APPENDIX 1:

FEDERAL TRANSPORTATION PLANNING GUIDANCE

Federal Planning Factors

Agencies involved in transportation planning are required to adhere to ten key transportation planning factors as defined in 23 CFR 450, which dictates that each State shall carry out a continuing, cooperative, and comprehensive statewide transportation planning process that provides for consideration and implementation of projects, strategies, and services that will address the following factors:

1. Support the economic vitality of the United States, the State, metropolitan areas, and nonmetropolitan areas, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and nonmotorized users.
3. Increase the security of the transportation system for motorized and nonmotorized users.
4. Increase the accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system across and between modes throughout the State, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve transportation system resiliency and reliability and reduce (or mitigate) the stormwater impacts of surface transportation.
10. Enhance travel and tourism.

Federal-aid Highway Program National Goals

National Federal-aid Highway Program performance goals are established by Congress and included in 23USC §150(b). The current goals are:

1. Safety: to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. Infrastructure Condition: to maintain the highway infrastructure asset system in a state of good repair.
3. Congestion Reduction: to achieve a significant reduction in congestion on the National Highway System.
4. System Reliability: to improve the efficiency of the surface transportation system.
5. Freight Movement and Economic Vitality: to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. Environmental Sustainability: to enhance the performance of the transportation system while protecting and enhancing the natural environment.
7. Reduce Project Delivery Delays: to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Federal Transit Administration National Goals

The Federal Transit Administration's (FTA) strategic goals reflect the broad, long-term outcomes the agency pursues to advance its mission to improve America's communities through public transportation. The goals are:

Enhance Safety: While transit is already one of the safest modes of transportation, FTA is committed to improving safety even further. FTA provides safety oversight and technical assistance that strengthen our recipient's safety culture and practices. This improves safety for riders and patrons who use transit, workers who maintain and operate transit, and pedestrians and others who interact with transit.

Build Resiliency: FTA works to renew transit systems and increase the resiliency of those systems into the future. Public transportation is an essential component of American communities of all sizes, from tribal and rural communities to our largest cities. So that transit can continue to fulfil this critical role, FTA works to reduce the state of good repair backlog, increase the resiliency of infrastructure, and sustain maintenance and operations going forward.

Increase Sustainability: FTA supports transit investments and infrastructure designs that address climate change, reduce harmful environmental impacts, and make long-term positive impacts on the environment. Novel technologies are shifting the transit industry away from fossil fuels and toward low- and no-carbon emission vehicles and clean fuels. FTA works to reduce greenhouse gas emissions from environmental impacts of transit construction and operations.

Improve Equity: FTA supports transit investments that address disparities in access to opportunity and services. Every community includes persons who, due to age, income level, or disability, cannot rely on automobile travel to meet their mobility needs. All Americans deserve quality transit service that provides mobility to meet basic needs.

Connect Communities: FTA works to expand high quality transit services that connect people and build communities in both urban and rural underserved communities. When transit is fast, frequent, and reliable, people are connected with one another and with new opportunities. Together, they build thriving communities and world-class cities .

Federal Aviation Administration National Goals

The Federal Aviation Administration (FAA) manages a portfolio of goals organized under the pillars of safety, people, global leadership, and operational excellence. The portfolio is managed on an annual basis and a report produced to track progress toward meeting the goals. The 2023-2024 goals[25] are:

Safety Pillar

Oversee and operate the safest aerospace system in the world, all with a culture of continuous improvement.

- **Adopt and Implement a Target Level of Safety (TLS) for Drone Operations:** Goal under development
- **Commercial Air Carrier Fatality Rate:** Reduce the commercial air carrier fatalities per 100 million persons on board U.S. carriers by 50 percent over 18-year period of FY 2008-2025
- **Earned Media Coverage:** Provide NAS users, stakeholders and the traveling public with accurate and timely information needed to operate in the NAS safely and to obtain aviation safety related information.
- **FAA Advanced Air Mobility (AAM) Implementation Plan:** Develop a singular implementation plan that incorporates all of the agency work streams that must be completed in order to enable initial Advanced Air Mobility (AAM) services in the National Airspace System.
- **FAA Alaska Aviation Safety Initiative (FAASI):** Reduce the fatal and serious accident rate in the State of Alaska with emphasis on Part 135 air carrier crashes.
- **General Aviation Fatal Accident Rate:** Reduce the general aviation fatal accident rate to no more than 0.89 fatal accidents per 100,000 flight hours by FY 2028.
- **Dangerous Goods Air Cargo Safety Messaging:** Provide a positive aviation safety culture by educating travelers and air shippers about their responsibilities for proper identification and preparation of dangerous goods cargo. Proper identification and preparation of dangerous goods protects transportation workers across the supply chain by mitigating the severity of cargo incidents and communicating necessary information to first responders during incidents.

[24] *https://www.transit.dot.gov/about/mission-vision-values-and-goals#:~:text=FTA's%20mission%20is%20to%20improve,built%20on%20public%20transportation%20excellence. Last updated February 2, 2023.*
[25] *https://www.faa.gov/sites/faa.gov/files/FY23%20Portfolio%20of%20Goals%20July%202023.pdf*

- **Licensed and Permitted Launch and Re-entry Safety:** Maintain a public safety record during authorized launch and re-entry operations that is consistent with the FAA's regulatory safety criteria.
- **Potential/Emerging Safety Issues (AVP):** Provide a draft report that documents safety issues identified through advanced analytics by September 30, 2023.
- **Advance the Safety of Aircraft Cargo through Safety Oversight, Research, and Standardized Testing:** Establish a collaborative and repeatable approach to safety oversight, research and standardized testing that influences/ impacts air carrier cargo or safety decisions.
- **Risk Based Inspection Criteria for Space Launch Operations:** Modify risk-based inspection criteria to allow for established launch operations to be ongoing without a safety inspector for on-site operations.
- **Safely Incorporate UAS Dangerous Goods (DG) Operations into the National Airspace System (NAS):** Strengthen the Safe Integration of Dangerous Goods into UAS Operations.
- **Commercial and Non-Commercial Surface Safety:** Surface safety
- **Test and Evaluation Efforts of UAS Detection and Mitigation Technologies:** Test and evaluate UAS detection and mitigation technologies as required under Section 383 of the 2018 FAA Reauthorization to support the development of a plan for establishing standards, provided that external factors do not impact this work. This congressional requirement is scheduled to sunset on September 30, 2023.
- **ATO Top 5 Safety Risks:** The ATO Top 5 Safety Issues are a list of five high priority safety issues, driven and supported by data, in which swift, cross-organizational action is needed to address them in order to regain an acceptable safety level. It is the culmination of the Air Traffic Organization's (ATO) proactive safety management activities – valuing input from the frontline employees, deploying technology to gather data, improving analysis to identify risk and embracing correction to implement risk mitigations.

People Pillar

Strengthen our current and future aviation workforce through accountability, development, and planning.

- **Contracting with Small Disadvantaged Business (SDB):** To maximize inclusion of SDB in FAA contract opportunities.
- **DEI&A Inclusive Language Implementation:** To ensure a diverse, equitable, and inclusive environment, the agency must implement its inclusive language policy and order.
- **Agency-Wide Workforce Planning and Engagement:** Develop an FAA-wide vision and strategy to reimagine, recruit, and retain a diverse workforce and that enhances succession planning and employee engagement in support of the agency's mission and implement the DEIA plan to create a workforce built on equity and inclusion and integrate DEIA principles into the FAA decision-making process.
- **Hiring Persons with Disabilities (PWD)/Persons with Targeted Disabilities (PWTD):** The Office of Civil Rights (ACR) will lead collaboration between all lines of Business/staff offices (LOB/SO) to increase the representation of PWD/ PWTD in the Federal Aviation Administration (FAA) workforce by 1% each year for the next three years (from FY22). For FY23, the goals will be 16% for PWD and 2% for PWTD.
- **STEM AVSED Equity Accountability:** Develop methods to ensure that all students, including those in underrepresented and/or underserved populations, have access to events and learning activities aimed at introducing them to aerospace concepts and career pathways.

Global Leadership

Advance aviation safety and innovation by leading and collaborating with aviation authorities globally.

- **OneFAA Approach to International Training:** Development of an FAA International Outreach and Training Program Process for ensuring an "OneFAA" approach to international training and outreach.
- **Demonstrate Continued Global Leadership on Advanced Air Mobility (AAM) Standards and Certification Through International Cooperation, Collaboration, and Engagement:** Create a global framework to harmonize Advanced Air Mobility (AAM) certification standards with the National Aviation Authorities (NAA) Network.
- **ICAO USOAP Audit:** Conduct a FY23 self-assessment in preparation for an International Civil Aviation Organization (ICAO) Universal Safety Oversight Audit Program (USOAP) Audit of the United States anticipated in FY24.

- **Increase Engagement with Mexico to Create One-Level of Aviation Safety:** Strengthen our productive, working relationship with Mexico on areas of mutual interest to reach and maintain international safety standards.
- **Promote International Adoption of FAA Commercial Space Transportation Regulations:** Promote AST regulations and safety practices at international workshops, and international forums.
- **Technical Assistance Agreement Process Improvement:** Improve the FAA's process for developing and coordinating international technical assistance agreements.

Operational Excellence

Operate the world's most efficient aerospace system through continuous improvement and infrastructure investment.

- **Average Daily Capacity (ADC):** Maintain an Average Daily Airport capacity of at least 58,661 arrivals and departures at Core airports
- **BIL 30x30: Complete Construction on a Total of 30 Staffed Air Traffic Control Towers by 2030:** Operational Excellence/Bipartisan Infrastructure Law (BIL)
- **Aircraft Noise:** Lead efforts in collaboration with aviation stakeholders to address aircraft noise in the United States and ensure up-to-date and effective noise policies.
- **Timely Licensing Determinations for Commercial Space:** Complete thorough well-documented licensing determinations for launch and re-entry vehicle and site operations within statutory deadlines for all new authorization applications received.
- **Critical Acquisitions Milestones on Schedule:** 90% of the critical acquisition milestones (86) are achieved by their scheduled due dates.
- **Apply More Agile Structure of Services and Service Levels Across the NAS (MASS):** Apply a More Agile Structure of Services and Service Levels (MASS) to at least one real world operational example of a change in service level. This will serve to validate a criteria based framework refining what services are needed at what locations and when to meet evolving stakeholder demands.
- **Focus $19.4 Billion in BIL Funds on Airport Modernization and Safety Infrastructure Projects:** Announce the intent to award grants to terminal projects and new/rehabilitations pavement projects.
- **Global Leadership on Aviation and Climate Change:** Demonstrate continued global leadership on climate change through international engagement, action at the International Civil Aviation Organization, and execution of the U.S. Aviation Climate Action Plan.
- **Sustainability – FAA Facilities and Operations:** Identify New Buildings Entering the Design Phase in FY 2023 and ensure the guiding principles for sustainable federal buildings are included in the design for applicable facilities.
- **Increase Awareness of National Air System Initiatives:** Increase public, congressional, media, industry and pilot education and understanding of National Air System Initiatives by providing them with safety information and the opportunity to engage directly with FAA subject matter experts.
- **FAA Advanced Air Mobility (AAM) Implementation Plan:** Develop a singular implementation plan that incorporates all the agency work streams that must be completed in order to enable initial Advanced Air Mobility (AAM) services in the National Airspace System.
- **Increased Data Accessibility:** Use modern, open technologies to communicate and help the public and FAA employees operate safely and make more informed decisions.
- **Multi-Modal:** Initiate or develop at least three new terminals projects with reduced emissions and multi-modal access by 2030.
- **NAS On-Time Arrivals:** Achieve a NAS on-time arrival rate of 88% at Core airports.
- **NOTAM Modernization: Goal under development**
- **Unmodified Audit Opinion:** Obtain an unmodified audit opinion on the FAA's fiscal year (FY) 2023 financial statements. This goal requires an unmodified audit opinion identified by external independent auditors.
- **Domestic Aviation CO2 Emission Reductions:** Reduce CO2 emissions from domestic aviation, as defined in the US

aviation Climate Action Plan.

