9
Minor Collector	2.5
Kaltag Incorporated City Boundary	9.4
Local	7.3
Minor Collector	2.1
Koyukuk Incorporated City Boundary	5.5
Local	3.9
Minor Collector	1.6
Nenana Incorporated City Boundary	17.5
Interstate	3.6
Local	10.6
Major Collector	1.0
Minor Collector	2.3
Nulato Connected Road System	0.7

Middle Yukon River Basin Subregion	688.6
Local	0.7
Nulato Incorporated City Boundary	11.5
Local	8.9
Minor Collector	2.6
Outside Specific Community	525.9
Interstate	33.0
Local	87.3
Major Collector	87.9
Minor Collector	45.8
Principal Arterial - Other	271.8
Rampart Connected Road System	6.4
Local	5.2
Minor Collector	1.2
Ruby Incorporated City Boundary	13.3
Local	8.3
Minor Collector	5.0
Tanana Connected Road System	9.9
Local	9.8
Minor Collector	0.1
Tanana Incorporated City Boundary	14.1
Local	10.3
Minor Collector	3.7
North Slope Borough Subregion	295.0
Anaktuvuk Pass Connected Road System	1.2
Local	0.9
Minor Collector	0.3
Anaktuvuk Pass Incorporated City Boundary	5.5
Local	2.6
Minor Collector	2.9
Atqasuk Incorporated City Boundary	6.4
Local	3.1
Minor Collector	3.3
Barrow Connected Road System	12.1
Local	12.1
Kaktovik Connected Road System	5.8
Local	1.7
Minor Collector	4.1
Kaktovik Incorporated City Boundary	5.2
Local	3.9
Minor Collector	1.2

Middle Yukon River Basin Subregion	688.6
Nuiqsut Connected Road System	0.3
Local	0.3
Nuiqsut Incorporated City Boundary	9.4
Local	6.4
Minor Collector	3.1
Outside Specific Community	184.1
Local	3.4
Principal Arterial - Other	180.6
Point Hope Incorporated City Boundary	14.4
Local	11.8
Minor Collector	2.5
Point Lay Connected Road System	7.7
Local	4.9
Minor Collector	2.8
Utqiagvik Incorporated City Boundary	34.2
Local	22.9
Major Collector	4.7
Minor Arterial	2.4
Minor Collector	4.3
Wainwright Incorporated City Boundary	8.9
Local	5.7
Minor Collector	3.2
Northwest Arctic Borough Subregion	168.3
Ambler Incorporated City Boundary	6.8
Local	3.3
Minor Collector	3.5
Buckland Connected Road System	4.2
Local	4.2
Buckland Incorporated City Boundary	3.0
Local	1.5
Minor Collector	1.5
Deering Connected Road System	17.2
Minor Collector	17.2
Deering Incorporated City Boundary	4.8
Local	2.5
Minor Collector	2.3
Kiana Connected Road System	2.2
Local	0.9
Minor Collector	1.3
Kiana Incorporated City Boundary	3.4

Middle Yukon River Basin Subregion	688.6
Local	2.9
Minor Collector	0.5
Kivalina Connected Road System	0.1
Minor Collector	0.1
Kivalina Incorporated City Boundary	2.3
Local	0.7
Minor Collector	1.5
Not Functionally Classified	0.1
Kobuk Connected Road System	9.5
Local	9.5
Kobuk Incorporated City Boundary	7.0
Local	6.8
Minor Collector	0.2
Kotzebue Incorporated City Boundary	29.8
Local	23.6
Major Collector	2.8
Minor Collector	3.4
Noatak Connected Road System	4.1
Local	2.8
Minor Collector	1.3
Noorvik Connected Road System	8.2
Local	1.7
Minor Collector	6.6
Noorvik Incorporated City Boundary	4.8
Local	3.5
Minor Collector	1.3
Outside Specific Community	51.0
Local	51.0
Selawik Connected Road System	0.6
Local	0.6
Selawik Incorporated City Boundary	4.4
Local	4.0
Minor Collector	0.3
Shungnak Incorporated City Boundary	4.8
Local	2.5
Minor Collector	2.4
Seward Peninsula Norton Sound Subregion	437.8
Brevig Mission Connected Road System	2.0
Local	0.6
Minor Collector	1.4

Middle Yukon River Basin Subregion	688.6
Brevig Mission Incorporated City Boundary	5.2
Local	4.1
Minor Collector	1.2
Elim Connected Road System	8.1
Local	6.8
Minor Collector	1.3
Elim Incorporated City Boundary	4.5
Local	1.7
Minor Collector	2.8
Gambell Incorporated City Boundary	0.5
Minor Collector	0.5
Golovin Incorporated City Boundary	7.2
Local	4.7
Minor Collector	2.5
Koyuk Connected Road System	2.2
Local	2.2
Koyuk Incorporated City Boundary	6.7
Local	5.5
Minor Collector	1.3
Nome Incorporated City Boundary	44.1
Local	26.9
Major Collector	13.1
Minor Arterial	1.6
Minor Collector	2.5
Outside Specific Community	278.7
Local	43.9
Major Collector	166.6
Minor Collector	68.3
Saint Michael Incorporated City Boundary	9.1
Local	3.8
Minor Collector	5.4
Savoonga Incorporated City Boundary	6.0
Local	3.2
Minor Collector	2.8
Shaktoolik Connected Road System	0.0
Local	0.0
Shaktoolik Incorporated City Boundary	5.8
Local	3.3
Minor Collector	2.5
Shishmaref Incorporated City Boundary	3.9

Middle Yukon River Basin Subregion	688.6
Local	1.9
Minor Collector	2.1
Stebbins Incorporated City Boundary	8.8
Local	1.5
Minor Collector	7.2
Teller Incorporated City Boundary	4.9
Local	2.5
Major Collector	2.0
Minor Collector	0.4
Unalakleet Connected Road System	15.8
Local	11.0
Minor Collector	1.2
Not Functionally Classified	3.6
Unalakleet Incorporated City Boundary	12.8
Local	8.3
Minor Collector	4.3
Not Functionally Classified	0.2
Wales Connected Road System	2.3
Local	2.3
Wales Incorporated City Boundary	4.2
Local	2.4
Minor Collector	1.8
White Mountain Connected Road System	0.8
Local	0.7
Minor Collector	0.1
White Mountain Incorporated City Boundary	3.7
Local	2.2
Minor Collector	1.5

# 9 Appendix C - Identified Local Roads Needs

Project	Community	Source
	MIDDLE YUKON	
Upgrade existing roads	Alatna	Alatna 2010 LRTP
Construct Cemetery Road	Alatna	Alatna 2010 LRTP
Upgrade Old Alatna Road	Alatna	Alatna 2010 LRTP
Upgrade A Street	Allakaket	Allakaket 2007 LRTP
Upgrade New Site Road	Allakaket	Allakaket 2007 LRTP
Upgrade Airport Road	Allakaket	Allakaket 2007 LRTP
Upgrade Post Office Way	Allakaket	Allakaket 2007 LRTP
Upgrade two trails	Allakaket	Allakaket 2007 LRTP
Upgrade Front Street	Allakaket	Allakaket 2007 LRTP
Upgrade Kanuti Drive	Allakaket	Allakaket 2007 LRTP
Upgrade 2 <sup>nd</sup> Street	Allakaket	Allakaket 2007 LRTP
Upgrade 1st Street	Allakaket	Allakaket 2007 LRTP
Upgrade William's Shortcut	Allakaket	Allakaket 2007 LRTP
Upgrade Skill Road	Allakaket	Allakaket 2007 LRTP
Upgrade Angel Street	Allakaket	Allakaket 2007 LRTP
Campion Road realignment	Galena	Galena 2009 LRTP
Campion Road erosion control	Galena	Galena 2012 Comprehensive Plan
Local roads rehabilitation (address	Galena	Galena 2009 LRTP
deferred maintenance on Front Dike,		
Back Dike, and Campion Road)		
Safety improvements – Ball Field Road	Galena	Galena 2009 LRTP
Road to Galena cemetery	Galena	Galena 2012 Comprehensive Plan
New road – Sunny Lane	Hughes	Hughes LRTP
Bridge replacement – Birch Hill Road	Hughes	Hughes LRTP
Improve Birch Hill Road	Hughes	Hughes LRTP
Upgrade Hillside Road	Hughes	Hughes LRTP
New road – Boat Road	Huslia	Huslia 2011 LRTP
Local road improvements	Huslia	Huslia 2011 LRTP
Improve Lagoon Road	Huslia	Huslia 2011 LRTP
Gravel Access Road	Huslia	Huslia 2011 LRTP
Willow Lake Road	Huslia	Huslia 2011 LRTP
Shortcut Road	Huslia	Huslia 2011 LRTP
Upgrade street lighting	Huslia	Huslia 2017 Community Plan
New Road – 9 <sup>th</sup> Avenue	Kaltag	Kaltag 2016 LRTP Supplement
Addition to C Street	Kaltag	Kaltag 2016 LRTP Supplement
New road – Kaltag River Road	Kaltag	Kaltag 2016 LRTP Supplement
New road – Rodokaket (Old Village) Road	Kaltag	Kaltag 2016 LRTP Supplement
New road – Residential Subdivision	Kaltag	Kaltag 2016 LRTP Supplement
Realign A Street	Kaltag	Kaltag 2016 LRTP Supplement
New road – Reindeer Trail	Kaltag	Kaltag 2016 LRTP Supplement
Resurface Spruce Street, Vista Road, and Third Ridge Road	Koyukuk	Koyukuk 2013 LRTP