- **Runway Pavement Condition:** Maintain runway pavement in excellent, good, or fair condition for 93% of the paved runways in the National Plan of Integrated Airport Systems (NPIAS).
- **Streamline the Delivery of NAS Services Through Divestiture of NAS Assets:** Collaborate across ATO service units and across the FAA to deliver on the divestiture of National Aerospace System (NAS) assets.
- **Unmanned Aircraft System (UAS) Traffic Management (UTM) Field Test:** The Office of NextGen will execute Unmanned Aircraft System (UAS) Traffic Management (UTM) Field Test in collaboration with industry partners. UTM field test will conduct five live flight test activities to test updates to UTM technology and validate UTM data exchanges and operations based on proposed standards to support routine Beyond Visual Line of Sight (BVLOS) operations. Upon completion of the Field Test, UTM Field Test Report and Lessons Learned package will be produced. The package will include a detailed record of Field Test results including those from testing of technical functionalities, validation of proposed standards, and lessons learned from the perspective of industry partners.
- **Operational Performance Reporting:** Using WILBUR for Instrumental Flight Rules (IFR) flight counts and cancellation identification for the morning reports.

APPENDIX 2:

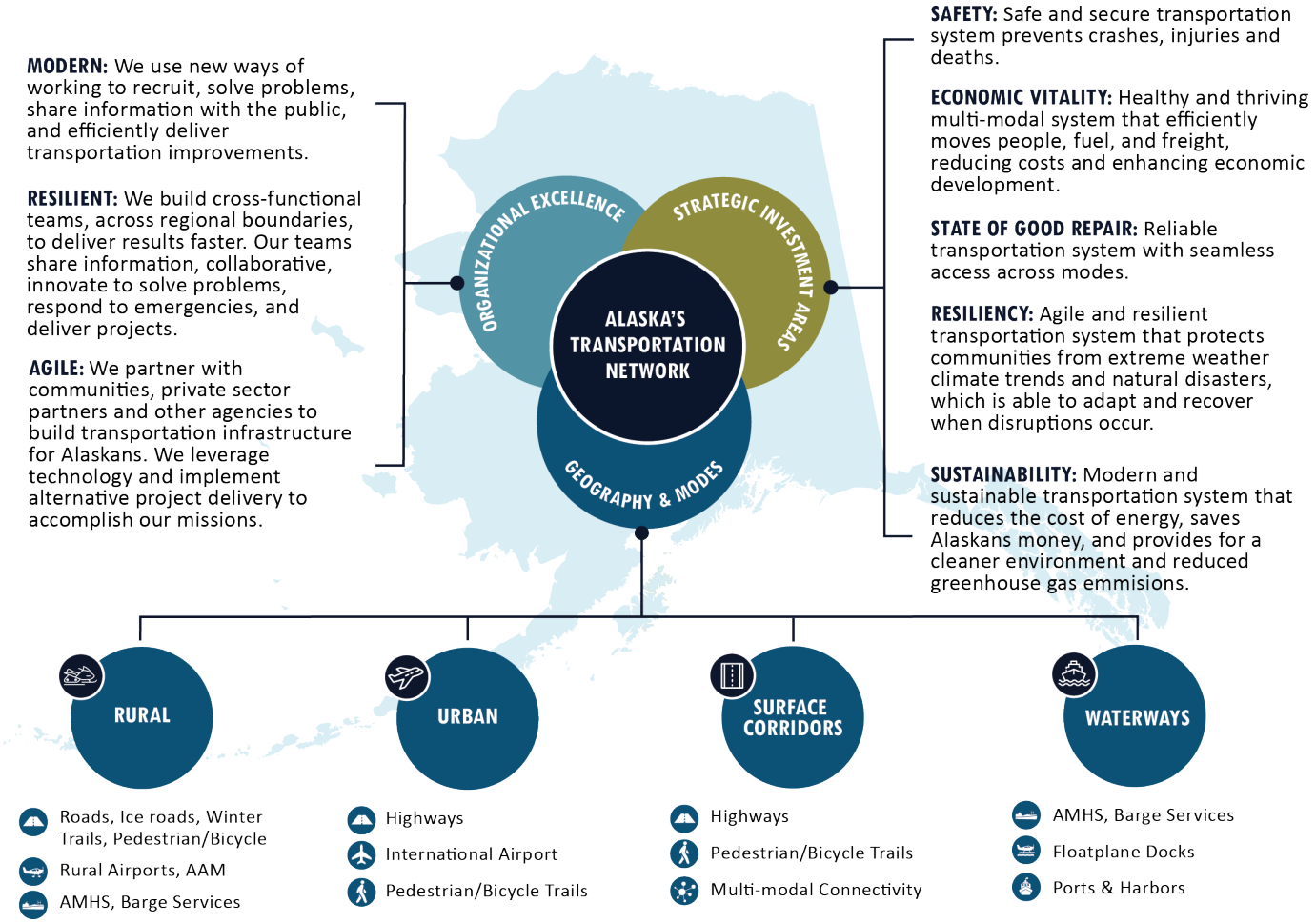
STATE OF ALASKA PLANS & STUDIES

Statewide Plans and Studies

The State of Alaska has developed a family of plans and studies that define and plan for Alaska's unique transportation system. The size of the state and the complexity of transportation within the state warrant a suite of plans that consider the many aspects that together form Alaska's transportation system.

The DOT&PF has developed an advanced vision framework for transportation in Alaska, which includes five strategic investment areas:

- **Safety:** Safe and secure transportation system prevents crashes, injuries and deaths.
- **Economic Vitality:** Healthy and thriving multimodal transportation system that efficiently moves people, fuel, and freight, reducing costs and enhancing economic development.
- **State of Good Repair:** Reliable transportation system with seamless access across modes.
- **Resiliency:** Agile and resilient transportation system that protects communities from extreme weather climate trends and natural disasters, which is able to adapt and recover when disruptions occur.
- **Sustainability:** Modern and sustainable transportation system that reduces the cost of energy, saves Alaskans money, and provides for a cleaner environment and reduced greenhouse gas emissions.



Alaska 2036 Long-Range Transportation Policy Plan Update – Let's Keep Moving 2036 (2016)

The Alaska 2036 Long-Range Transportation Policy Plan Update (LRTP) operates under federal mandate 23 CFR 450.216 and serves as a document to guide the Alaska DOT&PF through the year 2036 by establishing policies and investment priorities. The plan established a vision to provide a transportation system that enables a robust and growing economy and meets the mobility needs of all facility users in the state.

Policies, goals, and actions were determined by addressing trends for travel growth and demand, delivery and supply systems, existing public policy, public expectation, financial capacity, climate change, and extreme weather events.

Alaska Moves 2050: Draft Statewide Long-Range Transportation Plan Update (2022)

The Draft Statewide Long-Range Transportation Plan Update, Alaska Moves 2050, was released for public comment in June 2022. The plan is an update of the 2036 LRTP and is based on a performance-based planning framework to support improved decision making, higher return on investments, better accountability and transparency, and improve performance of the transportation system. The draft LRTP sets out the top three transportation priorities by region, and for the Interior these are:

- Mobility for all Alaskans
- Operation and Maintenance of the System
- Resiliency

Future transportation challenges for the Interior include:

- Serving the 50 communities within the Interior
- Providing for how people get around, including using the road/highway, rail, air, and water
- Supporting facilities for the transportation of goods, including on the road/highway, rail, air, and water
- Providing opportunities for economic prosperity, including for mining, tourism, the military, and for subsistence.

The Draft LRTP sets out a range of goals, policies, actions, and performance measures to guide future transportation investment and measure results. Once they are adopted, these will guide future programming of funds for transportation investment in Alaska.

Alaska Moves 2050: Statewide Freight Plan (2023)

The Alaska Moves 2050 Statewide Freight Plan (ASFP) focuses on moving people and goods safely and efficiently while aligning with federal, state, and local transportation priorities, using a performance-based planning approach to measure improvement effort impacts. Trends, challenges, and opportunities related to freight traffic were identified by evaluating safety, travel mode, travel pattern, climate, existing surface condition, and existing facilities data.

For the Interior Region, Alaska's goods movement takes place through trucking, rail, pipelines, waterways, and aviation. It should be noted that although this memorandum is focused on surface transportation, freight movement throughout the Interior includes all modes of transportation and is critical to the Region's economy.

Alaska's freight system goals are:

- Safety: Increase safety for all modes during the movement of freight
- Mobility and Access: Move goods safely, reliably, and cost-effectively across Alaska
- Economic Vitality: Facilitate economic growth and lower the cost of goods and services
- State of Good Repair: Keep what we have in a state of good repair
- Resiliency: Have a freight network that can recover quickly from disruptions
- Sustainability: Promote a sustainable, clean, equitable freight system
- Strategic Partners: Collaborate with other levels of government, industry partners, and the public
- Stewardship of the Transportation System: Find the best, most affordable ways to improve the freight network
- Performance-Based Management: Have stable, flexible, and long-term funding sources
- Transportation Innovation: Leverage innovations that benefit safety, efficient freight movement, and work force needs

Key trends related to freight truck traffic and the roadway system were identified as:

- Statewide lane miles increased 20 percent and total VMT increased by 18 percent, with VMT per capita increasing eight percent (2006-2019).
- Urban-area roadways carry the higher AADT and total truck volumes while rural-area roadways carry a higher percentage of truck traffic.
- DOT&PF transitioning their pavement management practices from the "worst-first" method to a life cycle planning

method.

- DOT&PF has prioritized safety with its federal funding by consistently obligating HSIP funding on the order of 90 percent or greater.
- Challenges related to freight truck traffic and the roadway system were identified as:
- Limited funding, retiring personnel, studded tire use, and climate change impacts.
- Lack of roadway network redundancy leading to system-wide safety and access vulnerability.
- Travel time reliability is impacted by external factors, such as extreme weather events, roadway maintenance and mitigation, lack of network redundancy, and roadway capacity.
- Bridge height, overhead clearance, load restrictions, and roadway seasonal weight restrictions.
- Sole reliance on HSIP funds for safety improvements without additional state or more flexible federal funding.
- DOT&PF data is inconsistent with established DOT&PF boundaries and federally reported data.

Opportunities identified to address the previously mentioned roadway system challenges include:

- Discussing the potential for jurisdictional transfer of the DOT&PF managed local or collector roads to local agencies.
- Development of Tribal Safety Plans to improve coordination and alignment between DOT&PF, rural, and tribal leaders.
- Expansion of the data-driven safety approach to emphasize treatment cost-effectiveness assessments and Highway Safety Manual screening and evaluation methods at the project level.
- Treating and rehabilitating pavements and bridges in good and fair condition before deteriorating to decrease a project's life cycle cost.
- Continuing to allocate resources for improved data collection, management, and analysis to aid in accurately prioritizing investments, management of assets, and required reporting.

Alaska Aviation System Plan

The Alaska Aviation System Plans (AASP) is responsible for the following:

- Identifying airport improvements needed
- Setting priorities for funding
- Proposing aviation policy
- Documenting the existing system with photos, maps, and data
- Continuing to support the system through special studies, updates, and reviews as the system evolves

The AASP is guided by the Federal Aviation Administration (FAA) (AC No. 150/5070-7) and is a key component of the Alaska DOT&PF Statewide Long-Range Transportation Plan.

Alaska Statewide Active Transportation Master Plan (2018)

The Alaska Statewide Active Transportation Master Plan (ASATP) aims to provide Alaskans with access to equitable, accessible, and safer walking and bicycling opportunities as an integral part of daily life. The ASATP outlines federal, state, and local policy, design, and funding guidance to aid communities in their efforts to improve active transportation facilities and mode choice options throughout Alaska.

Public engagement and analysis of data was used to identify key goal areas, their associated objectives, and performance measures to improve active transportation facilities and access over the 20-year plan period. The ASATP also identifies trends within the state and outlines how active transportation can aid in the improvement of key transportation deficiencies and impacts, with a focus on quantifying the economic benefits of increased active transportation mode choice. The ASATP acts as a supporting policy to achieve the goals and vision outlined in the Statewide Long-Range Transportation Plan, specifically related to active transportation facility best practice, design, planning, safety, and maintenance. It is best practice for the ASATP to be incorporated into other state, regional, and local plans that address active transportation.