Project	Community	Source
Resurface Airport Road, Muskrat	Koyukuk	Koyukuk 2013 LRTP
Alley, and Willow Street		
Resurface Cemetery Road,	Koyukuk	Koyukuk 2013 LRTP
Veterans Road and Edwin's Alley		
Evacuation Route (K'okko Tene)	Koyukuk	Koyukuk 2013 LRTP
Third Ridge Road extension	Koyukuk	Koyukuk 2013 LRTP
Reconstruct Spring Street	Manley Hot	Manley Hot Springs 2008 LRTP
Reconstruct Cleo's Road	Springs Manley Hot	Manley Hot Springs 2008 LRTP
Reconstruct cied 3 Road	Springs	Mainey Hot Springs 2008 Liver
Reconstruct Elliott Highway	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	,, 0
Reconstruct North Slough Road	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	
New Cemetery Road	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	
Reconstruct 4 Rose's Way	Manley Hot	Manley Hot Springs 2008 LRTP
Reconstruct Council Road	Springs Manloy Hot	Manloy Hot Springs 2000 LDTD
Reconstruct Council Road	Manley Hot Springs	Manley Hot Springs 2008 LRTP
Reconstruct Old Elliott Highway	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	
Reconstruct/Realign Corporation Road	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	
Reconstruct/Realign Woods Road	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	
Reconstruct/Realign Fireline Road	Manley Hot	Manley Hot Springs 2008 LRTP
Passanchust/Basliga Ski Ladge Basel	Springs	Manloy Hot Carings 2000 LDTD
Reconstruct/Realign Ski Lodge Road	Manley Hot Springs	Manley Hot Springs 2008 LRTP
Reconstruct/Realign Bear Claw Loop	Manley Hot	Manley Hot Springs 2008 LRTP
neconstructy neurigit beat claw 200p	Springs	Manie, Hot Springs 2000 LATT
Resurface Elliott Highway with dust	Manley Hot	Manley Hot Springs 2008 LRTP
control improvements	Springs	
Resurface Tofty Road with dust control	Manley Hot	Manley Hot Springs 2008 LRTP
improvements	Springs	
Replace Bridges – Elliott Highway (3	Manley Hot	Manley Hot Springs 2008 LRTP
bridges)	Springs	Maralan Hat Carrier 2000 I DTD
Replace Bridge – Tofty Road	Manley Hot	Manley Hot Springs 2008 LRTP
Reconstruct Tofty Road	Springs Manley Hot	Manley Hot Springs 2008 LRTP
Neconstruct Forty Road	Springs	Maniey Hot Springs 2000 Livie
Reconstruct Cemetery Road	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	,,
Reconstruct Hot Springs Rec. Trail	Manley Hot	Manley Hot Springs 2008 LRTP
	Springs	

Project	Community	Source
Pavement Maintenance – Community	Minto	Minto 2014 LRTP
Streets Connector		
Bridge over Nenana River	Nenana	Nenana Community Development Plan - 2013
Realign/Resurface 9th Street	Nenana	Nenana 2007 LRTP
Realign/Resurface K Street	Nenana	Nenana 2007 LRTP
Reconstruct Indian Cemetery Road	Nenana	Nenana 2007 LRTP
Reconstruct Fish Street	Nenana	Nenana 2007 LRTP
Relocate River Trail	Nenana	Nenana 2007 LRTP
Reconstruct FAA Hill Road	Nenana	Nenana 2007 LRTP
Reconstruct Airport Road	Nenana	Nenana 2007 LRTP
Reconstruct Pioneer Cemetery Road	Nenana	Nenana 2007 LRTP
Reconstruct Front Street	Nenana	Nenana 2007 LRTP
Reconstruct Parks Highway North	Nenana	Nenana 2007 LRTP
Reconstruct Parks Highway South	Nenana	Nenana 2007 LRTP
Access to Nulato Hills (mineral and coal	Nulato	Nulato 2010 LRTP
deposits)		
Street lights	Nulato	Nulato 2010 LRTP
Repair/replace North Fork Road bridge	Nulato	Nulato 2010 LRTP
New road to improve access to Koyukuk	Nulato	Nulato 2010 LRTP
River		
New bridge to improve access to Nulato	Nulato	Nulato 2010 LRTP
River		
Road to new landfill site	Nulato	Nulato Community Plan - 2016
Reconstruct road from old town site to	Nulato	Nulato Community Plan - 2016
new town site	Danasant	Device of 2014 LDTD
Reconstruct Airport Road	Rampart	Rampart 2014 LRTP
Reconstruct Ruby Slaveh Board	Rampart	Rampart 2014 LRTP
Reconstruct Ruby Slough Road	Ruby	Ruby 2009 LRTP
Reconstruct Galena Road	Ruby	Ruby 2009 LRTP
Improve drainage and culverts	Ruby Ruby	Ruby 2015 Community Plan
Improve street signs		Ruby 2015 Community Plan
Improve street lighting Reconstruct Tanana Road	Ruby Ruby	Ruby 2015 Community Plan Ruby 2009 LRTP
Reconstruct Front Street	Tanana	Tanana 2007 LRTP
Reconstruct 2 <sup>nd</sup> Avenue	Tanana	Tanana 2007 LRTP
Reconstruct 3 <sup>rd</sup> Avenue	Tanana	Tanana 2007 LRTP
Reconstruct South Eamole Street	Tanana	Tanana 2007 LRTP
Reconstruct East Street	Tanana	Tanana 2007 LRTP
Reconstruct Garden Street	Tanana	Tanana 2007 LRTP
Reconstruct Hill Street	Tanana	Tanana 2007 LRTP
Reconstruct Hospital Street	Tanana	Tanana 2007 LRTP
Reconstruct South Koyukuk Street	Tanana	Tanana 2007 LRTP
Reconstruct Mills Street	Tanana	Tanana 2007 LRTP
Reconstruct Park Avenue	Tanana	Tanana 2007 LRTP
Reconstruct Park Avenue	Tallalla	Tanana 2007 LINTE