Alaska State Rail Plan (2016)

In 2008, The United States Congress passed the Passenger Rail Investment and Improvement Act (PRIIA) which focuses on improving passenger rail service in the US. PRIIA resulted in the requirement for any state seeking federal assistance for either passenger or freight improvements to have an updated state rail plan. The development of an Alaska State Rail Plan (ASRP) was assigned to the Alaska DOT&PF under the Alaska Statute 44.42.050 which charges the Alaska DOT&PF with the responsibility for planning activities for all modes of transportation.

The ASRP identifies both passenger and freight rail opportunities for proposed investments and future studies. System-wide, the plan suggests grade-separation of all NHS at-grade rail crossings, grade-separation of significant non-NHS at-grade crossings, and ARRC Positive Train Control. Long-term strategies identified include extending transportation facilities to provide surface access to resource development, and standardizing Alaska's track to a 286,000 pound capacity. Project specific to the Interior Region, include:

- ARRC Fairbanks Area Line Relocation- Phase 1
- Cantwell Intermodal Facility
- ARRC Nenana Rail Line Relocation
- Fairbanks Area Rail Plan
- ARRC Northern Rail Extension
- ARRC Healy Canyon Stabilization
- ARRC Fairbanks Airport Branch and Eielson Branch Staging Areas
- ARRC Fairbanks Freight Intermodal Terminal Rail/Truck Staging Area
- Extending Transportation Facilities to Provide Surface Access to Resource Development Opportunities

In addition to the projects noted above, the ASRP also proposes projects for economic analysis, periodic re-evaluation, and study in the Interior, including:

- Nenana/Dunbar to Livengood Railroad Extension
- Rail Extension to North Slope
- Alaska-Canada Rail Link (ACRL)
- Island Railroad to Yukon Territory

It should be noted that management and operations of Alaska railroads are the responsibility of Alaska Railroad Corporation (ARRC), a state-owned corporation, established by the Alaska Railroad Corporation Act of 1984. The Alaska State Rail Plan Draft proposes continued support for ARRC, memorializes a desire by the state to invest in short and long-term passenger and freight projects, and examines the potential economic benefits and costs of rail extensions. To date, this plan has not been adopted or finalized.

Alaska Strategic Highway Safety Plan (2018)

The Alaska Strategic Highway Safety Plan (SHSP) focuses on a coordinated framework that works to reduce fatalities and serious injuries on all public roads. The SHSP is updated on a rolling five-year basis and is a cross-agency approach to address critical factors contributing to traffic-related fatalities and serious injuries by establishing performance goals, strategies, and action steps.

The SHSP identifies champions for each action step, including DOT&PF and Alaska's Metropolitan Planning Organizations (MPOs), including FAST (Fairbank Area Surface Transportation) Planning. Strategies are divided into three areas of emphasis, including Driver Behavior, Roadways, and Special Users. The actions identified for each champion agency includes the emphasis area and overall strategy to address safety. Interior agencies including DOT&PF and FAST Planning have been identified as champions in each emphasis area and are tasked with action steps that work together for statewide change.

The common theme that relates to the IATP is the need for improved data collection procedures, including both motorized and non-motorized users, and review and revision of statewide policies. Overall, the ASHP does not provide specific steps for the Interior Region but does emphasize department-wide actions that would benefit all of Alaska.

APPENDIX 3:

The Interior Alaska Transportation Plan 2024 Update, Technical Document

Section One

Population Projections and Economic Forecasts (January 2024)

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 LITERATURE AND DATA REVIEW 3

3.0 METHODS 4

3.1 Population Projections 4

3.1.1 Compound Annual Growth Rate (CAGR) Method 4

3.1.2 University of Florida Method 5

3.1.3 Comparison of Methods 7

3.2 Economic Forecasts 7

3.3 Visitor Industry 12

4.0 POPULATION PROJECTIONS AND ECONOMIC FORECASTS 15

4.1 Population Projections 15

4.2 Economic Forecasts 18

5.0 WHAT'S NEXT FOR PROJECTIONS & FORECASTS 23

5.1 Fairbanks North Star Borough 23

5.2 Copper River Census Area/Copper Valley Regional Planning Organization 23

5.3 Denali Borough 23

5.4 Southeast Fairbanks Census Area and Yukon-Koyukuk Census Area 23

FIGURES

Figure 1: IATP Area 1

Figure 2: Average Annual Growth of Alaska Visitor Volume, 2018 to 2019 13

Figure 3: Denali National Park Visitor Statistics, 2010-2019 14

TABLES

Table 1: Sources of Literature and Data Reviewed 3

Table 2: Economic Drivers Considered and Inclusion Status 9

Table 3: IATP Community-Level Population Projections* 16

Table 4: Economic Forecasts by IATP Region 19

Table 5: Details on Included Economic Drivers 21

Table 6: Scenario Definition Quick Reference 21

ACRONYMS AND ABBREVIATIONS

AAC	Average Annual Change
AAP	Average Annual Percent
AASC	Average Annual Share Change
ACS	American Community Survey
ASG	Average Share of Growth
ATIA	Alaska Travel Industry Association
B	base year population value
BP	base population
CAGR	Compound Annual Growth Rate
CDP	Census Designated Place
CEDS	Comprehensive Economic Development Strategy
CVDA	Copper Valley Development Association
DOE	Alaska Department of Education
DOLWD	Alaska Department of Labor and Workforce Development
DOT&PF	Alaska Department of Transportation and Public Facilities
FAST	Fairbanks Area Surface Transportation
FNSB	Fairbanks North Star Borough
IATP	Interior Alaska Transportation Plan
IGU	Interior Gas Utility
LNG	Liquid Natural Gas
Memo	Technical Memorandum
RB	Regional Base
RP	Regional Population
TCC	Tanana Chiefs Conference
UF	University of Florida
US	United States

1.0 INTRODUCTION

This Technical Memorandum (memo) presents population projections and economic forecasts to support the understanding of anticipated fluctuations in economic activity and the subsequent effect on population and transportation demand for communities within the Interior Alaska Transportation Plan (IATP) area, (*Figure 1)*. The memo describes the analysis methods and resulting population projections at both the regional and community level and economic forecasts at the regional level. Specifically, the population projections provide base estimates from 2025 to 2045 at the regional level (boroughs and census areas) and at the community level (Alaska Native Village, city, and census designated place [CDP]) within the IATP area. Economic forecasts build on the base population (BP) projections with low, medium, and high economic forecast scenarios based on planned and possible economic activity (i.e., drivers).

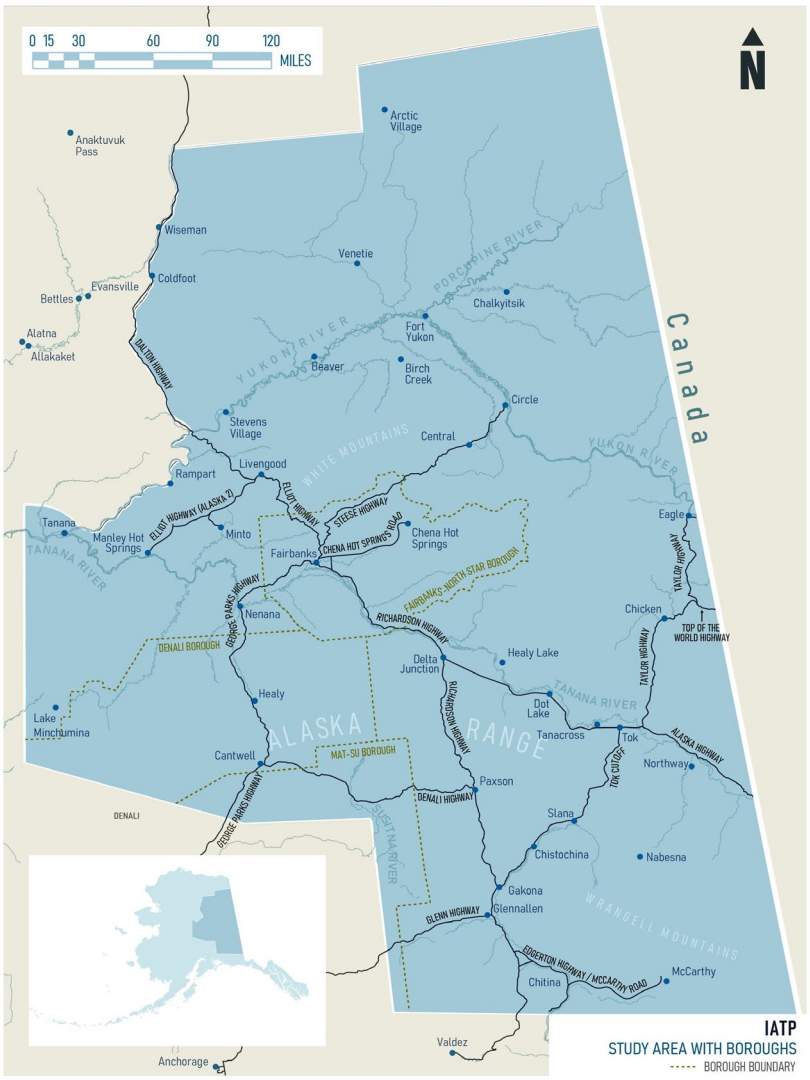


Figure 1: IATP Area

Population information provided by the Alaska Department of Labor and Workforce Development (DOLWD) at the borough and census level was used to develop community-level population projections within the IATP area. Generating realistic local population projections is challenging because many communities in the Interior are very small. Two methods for developing population projections for small communities – the compound annual growth rate (CAGR) and a method developed by the University of Florida (UF Method) – are described in Section 3.

Population projections do not account for economic drivers which can significantly impact population of communities and regions in the Interior. To account for economic drivers, the economic forecasts include factors that may impact population such as school closures, temporary or permanent staffing increases in local government, and development projects that are expected to occur within the next 20 years.

A wide variety of resources including regional stakeholders, DOLWD economists, and industry experts were consulted during development of the population projections and economic forecasts presented within this memo.

2.0 LITERATURE AND DATA REVIEW

Demographic and other relevant economic literature and data for the regions and communities in the IATP area were reviewed before development of the population projections and economic forecasts (*Table 1*). Small area income and poverty estimate values are available for only the borough and census-area level. All other variables were reviewed for the borough, census area, Alaska Native Village, city, community, and CDP level. The review provided insight into regional and local economic trends and identified available data for factors to consider when developing low, medium, and high economic forecast scenarios. For example, trends in school enrollment, new housing construction, and poverty rates can significantly impact population. Therefore, basing the economic forecasts on available data is critical.

Many of the communities in the IATP area are small, and year-to-year population variability of only a few individuals can have an outsized impact on projecting population changes to 2045. To manage this US Census data, five-year estimates produced by American Community Survey (ACS) were used for all areas in the IATP region and are more reliable because they have a larger sample size, which is critical when calculating projections for very small communities. Data from the DOLWD provided population values and the number of new housing units in an area. School enrollment values were obtained from the Alaska Department of Education (DOE) statistics program. For distance learning programs, enrollment numbers for programs listed by the DOE as exclusively regional were included while enrollment numbers for statewide programs were excluded.

Table 1: Sources of Literature and Data Reviewed

Variable	Data Source
Population	DOLWD
Race & Ethnicity	US Census ACS five-year estimates
Percent of population below the poverty level	US Census ACS five-year estimates
Mean and Median Incomes	US Census ACS five-year estimates
Small Area Income & Poverty Estimates percent in poverty	US Census at only the borough- and census-area level
School Enrollment Numbers	DOE
Number of New Housing Units	DOLWD
Unemployment	US Census ACS five-year estimates

3.0 METHODS

3.1 Population Projections

Borough and census area population projections published by DOLWD for 2021 to 2050 were used as the initial basis for population estimates within the IATP area. This dataset is the most current; however, updated borough and census area projections are anticipated in 2024. The DOLWD develops projections for the borough and census area and calculates regional projections in five-year intervals using the cohort-component method, which considers mortality, fertility, and migration rates of recent time series data (in this case up to 2020 or 2021).