Project	Community	Source
Reconstruct School Street	Tanana	Tanana 2007 LRTP
Reconstruct Elder's Drive	Tanana	Tanana 2007 LRTP
Reconstruct Old Airport Road	Tanana	Tanana 2007 LRTP
Reconstruct Barge Landing Road	Tanana	Tanana 2007 LRTP
Reconstruct Baseline Drive	Tanana	Tanana 2007 LRTP
Reconstruct Biathlon Trail	Tanana	Tanana 2007 LRTP
Reconstruct Cemetery Road	Tanana	Tanana 2007 LRTP
Reconstruct Dineega Street	Tanana	Tanana 2007 LRTP
Reconstruct Dump Road	Tanana	Tanana 2007 LRTP
Reconstruct Mission Church Road	Tanana	Tanana 2007 LRTP
Reconstruct Mission Hill Road	Tanana	Tanana 2007 LRTP
Reconstruct Mission Way Trail	Tanana	Tanana 2007 LRTP
•		Tanana 2007 LRTP
Reconstruct Nuchalawoyya Road	Tanana	
Reconstruct Sunburst Court	Tanana	Tanana 2007 LRTP
Reconstruct Sunshine Circle	Tanana	Tanana 2007 LRTP
Reconstruct Two Rivers Road	Tanana	Tanana 2007 LRTP
Reconstruct White Alice Road	Tanana	Tanana 2007 LRTP
	H SLOPE BOROUGH	
Seasonal road to Anaktuvuk Pass through	Anaktuvuk Pass	Anaktuvuk Pass Comprehensive
Galbraith Lake		Plan
Additional bridge over Contact Creek	Anaktuvuk Pass	Anaktuvuk Pass Comprehensive
along Caribou Street		Plan and 2011 LRTP
New subdivision road	Anaktuvuk Pass	Anaktuvuk Pass 2011 LRTP
New subdivision roads I	Anaktuvuk Pass	Anaktuvuk Pass 2011 LRTP
Erosion control on Contact Creek	Anaktuvuk Pass	Anaktuvuk Pass 2011 LRTP
New subdivisions roads II	Anaktuvuk Pass	Anaktuvuk Pass 2011 LRTP
Reconstruct Nayukok Street	Atqasuk	Atqasuk 2008 LRTP
Reconstruct A Street	Atqasuk	Atqasuk 2008 LRTP
Want road connection to Utqiagvik	Atqasuk	Draft Atqasuk 2017
and/or Wainwright	_	Comprehensive Plan
Yugit Street Extension	Barrow	Barrow 2012 LRTP Supplement
New road - Uivaqsaagiaq Road	Barrow	Barrow 2012 LRTP Supplement
Nunavuk Road repair/upgrade	Barrow	Barrow 2012 LRTP Supplement
New Browerville Addition 5 Road	Barrow	Barrow 2012 LRTP Supplement
Replace Maloney Bridge	Barrow	Barrow 2012 LRTP Supplement
Southward extension of Pipsuk Avenue	Kaktovik	Kaktovik 2009 LRTP
Extension of Barter Avenue	Kaktovik	Kaktovik 2009 LRTP
Extension of Kaktovik Avenue	Kaktovik	Kaktovik 2009 LRTP
Extension of Fifth Avenue	Kaktovik	Kaktovik 2009 LRTP
Extension of 10 <sup>th</sup> Street	Kaktovik	Kaktovik 2009 LRTP
Extension of Eleventh Street	Kaktovik	Kaktovik 2009 LRTP
Extension of Twelth Street	Kaktovik	Kaktovik 2009 LRTP
Extension of Hula Hula Avenue	Kaktovik	Kaktovik 2009 LRTP
New road - No Name Road	Kaktovik	Kaktovik 2009 LRTP
Extension of Second Street	Kaktovik	Kaktovik 2009 LRTP

Project	Community	Source
Reconstruct eroding roadways	Kaktovik	Kaktovik 2015 Comprehensive
neconstruct crouning roddways	Ruktovik	Plan
Road to future haulout area	Kaktovik	Kaktovik 2015 Comprehensive
		Plan
Bridge to mainland	Kaktovik	Kaktovik 2015 Comprehensive
		Plan
New airport access road	Kaktovik	Kaktovik 2015 Comprehensive
		Plan
New landfill access road	Kaktovik	Kaktovik 2015 Comprehensive
		Plan
New road - Colville River Road	Nuiqsut	Nuiqsut 2005 LRTP
New subdivision roads	Nuiqsut	Nuiqsut 2005 LRTP
Upgrade cemetery trail to road	Nuiqsut	Nuiqsut 2005 LRTP
Community road upgrades	Nuiqsut	Nuiqsut 2005 LRTP
Bridge on road to water source	Nuiqsut	Nuiqsut 2005 LRTP
Bridge on road to gravel source and	Nuiqsut	Nuiqsut 2005 LRTP
former airport site		
CD-5 Access Road?	Nuiqsut	Nuiqsut Draft Comp Plan
Nuiqsut Spur Road	Nuiqsut	Nuiqsut Draft Comp Plan
Road to ??	Nuiqsut	Nuiqsut Draft Comp Plan
Upgrade existing evacuation road	Point Hope	Point Hope Comprehensive Plan
Reconstruction of Kuukpuk Road	Point Hope	Point Hope Comprehensive Plan
Extend evacuation road	Point Hope	Point Hope Comprehensive Plan
Road to new subdivision block	Point Lay	Point Lay 2005 LRTP
Reconstruct 4 cul-de-sacs	Point Lay	Point Lay 2005 LRTP
Improve landfill access road	Point Lay	Point Lay 2005 LRTP
Alternative airport access road	Point Lay	Point Lay Comprehensive Plan
Extension of Cellar Road	Wainwright	Wainwright 2011 LRTP
		Supplement
New road – Bodfish Road	Wainwright	Wainwright 2011 LRTP
		Supplement
Extension of Cemetery Road	Wainwright	Wainwright 2011 LRTP
		Supplement
Development of subdivision roads	Wainwright	Wainwright 2011 LRTP
		Supplement
New road – follow existing trail to	Wainwright	Wainwright 2011 LRTP
Dewline Site		Supplement
NORTHWEST ARCTIC BOROUGH		
Replacement boardwalks	Selawik	Selawik 2010 LRTP
Road to Spud Farm (Siilivitchaq)	Selawik	Selawik 2010 LRTP
New road – Road 1	Selawik	Selawik 2010 LRTP
Address drainage	Ambler	Ambler 2010 LRTP
Sewage lagoon access road	Ambler	Ambler 2016 Comprehensive Plan
New gravel source for erosion related	Ambler	Ambler 2016 Comprehensive Plan
repairs		

Project	Community	Source
Rehabilitate Riverside Road	Ambler	Ambler 2016 Comprehensive Plan
Reconstruct 3 roads	Buckland	Buckland 2008 LRTP
New landfill road?	Buckland	Buckland 2008 LRTP
Bridge across Buckland Rider	Buckland	Buckland 2016 Comprehensive Plan
Rehabilitate existing barge landing road	Buckland	Buckland 2016 Comprehensive Plan
Repace bridge on Deering Road	Deering	Deering 2011 LRTP
Reconstruction of Cape Deceit Road	Deering	Deering 2011 LRTP
Reconstruct Deering Road	Deering	Deering 2011 LRTP
Secondary access to airport	Deering	Deering 2011 LRTP
New Beach Road	Deering	Deering 2011 LRTP
Erosion control on Riverside Road	Kiana	Kiana 2016 Comprehensive Plan
Road to Noorvik	Kiana	Kiana 2016 Comprehensive Plan
Lighting for all boardwalks	Kiana	Kiana 2016 Comprehensive Plan
Evacuation/Relocation road	Kivalina	Kivalina 2010 LRTP
Red Dog Port Road		
Bridge for Route 1002		
Beach Road		
Results of Kobuk bridge study?	Kobuk	Kobuk 2008 LRTP
Replace Slough Creek Bridge	Kobuk	Kobuk 2008 LRTP
Rebuild Upper Dahl Creek Bridge	Kobuk	Kobuk 2008 LRTP
Replace Upper Wesley Creek Bridge	Kobuk	Kobuk 2008 LRTP
Rehabilitate existing barge landing access road	Kobuk	Kokuk 2016 Comprehensive Plan
New road – Iggy Hill Road	Kotzebue	Kotzebue 2017 LRTP
Road to Cape Blossom	Kotzebue	Kotzebue 2013 Comprehensive Plan
Road from Cape Blossom to Nimiuk Point	Kotzebue	Kotzebue 2013 Comprehensive Plan
Continuation of Shore Avenue	Kotzebue	Kotzebue 2013 Comprehensive Plan
Improvement to Ted Stevens Way	Kotzebue	Kotzebue 2013 Comprehensive Plan
Complete cemetery road	Noatak	Noatak 2016 Comprehensive Plan
Construct road to deep-water port	Noatak	Noatak 2016 Comprehensive Plan
New paved roads throughout the village	Noatak	Noatak 2016 Comprehensive Plan
River bank erosion control project	Noorvik	Noorvik 2016 Comprehensive Plan
Use ice road for freight and fuel	Noorvik	Noorvik 2016 Comprehensive Plan
Rehabilitate existing barge landing access road	Noorvik	Noorvik 2016 Comprehensive Plan
Use ice road for freight and fuel	Selawik	Selawik 2016 Comprehensive Plan
Erosion control program	Selawik	Selawik 2016 Comprehensive Plan
Selawik footbridge rehabilitation	Selawik	Selawik Footbridge PER 2014