At the statewide level, DOLWD provides low, medium, and high population projections. The DOLWD uses proportional fitting in the calculation of the borough and census area population projections to eliminate discrepancies between the sum of the borough and census area projections and the statewide middle scenario projection. The borough and census area projections within the IATP region closely match the statewide middle scenario population projections developed by DOLWD.[1]

Population projections for areas smaller than borough/census areas are based on DOLWD community-level population data (2012 to 2022) and DOLWD regional projections (2021 to 2050). These base projections (as with the DOLWD regional projections) do not consider future economic activities except for planned or confirmed population transfers relevant to projections for Fairbanks North Star Borough (FNSB). Within FNSB, planned increases in military personnel and dependents at the Eielson Air Force Base were included in DOLWD population projections and considered in estimating economic forecasts for FNSB.

The methods employed for estimating base population projections for all areas within the smaller than census area and borough are described in Section 3.1.1 and Section 3.1.2. Both methods were used to calculate 2022 population projections which were then compared to the DOLWD values (Section 3.1.3).

3.1.1 Compound Annual Growth Rate (CAGR) Method

For context, population projections were initially developed using the method used in the 2010 IATP, which estimated population based on compound annual growth rates (CAGR). A base period of 2010 to 2021 was used to calculate a CAGR for each region and community. The percentage difference between the regional and community level CAGR values was then used to create a community-specific CAGR for projected growth and applied to each community's 2022 DOLWD estimated population projections.

The CAGR method generated reasonable values for areas with larger populations, such as Fairbanks and North Pole. However, population projections for some of the very small communities showed some surprising and unlikely results such as:

- Communities with growth in the previous five years showed exponential projected population growth. For example, McCarthy, with a population of 125 in 2022, was forecast to reach 2,328 people by 2045.
- Populations for several communities with recent, yet small, decreases in population showed projected population to drop to very small numbers or even down to a population of zero by the end of the projection period (e.g., Nabesna and Tolsona).

[1] *Alaska Department of Labor and Workforce Development. (2022). Alaska Population Projections 2021 to 2050. https://live.laborstats.alaska.gov/article/alaska-population-projections*

- Community and regional numbers did not agree. The sum of the population projections for all Copper River Census area communities was approximately 1.7 times larger than DOLWD's regional projection value for the region.

3.1.2 University of Florida Method

A method used by the University of Florida (UF) Bureau of Economic and Business Research Florida Population Studies[2] group was tested and ultimately used for the IATP (UF Method). The UF Method generates numerous projections, removes the outliers, and averages the remaining individual projections to generate a final projection. For the IATP area population projections, four projection techniques were applied, each using three sets of base years, to create 12 initial population projections. The four projection techniques are: linear, exponential, share-of-growth, and shift-share as explained below.

Linear: This assumes the population will change by the same number of people in each future year as the average annual change during the base period.

1. Calculate the average annual change in number of people over the base period.

   average annual change in number of people (AAC) = (Y2-Y1+Y3-Y2...+Yn+1-Yn) / n

   Where:

   Y = DOLWD community population value for the base period Year 1 through Year n+1
   n = number of annual change values for the base period

2. Add the AAC value to the 2022 DOLWD population value and to each subsequent year to generate the population projection values. Population projection values that reach zero remain at zero for any future projected years.

   *population projection value = B + AAC * n*

   Where:

   B = base year population value, the 2022 DOLWD population estimate
   AAC = average annual change in number of people
   n = number of years past 2022

Exponential: This technique assumes the population will change at the same percentage rate in each future year as the average annual rate during the base period.

1. Calculate the average annual percentage change in population over the base period.

   average annual percent change (AAP) = (Y2/Y1+Y3/Y2...+Yn+1/Yn) / n

   Where:

   Y = DOLWD community population value for the base period Year 1 through Year n+1
   n = number of annual percentage rates for the base period

2. Multiply the 2022 DOLWD population value and to each subsequent year to generate the population projection values.

   *population projection value = B * AAP^n*

[2] *University of Florida, Bureau of Economic and Business Research. (2022). Projections of Florida Population by County, 2025-2050, with estimates for 2021. https://www.bebr.ufl.edu/wp-content/uploads/2022/02/projections_2022.pdf.*

Where:

B = base year population value, the 2022 DOLWD population estimate
AAP = Average Annual Percent change in number of people
n = number of years past 2022

Share-of-Growth: This assumes each community's share of regional population growth in the future will be the same as its share during the base period.

1. Calculate the communities' average share of the regional population growth over the base period.

   average share of growth (ASG) = (Y1/R1+Y2/R2+...Yn/Rn) / n

   Where:

   Y = DOLWD community population value for the base period Year 1 through Year n
   R = Relevant Regional Population value for the base period Year 1 through Year n
   n = number of share-of-growth values for the base period

2. Multiply the average share-of-growth value by each year's DOLWD population projection value to generate the forecast population values.

   *population forecast = ASG * RP*

   Where:

   ASG = Average Share of Growth
   RP = relevant Regional Population projected value for the year of interest (from DOLWD)

Shift-Share: This technique assumes each community's share of the regional population will change by the same annual amount in the future as the average annual change during the base period.

1. Calculate the average annual share change over the base period.

   average annual share change (AASC) = (Y2/R2-Y1/R1+Y3/R3-Y2/R2...+Yn+1/Rn+1-Yn/Rn) / n

   Where:

   Y = DOLWD community population value for the base period Year 1 through Year n+1
   R = relevant Regional Population value for the base period Year 1 through Year n+1
   n = number of share rate of change values over the base period

2. Divide the 2022 DOLWD population value for the community by the relevant DOLWD regional population value to get an initial share-of-growth value (B/RB). Multiply the B/RB by the AASC value from step 1, then multiply again by the number of years past 2022 to get the Shift-Share amount of change. Then add the amount of change to the same initial B/RB for a projected community share of the regional population. Multiply the community share by the relevant DOLWD projected regional population value for the year of the projection.

   *population forecast= ((B/RB) * AASC * n) + (B/RB) * RP*

   Where:

   B = Base year population value (2022 DOLWD)
   RB = relevant Regional Base year population value (2022 DOLWD)
   n = number of years past 2022
   AASC = Average Annual Share Change
   RP = relevant Regional Population projection value for the year of interest (from DOLWD)

The UF method generates 12 projections for each community (three base periods for each of the four techniques described above). The first set of base years in each technique were the pandemic years of 2020 to 2022 to isolate changes in these years and, if values were uncharacteristic of the community, allow 2020 to 2022 values to be automatically dropped as outliers in a later step. The other two sets of base years were a five-year and a ten-year period. For rate-of-change estimates the pandemic years are a two-year base and the five-year and ten-year periods were 2017 to 2022 and 2012 to 2022, respectively. For the share-of-growth method the pandemic period was a three-year base, and the five-year and ten-year periods were 2018 to 2022 and 2013 to 2022, respectively.

Averages for each community were calculated after removing different numbers of high and low outliers from the projections. On a community-by-community basis, equal numbers of high and low outliers were removed to create community averages for 2022 using all 12, 10, eight, six, and four projection values, respectively. The five projection averages using the UF method were compared to the DOLWD 2022 community level and regional level estimates. The average created using elimination of the two highest and lowest projection values (using eight values) was chosen as the best fit and is reported for all years of community level population projections. Borough and census area projections for 2025 to 2045 are unchanged from the DOLWD 2021 to 2050 projections.

3.1.3 Comparison of Methods

Where the 2010 IATP (CAGR) method (Section 3.1.1) essentially smooths out small-scale stochasticity with a single rate of change, the UF method (Section 3.1.2) captures more nuance by averaging multiple projections. With the release of DOLWD's 2022 population estimates, the CAGR and the UF methods were compared. The UF method resulted in an overall closer fit to the 2022 "actuals" and was selected to generate the community population projections for the IATP area. Communities and regions (e.g., McCarthy and the Copper River Census Area) showed unusual values in the CAGR projections, whereas population projections appear to be more realistic with the UF method. When the UF method was applied to 2045, community-level projections continued to appear realistic and fit well with regional DOLWD projections.

3.2 Economic Forecasts

The updated approach to the 2010 IATP CAGR method for economic forecasts draws on the base population projections to create low, medium, and high economic forecast scenarios for each census area or borough, as appropriate in the IATP area. This enables a more fine-grained approach that looks beyond the road system versus non-road system divide to specific trends and economic drivers in each subregion. Definitions of the base population projections and low, medium, and high forecast scenarios are provided below.

Base Population Projections: Population increase or decrease at five-year intervals through 2045 based on historical population data.

Low Forecast Scenario: Subtracts from the base population projection for each region depending on possible economic drivers that would reduce a population (e.g., school closure), and adds to population considering certain or in-progress economic drivers, employing low end population increases, if a range for population change is provided.

Medium Forecast Scenario: Adds to base population projection depending on certain/in-progress economic drivers, employing mid-range population increases, if a range for population change is provided.

High Forecast Scenario: Adds to base population projection depending on certain/in-progress and possible economic drivers, employing high-end population increases, if a range for population change is provided.

The starting point for economic forecasts is the DOLWD borough and census area population projections and community-level projections. Projections are referred to as the "base population." Research was conducted to identify IATP areawide factors and region-specific factors that must be considered for the low, medium, and high economic

forecast scenarios. IATP areawide findings indicate that there is no single event or driver that is expected to impact population in all communities in the IATP area.

Economic scenarios and economic drivers (such as projects or events) were then identified for consideration (*Table 2*). Scenarios were developed by the IATP team based on feedback received through public involvement, transportation research, and economic and demographic research. Economic drivers were vetted using the following criteria:

- Sufficient data is available to estimate meaningful/valid population changes
- Likelihood of the economic driver
- Economic driver would occur within the planning period
- Impacted areas are within the IATP area.

Even with these criteria, discretion is still used when deciding which economic drivers to include in the economic forecasts. This is particularly true for small, medium, or large mining or pipeline projects that have been considered for years or decades. The approach here, similar to one taken by DOLWD, is to view only permitted projects as likely to be constructed. As a result, only the Manh Choh mining project near Tok is included in the low and medium economic forecasts. For the sake of variation between the low, medium, and high forecasts, two uncertain projects were included in the high forecast: the Alaska Liquefied Natural Gas (LNG) project and a proxy gold mining project, assumed to be similar to the Livengood Gold Project.

Table 2: Economic Drivers Considered and Inclusion Status

Economic Driver	Forecast Inclusion Status			Notes	Source
	Low	Medium	High		
Alaska LNG	×	×	✓	Not permitted, but still in consideration and in 2010 IATP.	Federal Energy Regulatory Commission. (2020). *Final Environmental Impact Statement – Alaska LNG Project, CP17-178-000*. https://www.ferc.gov/industries-data/natural-gas/final-environmental-impact-statement-0
Alaska 2 Alberta Rail Project	×	×	×	No planned action; Company in receivership	Ellis, T. (2021, July 14). 'Boondoggle': financial woes may jeopardize proposed Alaska-Canada railroad project. *KTOO.* https://www.ktoo.org/2021/07/14/boondoggle-financial-woes-may-jeopardize-proposed-alaska-canada-railroad-project/ Orr, V. (2021, July 31). Is A2A staying on track? *Alaska Business Magazine.* https://www.akbizmag.com/industry/transportation/is-a2a-staying-on-track/ Rieger, S. (2021, June 23). Alberta to Alaska rail project files for creditor protection after lender goes into receivership. *CBC News.* https://web.archive.org/web/20230215110710/https://www.cbc.ca/news/canada/calgary/a2a-rail-project-creditor-protection-1.6077226
Ambler Road	×	×	×	Not permitted; no communities within IATP impacted	US Department of the Interior Bureau of Land Management and US Army Corps of Engineers. (2020). *Ambler Road Environmental Impact Statement: Joint Record of Decision.* https://dnr.alaska.gov/mlw/ambler-road/pdf/federal/Ambler-Road-Joint-Record-of-Decision.pdf State of Alaska Department of Natural Resources, Division of Mining, Land and Water. (2021). *AIDEA Ambler Road development plan update.* https://dnr.alaska.gov/mlw/ambler-road/pdf/state/AIDEA-Development-Plan-Update-2021-11-23-r2.pdf
Clear Space Force Station	×	×	×	Insufficient data; no current expectation on increase/decrease in staffing	Major R. Nelson, Director of Operations, US Space Force (email communication, Sept 6, 2023)
Denali Regional Airport	×	×	×	Insufficient data	Doyon Limited. (2022). Denali Airport: Project Overview Booklet. https://s3.documentcloud.org/documents/22276396/2022-doyon-denali-airport_overview-booklet.pdf Manning, P. (2022, September 15). Airport proposed near Denali National Park and Preserve. *KTNA*. https://ktna.org/2022/09/airport-proposed-near-denali-national-park-and-preserve/#:~:text=According%20to%20an%20informational%20document,large%20as%20a%20Boeing%20737.