Project	Community	Source
Complete road between barge landing	Selawik	Selawik 2013 LRTP
road and landfill access road		
Construct North Street	Selawik	Selawik 2013 LRTP
Construct Ballot Street	Selawik	Selawik 2013 LRTP
Rehabilitate Skin Street	Selawik	Selawik 2013 LRTP
Rehabilitate barge landing access road	Selawik	Selawik 2013 LRTP
Rehabilitate River Street	Selawik	Selawik 2013 LRTP
Rehabilitate Selawik Street	Selawik	Selawik 2013 LRTP
Rehabilitate Community Avenue	Selawik	Selawik 2013 LRTP
Rehabilitate barge landing access road	Selawik	Selawik 2013 LRTP
Rehabilitate Evans Avenue	Selawik	Selawik 2013 LRTP
Rehabilitate North Tundra Street	Selawik	Selawik 2013 LRTP
Extend 6 <sup>th</sup> and 7 <sup>th</sup> Avenues	Selawik	Selawik 2013 LRTP
Extend 2rd and 4 <sup>th</sup> Avenues	Selawik	Selawik 2013 LRTP
New road to Spud Farm	Selawik	Selawik 2013 LRTP
Rehabilitate existing barge landing road	Shungnak	Shungnak 2016 Comprehensive Plan
Use ice road for freight and fuel	Shungnak	Shungnak 2016 Comprehensive Plan
SEWARD PEN	IINSULA/NORTON SC	DUND
Upgrade community routes	Diomede	Diomede 2007 LRTP
Construct proposed subsistence and	Diomede	Diomede 2007 LRTP
economic routes		
Rehabilitate and construct new portions	Diomede	Diomede 2007 LRTP
onto the existing island routes of Lower		
North Route, Upper South Route, and		
Lower South Route		
Evacuation/Relocation road	Shishmaref	
Construct community streets	Elim	Elim 2011 LRTP
Upgrade community streets	Elim	Elim 2011 LRTP
Construct proposed subsistence and	Elim	Elim 2011 LRTP
economic routes	Elim	Elim 2011 LRTP
Construct road to hot springs	Elim	Elim 2011 LRTP
Construct road to hot springs Improve Firebreak Road	Elim	Elim 2011 LRTP
Rehabilitate Beach Road	Elim	Elim 2011 LRTP
Repair/replace city bridge on Beachfront	Elim	Elim 2011 LRTP
Road	LIIII	LIIIII ZOTZ LEDP
Construct minor arterial to Cape Darby	Elim	Elim 2011 LRTP
Erosion control on Moses Point Road	Elim	Elim 2011 LRTP
Erosion protection on Beachfront Road	Elim	Elim 2011 LRTP
Study bridges at Moses Point and Corral	Elim	Elim 2011 LKTP
Creek		E 2012 EED!
Construct community streets	Gambell	Gambell 2011 LRTP
Johnson det community streets	Carriben	Cambell LOTT LIVI

Project	Community	Source
Construct proposed subsistence and	Gambell	Gambell 2011 LRTP
economic routes		22
Evacuation Road	Gambell	Gambell 2012 LEDP
Construct proposed subsistence and	Koyuk	Koyuk 2007 LRTP
economic routes	,	,
Construct proposed community streets	Koyuk	Koyuk 2007 LRTP
Upgrade access streets	Koyuk	Koyuk 2007 LRTP
Improve roads and city streets	Nome	Nome 2009 LRTP
Improve highways	Nome	Nome 2009 LRTP
Small road improvements to subsistence	Nome	Nome 2009 LRTP
use areas		
Bridge improvements	Nome	Nome 2009 LRTP
Upgrade community streets	Saint Michael	Saint Michael 2007 LRTP
Construct community streets	Saint Michael	Saint Michael 2007 LRTP
Construct proposed subsistence and	Saint Michael	Saint Michael 2007 LRTP
economic routes		
Construct boardwalk from east end of	Saint Michael	Saint Michael 2007 LRTP
Standard Oil Road south to Pioneer Road		
Upgrade Saint Michael-Stebbins Highway	Saint Michael	Saint Michael 2007 LRTP
Provide boardwalk access over utilidors	Saint Michael	Saint Michael 2007 LRTP
Upgrade existing barge access road	Savoonga	Savoonga 2011 LRTP
Upgrade community streets	Shaktoolik	Shaktoolik 2007 LRTP
Construct proposed subsistence and	Shaktoolik	Shaktoolik 2007 LRTP
economic routes		
Road to the Foothills and Swallows	Shaktoolik	Shaktoolik 2007 LRTP
Construct roads in future relocated	Shaktoolik	Shaktoolik 2007 LRTP
townsite		
Rehabilitate 13 miles of Foothills Road	Shaktoolik	Shaktoolik 2007 LRTP
Emergency road	Shaktoolik	Shaktoolik 2013 LEDP
Construct community streets within	Shishmaref	Shishmaref 2007 LRTP
proposed village relocation site	Chickers	Chickers and 2007 LDTD
Construct proposed subsistence and	Shishmaref	Shishmaref 2007 LRTP
economic routes	Chalalain	Ct-bb: 2007   DTD
Upgrade community streets	Stebbins	Stebbins 2007 LRTP
Construct proposed community streets	Stebbins	Stebbins 2007 LRTP
Construct proposed subsistence and economic routes	Stebbins	Stebbins 2007 LRTP
Upgrade access road to landfill	Stebbins	Stebbins 2007 LRTP
. 3	Stebbins	Stebbins 2007 LRTP
Construct bridge over Penuq River Complete the road to Sourdough Point	Stebbins	Stebbins 2007 LRTP
Build crossing bridge near Sourdough	Stebbins	Stebbins 2007 LRTP
Point	Stephilis	STEEDUITS 2007 LIVE
Elevate first mile out of Stebbins of the	Stebbins	Stebbins 2012 Comprehensive
Stebbins-St. Michael Highway	Steading	Plan
Upgrade community streets	Teller	Teller 2007 LRTP
opprade community streets	rener	Teller 2007 LIVIT