Economic Driver	Forecast Inclusion Status			Notes	Source
	Low	Medium	High		
Fort Wainwright, Combined Heat & Power Generation	✓	✓	✓	Planned	US Army Garrison Alaska. (2022). *Final Environmental Impact Statement addressing heat and electrical upgrades at Fort Wainwright, Alaska.* https://home.army.mil/alaska/application/files/9716/7581/1146/Final_Environmental_Impact_Statement_Addressing_Heat_and_Electrical_Upgrades_at_Fort_Wainwright_Alaska.pdf
Eielson Air Force Base Expansion	✓	✓	✓	F-35 Expansion complete, K-135 expansion planned and data available	Eielson Air Force Base Housing Kneeboard, CAO August 24, 2023, provided by Lt. Col. Christopher Higgins, Eielson Air Force Base (email communication, September 2023)
IGU-Hilcorp LNG Trucking	×	×	×	No expectation of population impacts on IATP communities	Interior Gas Utility (IGU). (2023, January 17). *Board of Directors special board meeting.* https://www.interiorgas.com/wpdm-package/1-17-2023-igu-special-board-meeting-packet/?wpdmdl=6540&ind=1673987208684 IGU. (2023, August 1). *Board of Directors meeting.* https://www.interiorgas.com/wpdm-package/8-1-2023-igu-board-meeting-packet/?wpdmdl=6878&ind=1690848451863 Elena Sudduth, General Manager, Interior Gas Utility, email communication, August 30, 2023
Demographics, Infrastructure & Broadband Projects	✓	✓	✓	Multiple infrastructure and broadband projects have been funded in the Tanana Chiefs Conference (TCC) region and are possible in Copper River.	TCC.(2022).*Comprehensive Economic Development Strategy (CEDS) 2022-2026.* Retrieved from https://www.tananachiefs.org/wp-content/uploads/2022/03/03-28-22_TCC_CEDSEconomicRecoveryPlan.pdf Jennifer Rosenthal, Executive Director, Copper Valley Development Association, personal communication, September 15, 2023
Livengood Gold Project/Other Potential Mining Activity	×	×	✓	This specific project is **not permitted**. Included in high scenario as a proxy for other potential mining activity within the IATP area.	Hardie, C., Cassoff, J., Turgeon, M., Baker, R.T., Levy, M.E., & Wilson, S.E. (20210. *Pre-feasibility study of the Livengood Gold Project (NI 43-101 Technical Report).* https://www.ithmines.com/_resources/technical-reports/3661012-000000-40-ERA-0001-R00.pdf?v=0.187 International Tower Hill Mines LTD. (n.d.). *Livengood Gold Project: FAQ.* https://www.ithmines.com/livengood-gold-project/faq/ R. Solie, International Tower Hill Mines Investor and Community Relations Manager, personal communication, August 21, 2023

Economic Driver	Forecast Inclusion Status			Notes	Source
	Low	Medium	High		
Manh Choh Mine & Ore Hauling	✓	✓	✓	Mostly permitted, investments made, detailed data available	Kinross Manh Choh (n.d.) *Trucking.* https://manhchoh.com/trucking/ McKinley Research Group, LLC. (2021). *Summary, Manh Choh Project: A regional socioeconomic profile and assessment of potential economic impacts.* https://manhchoh.com/wp-content/uploads/2022/01/SUMMARY-FINAL-McKinley-Research-Group-Manh-Choh-Economic-Benefits-12.30.2021.pdf
Tourism/Visitor Seasonal Impacts	✓	✓	✓	Identified in Community Meeting; data available	Denali National Park Visitor Statistics. Retrieved Sept 1, 2023, from https://www.nationalparked.com/denali/visitation-statistics Wrangell-St Elias Park Statistics. Retrieved Sept. 1, 2023, from https://www.nps.gov/wrst/learn/management/statistics.htm Alaska Travel Industry Association. (2023). *Alaska 2022-2023 Visitor Profile Report. https://www.alaskatia.org/sites/default/files/2023-12/ATIA%20Alaska%20Visitor%20Profile%202022-2023.pdf* Alaska Travel Industry Association. (2023). *Alaska 2022-2023 Tourism Impact Model.* https://www.alaskatia.org/sites/default/files/2023-12/ATIA%20Alaska%20Tourism%20Impact%20Report%202022-2023.pdf Alaska Department of Commerce, Community, & Economic Development. (2017). *Alaska Visitor Statistics Program 7, Summer 2016.* https://dot.alaska.gov/stwddes/desbridge/assets/grant/eastbridges/a_visitor_report_7.pdf.
Willow Project (Conoco Phillips)	×	×	×	Approved for permitting, no expectation of specific impacts on IATP communities	Conoco Phillips Alaska (2024). ***The Willow Project, Fact Sheet.*** **https://powerincooperation.com/policyissues/willow-info-center/?resource-id=934** U.S. Department of the Interior Bureau of Land Management. (2023). *Willow Master Development Plan Final Supplemental Environmental Impact Statement.* https://eplanning.blm.gov/eplanning-ui/project/109410/570

For each economic projection calculation, a low, medium, or high impact scenario was applied. The resulting anticipated number of new residents was added to the region's population projection. Time-specific increases in population counts, rather than regionwide percentages, were used to avoid implausible forecasts of new residents.[3] The same approach was used in the Fairbanks Population/Employment Forecasts, prepared in January 2023 by Kittelson and Associates, Inc. for Fairbanks Area Surface Transportation (FAST) Planning. Each economic forecast scenario used the estimated number of new residents based on the above-mentioned sources. Rougher estimates or different estimates were used in the following economic driver scenarios:

1. **Tourism/Visitor Seasonal Impacts:** Previous and current visitor data from the National Park Service and the Alaska Travel Industry Association's (ATIA) visitor industry profile and impact report are documented in the economic forecasts. Though there is current data available, this does not reflect a "typical" year, as the industry is still recovering from the pandemic-caused reduction in visitor traffic. For National Park Service data, the actual number of visitors from 2019 is used to reflect a return to pre-pandemic visitor numbers. For FNSB, the 2016 Alaska Visitor Statistics Program visitor figures are included in the forecast scenario (Section 3.3).
2. **KC-135 Stratotanker Squadron, Eielson Air Force Base:** The population numbers used are different from those used in the FAST Planning memo noted above because more current data is available. First, the F-35 bed-down was complete in 2022, and Eielson Air Force Base active-duty numbers show a drop in military personnel in 2023 to slightly below 2021 levels. Second, the actual number of military personnel currently expected to arrive at Eielson Air Force Base by 2026, is higher than reported in the 2023 FAST Planning memo. The numbers used in this forecast rely on actuals and estimated authorizations as of August 2023, rather than estimates from 2018.
3. **Demographics, Infrastructure, and Broadband Projects:** These numbers are the roughest estimates, based primarily on the number of Tribal Governments in the region and a range of expectations for increased staffing to handle federal funds and projects. Examples of school closings for communities with very low enrollment are included in the low scenario.

3.3 Visitor Industry

The Alaska visitor industry brings large numbers of people into the IATP area for recreation, tourism, and employment. Visitor statistics (flow of people coming to Alaska for tourism) and employment counts in the hospitality and leisure industry are tracked by different organizations in the State of Alaska, as described below.

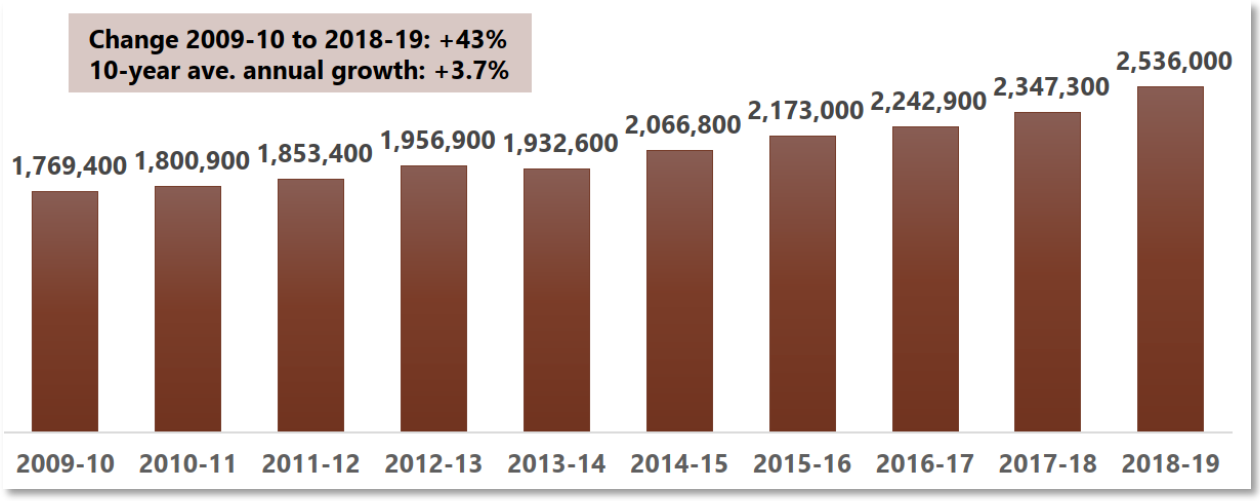
Visitor statistics, with reports on tourism numbers and impacts, was formerly an Alaska State program (Alaska Visitor Statistics) and is currently managed by the ATIA. These reports count and survey visitors and use data provided by transportation groups and other sources to develop statewide and regional visitor profiles and volume estimates. The Alaska 2022 to 2023 Visitor Profile Report (November 2023) draws from data collected in May 2022 to April 2023. This update is still not considered representative of a "typical" year. However, it shows a strong recovery in visitor volume as well as updated information on modes of transportation and the share of visitor volume at sites in the IATP area.

The 2023 Tourism Impact Report shows the Alaska 2022 to 2023 full-year visitor volume for the state is 2,724,180. Overall, the ATIA-defined Interior region, which largely overlaps with the IATP area, had 26 percent of the Alaska tourism market. Most of that share is attributed to Denali National Park and Fairbanks with each reaching 20 percent, respectively, of total visitors. Traveler type continues to distinguish the Interior from other high-traffic visitor areas,

[3] Small area (under 10,000 people) population forecasting methods are varied and, when evaluated, perform with different levels of accuracy. Methods employing a constant linear or exponential growth rate are "susceptible to producing negative or runaway growth in the long run." Wilson, T., Grossman, I., Alexander, M., Rees, P., & Temple, J. (2022. *Methods for Small Area Population Forecasts: State-of-the Art and Research Needs. (Population Research and Policy Review, 41:865-898)*. https://doi.org/10.1007/s11113-021-09671-6.

such as the Inside Passage and Southcentral Alaska, with only 10 percent of travelers arriving via a cruise package, 36 percent identified as independent, and 62 percent traveling via a guided group. *Figure 2* shows the statewide trend with visitor volumes of previous "typical years" increasing at a 10-year average annual growth rate of 3.7 percent.

Figure 2: Average Annual Growth of Alaska Visitor Volume, 2018 to 2019



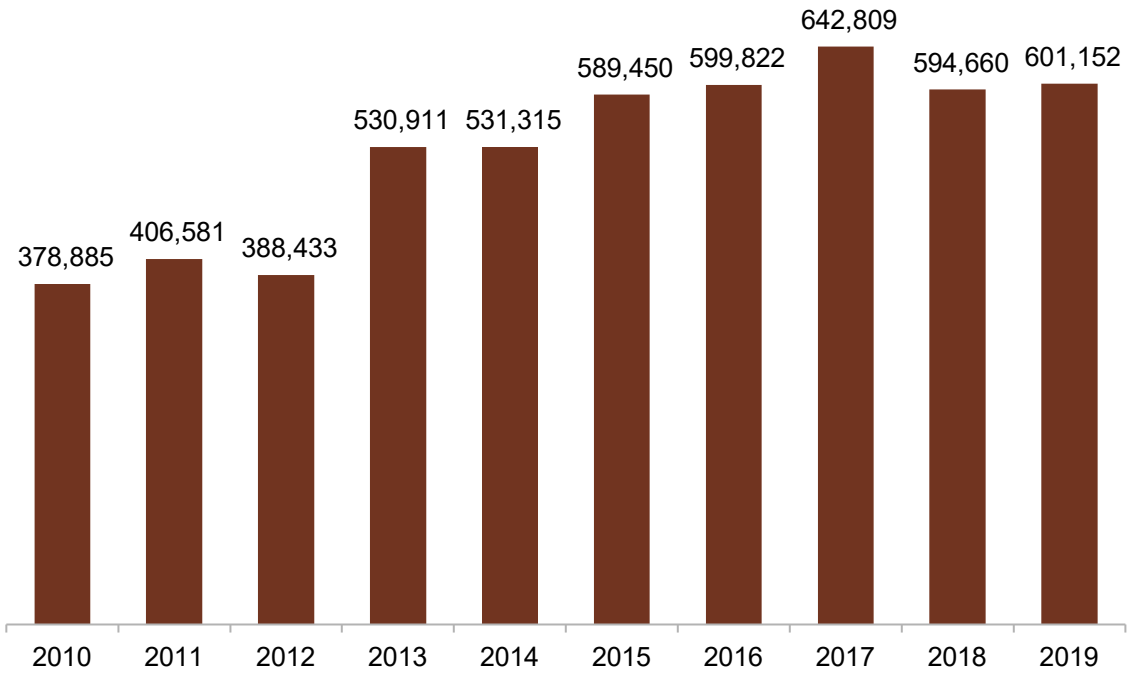
Source: Alaska Visitor Volume Report. June 2020

Denali National Park has been the most significant tourism draw in the IATP area, and both the park and surrounding area experience impacts to the transportation system[4]. The National Park Service tracks visitor numbers with published data to 2021 (*Figure 3)*[5]. Except for the pandemic years (2020 to 2022) visitor numbers steadily increased over time with 601,152 visitors in 2019, representing a 63 percent increase since 2010 and an average annual growth rate of 5.9 percent over the pre-pandemic ten-year period.

[4] *McDowell Group, Alaska Visitor Statistics Program 7 (2016). https://dot.alaska.gov/stwddes/desbridge/assets/grant/eastbridges/a_visitor_report_7.pdf*

[5] *National Park Service (2023). Park Visitor Statistics (2010-2019). https://www.nps.gov/dena/learn/management/statistics.htm*

Figure 3: Denali National Park Visitor Statistics, 2010-2019



Source: National Park Service

The DOLWD reports on regional employment numbers and generates employment projections for the leisure and hospitality industry. The 2020-2030 Industry Projections (except for the decline in pandemic years) indicate an expected growth of 3.8 percent representing 1,390 new jobs created from 2019 to 2030 in the leisure and hospitality jobs sector statewide.[6] This growth or future growth in the leisure and hospitality industry in the IATP area should be monitored for future region or community-specific transportation planning. Based on the current annual census of employment in this sector, only the FNSB and Denali Borough have the largest numbers of year-round or seasonal employees.

In 2022, the Denali Borough averaged 947 leisure and hospitality jobs with a peak of 2,313 in the summer season and a low of 134 in the winter. The FNSB averaged 4,472 leisure and hospitality industry jobs with a peak of 4,942 in the summer and a low 4,052 in the winter. Both boroughs experience a similar difference in employment (800 to 900 employees) from the summer to winter seasons. The other regions within the IATP area have significantly lower employment in this sector with 2022 annual averages at 167 in the Copper River Census Area, 190 in the Southeast Fairbanks Census Area, and with only partial data available, 26 in accommodation and food service, in the Yukon-Koyukuk Census Area.[7]

The influx of tourists and seasonal workers generate significant economic activity in the Denali Borough and FNSB. However, in these regions and in other regions of the IATP, long-term growth in the year-round population is not an expected outcome.

[6] Alaska Department of Labor & Workforce Development. (2022). *Alaska Economic Trends. https://live.laborstats.alaska.gov/article/industry-employment-projections.*

[7] Alaska Department of Labor & Workforce Development. (2023). *Current Quarterly Census of Employment and Wages, Annual January to December 2022. https://live.laborstats.alaska.gov/article/current-quarterly-census-employment-and-wages-qcew*

4.0 POPULATION PROJECTIONS AND ECONOMIC FORECASTS

4.1 Population Projections

Population in the IATP area is expected to decline in most rural regions and slightly increase in more populated regions by 2045 based on historic trends, without consideration of economic drivers (*Table 3)*. There is a significant discrepancy between the final community population totals and the region's population for the Yukon-Koyukuk Census Area and Matanuska-Susitna Borough. This is because only half of the communities in the Yukon-Koyukuk Census Area and only one community in the Matanuska-Susitna Borough are within the IATP area, as reflected by an asterisk on regional projected totals in *Table 3*.

Unlike the projected population increases in more populated areas, the City of Fairbanks is projected to experience a slight population decline (-1 percent) with a loss of 294 people by 2045. The FNSB is projected to increase by 3 percent (2,972 people) with 5 percent growth (109 people) for the City of North Pole.

The Copper River Census Area, Denali Borough, and the Southeast Fairbanks Census Area are mostly rural and contained entirely within the IATP area and are expected to see overall population declines. These declines are expected to be seen as -14 percent for the Copper River Census Area, -20 percent for the Denali Borough, and -6 percent for the Southeast Fairbanks Census Area, through 2045. Within the Copper River Census area, Glennallen is projected to lose the most people (88), followed by Tazlina, Slana, Gulkana, and Copper Center with declines of 28 to 38 people. The most significant growth in the Copper River Census Area is for McCarthy (60 people) and Kenny Lake (66 people). The Denali Borough is projected to lose 305 people representing a population reduction of 20 percent. In the Southeast Fairbanks Census Area, the largest population losses are likely to be seen in Big Delta (-74 people), Delta Junction (-37 people), and Northway (-44 people). Deltana is projected to grow the most by adding 94 people, while Tok, Tetlin, and Dot Lake are projected to grow by 29 to 32 people.

The small community of Lake Louise is the only community of the Matanuska-Susitna Borough within the IATP area and is projected for significant growth through 2045 adding 62 people, a 133 percent increase. The Matanuska-Susitna Borough is consistently one of the fastest-growing regions in the state and is projected to grow by 24 percent by 2045. The community of Lake Louise is near the edge of the borough, and a significant distance from the rapidly growing communities centered in Palmer and Wasilla. Because six of the 12 community-level projections used in the final estimate are based on regional growth, caution should be used in considering this projection for Lake Louise.

In the Yukon-Koyukuk Census Area, most communities are expected to decrease in size with Tanana City, Nenana, Fort Yukon, and Arctic Village each projected to lose 39 to 53 people. Lake Minchumina is projected to see the largest increase at 73 people (176 percent increase) while Rampart and Four Mile Road are expected to grow by 31 to 41 people through 2045.

*Table 3: IATP Community-Level Population Projections**

Region/Communities	Population Projections					Change	% Change
	2025	2030	2035	2040	2045	2025-2045	2025- 2045
COPPER RIVER CENSUS AREA	2,576	2,484	2,390	2,309	2,221	-355	-14%
Chisana CDP	-	-	-	-	-	0	0%
Chistochina CDP	53	47	42	37	33	-19	-37%
Chitina CDP	94	89	84	80	75	-19	-20%
Copper Center CDP	311	302	292	284	274	-37	-12%
Gakona CDP	180	180	180	181	182	2	1%
Glennallen CDP	414	391	369	347	326	-88	-21%
Gulkana CDP	85	76	68	60	53	-32	-38%
Kenny Lake CDP	298	308	321	340	364	66	22%
McCarthy CDP	122	136	151	166	182	60	49%
Mendeltna CDP	46	47	48	49	51	5	10%
Mentasta Lake CDP	116	111	106	101	97	-19	-16%
Nabesna CDP	2	2	2	2	3	1	29%
Nelchina CDP	45	42	39	37	35	-10	-22%
Paxson CDP	26	25	25	25	25	-1	-2%
Silver Springs CDP	102	96	90	85	80	-22	-22%
Slana CDP	84	69	58	51	46	-38	-45%
Tazlina CDP	252	245	238	231	225	-28	-11%
Tolsona CDP	12	11	10	10	9	-3	-23%
Tonsina CDP	48	42	37	33	29	-19	-39%
Willow Creek CDP	192	191	189	188	186	-6	-3%
DENALI BOROUGH	1,505	1,420	1,340	1,265	1,200	-305	-20%
FAIRBANKS NORTH STAR BOROUGH	98,790	100,278	101,136	101,585	101,762	2,972	3%
City of Fairbanks	32,038	32,085	32,030	31,909	31,744	-294	-1%
City of North Pole	2,283	2,319	2,346	2,369	2,389	106	5%
MATANUSKA-SUSITNA BOROUGH*	114,936*	122,830*	130,298*	137,132*	142,931*	27,995*	24%*
Lake Louise CDP	47	61	76	92	109	62	133%

Region/Communities	Population Projections					Change	% Change
	2025	2030	2035	2040	2045	2025-2045	2025- 2045
SOUTHEAST FAIRBANKS CENSUS AREA	6,837	6,763	6,669	6,557	6,453	-384	-6%
Alcan Border CDP	35	36	37	38	39	4	10%
Big Delta CDP	417	397	378	360	343	-74	-18%
Chicken CDP	12	13	13	13	13	1	8%
Delta Junction city	968	960	950	940	931	-37	-4%
Deltana CDP	2,417	2,443	2,467	2,488	2,511	94	4%
Dot Lake CDP	9	7	6	6	6	-3	-33%
Dot Lake Village CDP	41	48	55	63	70	29	71%
Dry Creek CDP	57	54	51	48	46	-11	-20%
Eagle City	73	68	63	59	55	-17	-24%
Eagle Village CDP	45	40	36	32	30	-15	-34%
Fort Greely CDP	344	349	353	358	364	20	6%
Healy Lake CDP	21	20	19	18	18	-4	-17%
Northway CDP	214	202	191	180	170	-44	-21%
Tanacross CDP	139	138	137	137	136	-3	-2%
Tetlin CDP	142	149	156	163	171	29	20%
Tok CDP	1,316	1,326	1,334	1,341	1,348	32	2%
YUKON-KOYUKUK CENSUS AREA*	4,976*	4,766*	4,563*	4,379*	4,215*	-761*	-15%*
Arctic Village CDP	130	119	109	99	91	-39	-30%
Beaver CDP	54	53	51	50	48	-6	-10%
Birch Creek CDP	28	27	26	25	24	-4	-13%
Central CDP	58	53	48	44	40	-18	-32%
Chalkyitsik CDP	48	43	39	36	33	-16	-33%
Circle CDP	86	82	78	74	70	-16	-18%
Coldfoot CDP	27	29	31	33	35	8	31%
Fort Yukon city	506	495	483	474	466	-40	-8%
Four Mile Road CDP	36	44	52	59	67	31	85%
Lake Minchumina CDP	41	51	65	84	114	73	176%
Livengood CDP	21	24	27	30	34	12	58%
Manley Hot Springs CDP	94	80	72	66	61	-33	-35%
Minto CDP	167	161	153	146	139	-28	-17%
Nenana city	342	326	310	295	281	-61	-18%
Rampart CDP	67	76	86	97	109	41	61%
Stevens Village CDP	25	20	17	16	14	-11	-42%
Tanana city	212	196	182	170	159	-53	-25%
Venetie CDP	186	176	167	159	152	-35	-19%

(Region values are DOL&WD forecasted values.)

**The Yukon-Koyukuk Census Area and Matanuska-Susitna Borough regional population values include communities that are not in the IATP area.*

4.2 Economic Forecasts

The economic forecasts build on the base population projections discussed in 4.1 to create low, medium, and high economic scenarios for each census area or borough. With the base population for each community and region projected for the years 2025 through 2045 as the starting point, population changes (increases or decreases) resulting from expected economic drivers are used to adjust population to arrive at the population figures for each community and region for each economic scenario (*Table 4*).