Project	Community	Source
Construct proposed community streets	Teller	Teller 2007 LRTP
Construct proposed subsistence and	Teller	Teller 2007 LRTP
economic routes		
Upgrade Lakeside Drive, landfill road, and	Teller	Teller 2007 LRTP
bypass road		
Upgrade streets in Coyote Creek	Teller	Teller 2007 LRTP
Subdivision		
Evacuation road	Teller	Teller 2013 LEDP
Upgrade community streets	Unalakeet	Unalakleet 2007 LRTP
Elevate Beach Front Road West and	Unalakeet	Unalakleet 2007 LRTP
construct proposed community streets		
Construct proposed subsistence and	Unalakeet	Unalakleet 2007 LRTP
economic routes		
Replace North River Bridge and provide	Unalakeet	Unalakleet 2007 LRTP
erosion control on the east side		
Elevate 0.3 mile of evacuation road	Unalakeet	Unalakleet 2007 LRTP
Extend VOR Road	Unalakeet	Unalakleet 2007 LRTP
Road to Kaltag	Unalakeet	Unalakleet 2007 LRTP
Construct Harbor Access Road	Unalakeet	Unalakleet 2007 LRTP
Develop road to Bradley Slough for future	Unalakeet	Unalakleet 2007 LRTP
boat ramp		
Scenic bypasses - create vehicle pullouts	Unalakeet	Unalakleet 2007 LRTP
Road to Boat Ramp from proposed	Unalakeet	Unalakleet 2007 LRTP
subdivision site		
Bridge, road to Tolstoi Point	Unalakeet	Unalakleet 2007 LRTP
Road to Saint Michael	Unalakeet	Unalakleet 2007 LRTP
Road to Shaktoolik	Unalakeet	Unalakleet 2007 LRTP
Upgrade community streets	Wales	Wales 2007 LRTP
Construct proposed community streets	Wales	Wales 2007 LRTP
Construct proposed subsistence and	Wales	Wales 2007 LRTP
economic routes		
Upgrade and maintain road to Tin City	Wales	Wales 2007 LRTP
Repair Village Creek bridge	Wales	Wales 2007 LRTP
Erosion control along landfill road	Wales	Wales 2007 LRTP
Extend BIA road to reindeer corral	Wales	Wales 2007 LRTP
Upgrade community streets	White Mountain	White Mountain 2007 LRTP
Construct proposed subsistence and	White Mountain	White Mountain 2007 LRTP
economic routes		
Improve roads to Chuguk, Golovin, and	White Mountain	White Mountain 2007 LRTP
Carolyn Island		
Improve roads	Solomon	Solomon 2016 LEDP
Continue road project	King Island	King Island 2014 LEDP
Install culverts and manholes	Brevig Mission	Brevig Mission 2013 LEDP

Northwest Alaska Transportation Plan Roads: Conditions, Issues, and Trends

Project	Community	Source
Road repair where Alaska Village Electric Cooperative buried intertie cable along beach	Brevig Mission	Brevig Mission 2013 LEDP
Evacuation road	Brevig Mission	Brevig Mission 2013 LEDP
Improve community streets	Golovin	Golovin 2009 LEDP
Additional road on the north end of town to meet the expansion of community and open new lots for future development	Point Lay	Point Lay 2017 Comprehensive Plan
Alternate road to the airport due to heavy snow drifts that would be located next to the North Slope Borough Public Works Shop and run adjacent to the outfall line	Point Lay	Point Lay 2017 Comprehensive Plan

Notes: Some projects may have been completed since the publication of the source document. LRTP = Long-Range Transportation Plan; PER = Preliminary Engineering Report; LEDP = Local Economic Development Plan.