This enables a more fine-grained approach to economic forecasting, which looks beyond the road system versus non-road system divide, focusing instead on specific trends and economic drivers in each subregion. Definitions of the base population projections and low, medium, and high forecast scenarios are provided below.

The economic forecasts indicate that economic drivers only shift the overall change in population up or down by one or two percentage points. The economic drivers have no impact on percent change in population from 2025 to 2045 for the Denali Borough, Lake Louise/Matanuska-Susitna Borough, and Southeast Fairbanks Census Area (*Table 4*). For the Copper River Census Area, the low economic forecast lowers population change by one percent and the high economic forecast raises population change by one percent.

For the Yukon-Koyukuk Census Area, the trend is similar except for an additional one percent reduction in population in the medium economic forecast scenario, because the short-term increase in population from infrastructure construction described in *Table 5*.

Caution is advised on applying the economic forecasts for the Copper River Census Area, Southeast Fairbanks Census Area, and Yukon-Koyukuk Census Area too far into the future without considering the status of major infrastructure projects, notably broadband. The expectation is that high-speed internet will allow remote rural communities to retain and attract residents and Tribal members; however, currently no evidence directly suggests this or how this change could affect the IATP region.

For the Fairbanks North Star Borough, a consistent increase in overall population is expected (*Table 4*). The middle economic forecast reflects a short-term increase in population in 2025 and a smaller percentage increase from 2025 to 2045. For all economic forecasts for the Fairbanks North Star Borough, the trend for steady, yet small, population increase is attributed to the continued increase of military personnel at Eielson Air Force Base.

Table 4: Economic Forecasts by IATP Region

Region and Economic Scenario	2022	2025	2030	2035	2040	2045	% change 2025 - 2045
COPPER RIVER CENSUS AREA							
BP Projected	2,619	2,576	2,484	2,390	2,309	2,221	-14%
Low Total Population (BP + Economic Forecast)		2,576	2,474	2,370	2,289	2,201	-15%
Medium Total Population (BP + Economic Forecast)		2,581	2,494	2,390	2,309	2,221	-14%
High Total Population (BP + Economic Forecast)		2,591	2,534	2,430	2,349	2,261	-13%
Estimated Seasonal Population (Visitors)		75,000	75,000	75,000	75,000	75,000	
DENALI BOROUGH							
BP Projected	1,645	1,505	1,420	1,340	1,265	1,200	-20%
Low Total Population (BP + Economic Forecast)		1,505	1,420	1,340	1,265	1,200	-20%
Medium Total Population (BP + Economic Forecast)		1,505	1,420	1,340	1,265	1,200	-20%
High Total Population (BP + Economic Forecast)		1,505	1,420	1,345	1,275	1,210	-20%
Estimated Seasonal Population (Visitors)		601,152	601,152	601,152	601,152	601,152	

Region	2022	2025	2030	2035	2040	2045	Change 2025 - 2045
FAIRBANKS NORTH STAR BOROUGH							
BP Projected	96,747	98,790	100,278	101,136	101,585	101,762	3%
Low Total Population (BP + Economic Forecast)		100,803	101,946	102,804	103,253	103,430	3%
Medium Total Population (BP + Economic Forecast)		101,030	101,946	102,804	103,253	103,430	2%
High Total Population (BP + Economic Forecast)		102,491	103,419	104,147	105,846	106,283	4%
Estimated Seasonal Population (Visitors)		320,000	320,000	320,000	320,000	320,000	
LAKE LOUISE/MATANUSKA-SUSITNA BOROUGH*							
Base Population (BP) Projected	40	47	61	76	92	109	133%
Low/Medium/High Total Population (BP + Economic Forecast)		47	61	76	92	109	133%
SOUTHEAST FAIRBANKS CENSUS AREA							
Base Population (BP) Projected	7,046	6,837	6,763	6,669	6,557	6,453	-6%
Low Total Population (BP + Economic Forecast)		6,842	6,758	6,664	6,552	6,448	-6%
Medium Total Population (BP + Economic Forecast)		6,878	6,797	6,693	6,581	6,477	-6%
High Total Population (BP + Economic Forecast)		6,919	6,831	6,717	6,605	6,501	-6%
YUKON-KOYUKUK CENSUS AREA*							
Base Population	5,150	4,976	4,766	4,563	4,379	4,215	-15%
Low Total Population (BP + Economic Forecast)		4,976	4,756	4,553	4,369	4,205	-15%
Medium Total Population (BP + Economic Forecast)		5,001	4,791	4,573	4,389	4,225	-16%
High Total Population (BP + Economic Forecast)		5,021	4,811	4,603	4,429	4,245	-15%

BP = Base Population
**The Yukon-Koyukuk Census Area and Matanuska-Susitna Borough regional population values include communities that are not in the IATP area.*

The specific economic drivers applied to each region and forecast are detailed in *Table 5*. The "Estimate of Added Seasonal Population (Visitors)," sources, available in *Table 2*, are not included in the total population figures for each region. The figures in *Table 2* are provided to add context about the number of visitors in each region from roughly May to September.

Table 5: Details on Included Economic Drivers

Region	2025	2030	2035	2040	2045
COPPER RIVER CENSUS AREA					
Low Economic Forecast	School closure				
Medium Economic Forecast	Infrastructure projects, additional positions at Tribal Governments				
High Economic Forecast	Infrastructure projects, additional positions added at Tribal Governments				
Estimate of Added Seasonal Population (Visitors)	75,000	75,000	75,000	75,000	75,000
DENALI BOROUGH					
Low Economic Forecast	No economic drivers documented; base population used				
Medium Economic Forecast	No economic drivers documented; base population used				
High Economic Forecast	Alaska LNG, permanent positions added in 2035, 2040, 2045				
Estimate of Added Seasonal Population (Visitors)	601,152	601,152	601,152	601,152	601,152
FAIRBANKS NORTH STAR BOROUGH					
Low Economic Forecast	▪ Ft. Wainwright Construction, temporary positions added in 2025 ▪ Eielson Air Force Base, KC-135 personnel & dependents added in 2025 and kept through 2045 ▪ Manh Choh Mine and Ore Hauling, low range of positions added in 2025 to 2029				
Medium Economic Forecast	▪ Ft. Wainwright Construction, temporary positions added in 2025 ▪ Eielson Air Force Base, KC-135 personnel & dependents added in 2025 and kept through 2045 ▪ Manh Choh Mine and Ore Hauling, medium range of positions added in 2025 to 2029				
High Economic Forecast	▪ Ft. Wainwright Construction, temporary positions added in 2025 ▪ Eielson Air Force Base, KC-135 personnel, dependents & population from induced activity (0.74 per every personnel/dependent) added in 2025 and kept through 2045 ▪ Manh Choh Mine and Ore Hauling, high range of positions added in 2025 to 2029 ▪ AK LNG, permanent positions added in 2035, 2040, 2045, expect to drop by 2050 ▪ New mining operation in Yukon-Koyukuk Census Area, assume construction, operations crew based in FNSB, 2030 to 2045				
Estimate of Added Seasonal Population (Visitors)	320,000	320,000	320,000	320,000	320,000
LAKE LOUISE/MATANUSKA-SUSITNA BOROUGH					
Low/Medium/High Economic Forecast	▪ No economic drivers documented; base population used				

Region	2025	2030	2035	2040	2045
SOUTHEAST FAIRBANKS CENSUS AREA					
Low Economic Forecast	▪ School closure ▪ Manh Choh Mine and Ore Hauling, low range of positions added in 2025 to 2029				
Medium Economic Forecast	▪ Manh Choh Mine and Ore Hauling, medium range of positions added in 2025 to 2029 ▪ Infrastructure projects, positions added at Tribal Governments ▪ Infrastructure projects, temporary construction jobs added 2025 through 2035				
High Economic Forecast	▪ Manh Choh Mine and Ore Hauling, high range of positions added in 2025 to 2029 ▪ Infrastructure projects, additional positions added at Tribal Governments ▪ Infrastructure projects, additional temporary construction jobs added 2025 through 2035				
YUKON-KOYUKUK CENSUS AREA					
Low: Economic Forecast	▪ School closure				
Medium: Economic Forecast	▪ Infrastructure projects, positions added at Tribal Governments ▪ Infrastructure projects, temporary construction jobs added 2025 through 2035				
High: Economic Forecast	▪ Infrastructure projects, additional positions added at Tribal Governments ▪ Infrastructure projects, additional temporary construction jobs added 2025 through 2035 ▪ Alaska LNG, permanent positions added in 2035, 2040, with drop in 2045 ▪ New mining operation in Yukon-Koyukuk Census Area, assume small operations crew based in region, 2035 to 2045				

Table 6 Scenario Definition Quick Reference

Scenario	Definition
Base Population Projections	Population increase or decrease at five-year intervals through 2045 based on historical population data.
Low Forecast Scenario	Subtracts from the base population projection for each region depending on possible economic drivers that would reduce a population (e.g., school closure), and adds to population considering certain or in-progress economic drivers, employing low end population increases, if a range for population change is provided.
Medium Forecast Scenario	Adds to base population projection depending on certain/in-progress economic drivers, employing mid-range population increases, if a range for population change is provided.
High Forecast Scenario	Adds to base population projection depending on certain/in-progress and possible economic drivers, employing high-end population increases, if a range for population change is provided

5.0 WHAT'S NEXT FOR PROJECTIONS & FORECASTS

Population projections and economic forecasts can provide a vision for how growth will occur. In long-range transportation planning, projections can be used to help identify future infrastructure needs to accommodate and support growth. The forecasts can also be used when identifying funding sources and implementation schedules. Future population projections and economic forecasts for specific subregions in the IATP area will require review of key information developed by regional planning groups or regional planning organizations (RPOs). A brief outline of planning groups in the IATP area and research sources and considerations for each subregion is provided below.

5.1 Fairbanks North Star Borough

FNSB is a second-class borough with limited transportation-related powers provided through service areas, including road construction, maintenance, and lighting. FAST Planning is the Metropolitan Planning Organization for urbanized areas of the FNSB, including the cities of North Pole and Fairbanks. The entire area (urbanized and rural) in the FNSB is included in the IATP. Key data sources, which will be regularly updated, include the FNSB Comprehensive Economic Development Strategy and planning documents from FAST Planning. For the IATP, updated data from Eielson Air Force Base and recent population projections and employment forecasts prepared for FAST Planning were key inputs for economic forecasts. The IATP forecasts also employed a similar methodology to that used in the FAST Planning memo, which used the entire FNSB as the study area and DOLWD population projections for the base population in FNSB.

5.2 Copper River Census Area/Copper Valley Regional Planning Organization

The Copper Valley Development Association (CVDA) is participating in an Alaska DOT&PF pilot program to establish RPOs across the state. The Copper River Valley RPO was the first RPO established in the state through a cooperative agreement with the State of Alaska signed in August 2022. CVDA expects to conduct population projections and economic forecasts, but a date for that work is not currently available. The CVDA is also updating the region's Comprehensive Economic Development Strategy, planned for the end of June 2024. Visitor data for the Wrangell - St. Elias National Park and Preserve is available through the National Park Service.

5.3 Denali Borough

The Denali Borough is a home rule borough, which does not have road powers. The Denali Borough does not have a current Comprehensive Economic Development Strategy (CEDS) or similar materials. The previous CEDS is from 2015, and the region is currently covered by the 2022 to 2027 Alaska Statewide CEDS. Only one potential project, new attractions and assets for visitors at the South Denali Visitor Center Complex, is noted in the statewide plan. Visitor data for Denali National Park is available through the National Park Service.

5.4 Southeast Fairbanks Census Area and Yukon-Koyukuk Census Area

Dena' Nena' Henash (Tanana Chiefs Conference, or TCC) is a non-profit, tribal consortium of 42 members, including 37 federally recognized tribes, in both the Southeast Fairbanks and Yukon-Koyukuk Census Areas. No other regional government or planning organization is in place in these census areas. Valuable insights into potential projects in these regions are found in the regularly updated TCC CEDS. Though population projections are not included in the CEDS plan, data on potential economic drivers was reviewed for the IATP and listed in *Table 2*.

McKINLEY RESEARCH GROUP, LLC
Formerly McDowell Group

3800 Centerpoint Drive, Suite 1100
Anchorage, AK 99503

To: DOWL

From: McKinley Research Group

Date: June 2, 2025

Re: Interior Alaska Transportation Plan Population Projections Update

Population projections were compiled as a component of the Interior Alaska Transportation Plan (IATP) process. These projections, in conjunction with economic forecasts and stakeholder input, informed plan development. The purpose of this memo is to describe updated population projections newly available for boroughs/census areas within the IATP region and assess if these changes impact the priority projects as outlined in the plan. The following sections describe the most recent available population projection factors and borough/census area and community-level projections.

Updated Population Projection Factors

Alaska Department of Labor and Workforce Development (DOLWD) population projections are released every two years. Population projections used in IATP development were based, in part, on borough/census area level projections developed for the 2021-2050 period. The most recent available projections cover the period of 2023-2050. Updated population projections differ from the projections originally used in IATP development in the following ways:

- Projections were updated to reflect a slower pace of population decline in the long term for the Copper River Census Area and Denali Borough.
- Fairbanks North Star Borough annual change projections were updated to reflect a low rate of population decline, in contrast to prior projections of slight positive growth through 2040.
- Southeast Fairbanks Census Area projections were updated to reflect future growth rather than decline.
- Matanuska-Susitna Borough and Yukon-Koyukuk Census Area expectations remain relatively unchanged from the prior population projection period.

Table 1. Projected Average Annual Population Rate of Change by Borough/Census Area, 2023-2050 Projections

Borough/Census Area	2023-2025	2025-2030	2030-2035	2035-2040	2040-2045
Copper River Census Area	-0.4%	0.3%	0.0%	-0.1%	-0.1%
Denali Borough	-1.2%	-0.7%	-0.8%	-0.9%	-1.0%
Fairbanks North Star Borough	-0.1%	-0.2%	-0.3%	-0.4%	-0.4%
Matanuska-Susitna Borough	0.7%	1.3%	1.2%	1.0%	0.7%
Southeast Fairbanks Census Area	0.3%	1.1%	0.7%	0.6%	0.5%
Yukon-Koyukuk Census Area	-0.1%	-0.9%	-0.9%	-1.0%	-1.0%

Source: Alaska Department of Labor and Workforce Development

Updated Population Projections

The following are projected population by borough/census area and select communities within the IATP region. These projections reflect several statewide demographic trends which are expected to continue over the next several decades. The impacts of a smaller working-age cohort and lower fertility rate are expected to impact the number of births in many regions, while the numbers of deaths increase due to a relatively large senior cohort. Net outmigration is expected to add to these demographic shifts, exerting downward pressure of population in the Interior, and Alaska overall.

Boroughs/census areas included in the IATP region have varied exposure to these demographic changes.

- Copper River Census Area's population has been largely stable over the last decade. This stability is expected to continue with only slight population change within this planning horizon.
- Over the last decade, population decline in the Fairbanks North Star Borough was consistent with statewide trends experienced during Alaska's recession (roughly 2015-2018). A low rate of annual decline related to continued outmigration is anticipated for the Interior's population center.
- Southeast Fairbanks Census Area is among few boroughs/census areas in Interior Alaska whose population is projected to increase between 2025 and 2045. The region is expected to benefit from a low level of in-migration.
- The demographic impact of increasing mortality and declining fertility is expected to impact the Yukon-Koyukuk Census Area and Denali Borough populations over the next several decades.
- Population projections for the Matanuska-Susitna Borough are significantly influenced by positive natural increase (births minus deaths) and net in-migration over the past decade. These trends are most pronounced in the Wasilla-Palmer core. The Interior

Transportation region includes only a small portion of the Mat-Su. Nevertheless, the growth of this adjacent region can impact travel into, and through the Interior.

Table 2. Community-Level Population Projections, 2025-2045

Borough/Census Area and Community	Population Projection					Change 2025-2045	
	2025	2030	2035	2040	2045	Number	%
Copper River Census Area	2,649	2,689	2,689	2,676	2,663	13	0.5%
Chisana CDP	0	0	0	0	0	0	-
Chistochina CDP	56	57	57	56	56	0	0.5%
Chitina CDP	109	110	110	110	109	1	0.5%
Copper Center CDP	294	298	298	297	295	1	0.5%
Gakona CDP	180	183	183	182	181	1	0.5%
Glennallen CDP	410	417	417	414	412	2	0.5%
Gulkana CDP	74	75	75	74	74	0	0.5%
Kenny Lake CDP	318	323	323	321	319	2	0.5%
McCarthy CDP	127	129	129	129	128	1	0.5%
Mendeltna CDP	46	47	47	46	46	0	0.5%
Mentasta Lake CDP	109	110	110	110	109	1	0.5%
Nabesna CDP	1	1	1	1	1	0	0.5%
Nelchina CDP	43	43	43	43	43	0	0.5%
Paxson CDP	16	16	16	16	16	0	0.5%
Silver Springs CDP	120	121	121	121	120	1	0.5%
Slana CDP	119	120	120	120	119	1	0.5%
Tazlina CDP	247	251	251	249	248	1	0.5%
Tolsona CDP	11	11	11	11	11	0	0.5%
Tonsina CDP	64	65	65	64	64	0	0.5%
Willow Creek CDP	195	198	198	197	196	1	0.5%
Denali Borough	1,594	1,539	1,478	1,413	1,344	-250	-16%
Fairbanks North Star Borough	97,230	96,261	94,826	92,945	91,100	-6,129	-6%
City of Fairbanks	31,207	30,896	30,435	29,831	29,240	-1,967	-6%
City of North Pole	2,402	2,378	2,342	2,296	2,250	-151	-6%
Matanuska-Susitna Borough*	117,127	124,941	132,620	139,384	144,332	27,205	23%
Lake Louise CDP	41	44	47	49	51	10	23%
Southeast Fairbanks Census Area	7,099	7,498	7,765	8,000	8,202	1,103	16%
Alcan Border CDP	29	31	32	33	34	5	16%
Big Delta CDP	422	446	462	476	488	66	16%
Chicken CDP	13	14	14	15	15	2	16%
Delta Junction city	980	1,035	1,072	1,104	1,132	152	16%

Borough/Census Area and Community	Population Projection					Change 2025-2045	
	2025	2030	2035	2040	2045	Number	%
Deltana CDP	2,499	2,640	2,734	2,817	2,888	388	16%
Dot Lake CDP	20	21	22	23	23	3	16%
Dot Lake Village CDP	39	41	43	44	45	6	16%
Dry Creek CDP	53	56	58	60	61	8	16%
Eagle City	73	77	80	83	85	11	16%
Eagle Village CDP	34	36	37	38	39	5	16%
Fort Greely CDP	341	360	373	384	394	53	16%
Healy Lake CDP	14	15	15	16	16	2	16%
Northway CDP	235	248	257	264	271	36	16%
Tanacross CDP	134	142	147	151	155	21	16%
Tetlin CDP	152	161	167	172	176	24	16%
Tok CDP	1,339	1,414	1,464	1,509	1,547	208	16%
Whitestone CDP	72	76	79	81	83	11	16%
Yukon-Koyukuk Census Area*	5,049	4,826	4,613	4,386	4,171	-877	-17%
Arctic Village CDP	139	133	127	121	115	-24	-17%
Beaver CDP	50	48	46	43	41	-9	-17%
Birch Creek CDP	30	29	27	26	25	-5	-17%
Central CDP	61	58	56	53	50	-11	-17%
Chalkyitsik CDP	49	47	45	43	40	-9	-17%
Circle CDP	78	74	71	68	64	-14	-17%
Coldfoot CDP	27	26	25	23	22	-5	-17%
Fort Yukon City	492	470	449	427	406	-85	-17%
Four Mile Road CDP	33	32	30	29	27	-6	-17%
Lake Minchumina CDP	28	27	26	24	23	-5	-17%
Livengood CDP	17	16	16	15	14	-3	-17%
Manley Hot Springs CDP	95	91	87	82	78	-16	-17%
Minto CDP	162	155	148	141	134	-28	-17%
Nenana city	381	364	348	331	314	-66	-17%
Rampart CDP	48	46	44	42	40	-8	-17%
Stevens Village CDP	19	18	17	16	16	-3	-17%
Tanana city	223	213	204	194	184	-39	-17%
Venetie CDP	188	180	172	163	155	-33	-17%

Source: Alaska Department of Labor and Workforce Development
* Matanuska-Susitna Borough and Yukon-Koyukuk Census Area population includes communities outside the IATP area.

Population Projection Update Implications for IATP

The total resident population of the IATP study area is anticipated to decline by about 5% between 2024 and 2045, a loss of about 5,729. This projection is in contrast to resident population projections previously prepared for the IATP, which indicated a 3% increase in regional population. This change in the trajectory of the Interior population is driven largely by updated expectations for the Fairbanks North Star Borough. This change in population outlook is not expected to impact the Transportation Project Needs List or the Stakeholder Identified High Interest Needs.

Table 3. Change in IATP Population Projections, 2024-2045

Projection Period	2024 Population	Projected 2045 Population	2024-2045 Change	Percentage Change
2021-2050 Projections	110,839	113,682	+2,843	+3%
2023-2050 Projections	110,839	105,110	-5,729	-5%

Source: Alaska Department of Labor and Workforce Development and McKinley Research Group calculations.

Section Two

Aviation Transportation Conditions, Issues, and Trends

TABLE OF CONTENTS

Table of contents ii

Acronyms v

1.0 Introduction 1

1.1 Overview of Airports in IATP Area 1
1.2 Changes Since the 2010 IATP 3

2.0 Existing Conditions 7

2.1 IATP Airport Classifications & Roles 7
2.2 IATP Airports by Ownership 10
2.3 IATP Airports Comparison 12
2.4 Inventory 13
2.5 Current & Base Year Activity 22
2.6 Airspace 26
2.7 Existing Routes 28
2.8 Intermodal Connection Points 30
2.9 Aircraft Fleet Operating in IATP Region 31
2.10 AIP Funding History 33
2.11 Operational Costs 35
2.12 Security 37

3.0 Aviation Forecasts & Critical Aircraft 38

3.1 Introduction 38
3.2 IATP Area in Forecasting Context 38
3.3 Data Sources 40
3.4 Base Year (2022) Estimates 42
3.5 Base Year Critical Aircraft 48
3.6 Historical Activity Trends & Previous Forecasts 49
3.7 Socioeconomic Trends 59
3.8 Forecast Development 66
3.9 IATP Aviation Activity Forecasts 69
3.10 Critical Aircraft Considerations 72
3.11 Potential Impacts on Regional Facilities from Possible Trends of New Technology 73

4.0 Aviation System Issues & Needs 75

4.1 Introduction 75
4.2 Investment & Development Goals 75
4.3 Airport Roles & Classifications 75
4.4 Airport Service Level Changes 76
4.5 Improving Safety 79
4.6 Infrastructure 79
4.7 Amenities 83
4.8 Airspace & Navigation 83
4.9 Weather Reporting & Communication 87
4.10 Bypass Mail Program 95
4.11 Wildland Firefighting Support 95
4.12 UAS 97
4.13 Funding Landscape 97
4.14 Other 98

5.0 KEY ISSUES & RECOMMENDATIONS 100

5.1 Administrative Recommendations 100
5.2 Programmatic & Funding Recommendations 100
5.3 Policy & Planning Engagement 101
5.4 Recommended Plans & Studies 101
5.5 Recommended Capital Projects 102

6.0 APPENDICES 104

Appendix 1: Airport Improvements Recommended by *2010 IATP* 105
Appendix 2: AASP & NPIAS Classifications 107
Appendix 3: Summary of IATP Airports by Ownership, AASP Classification, On/Off Road Status, and Seaplane Base Status 109
Appendix 4: AASP Performance Measure Report Cards 110
Appendix 5: Airport Forecasts Data 117
Appendix 6: Stakeholder Input Used in IATP Update 118
Appendix 7: Broadband Connectivity at IATP Airports 121
Appendix 9: References 133

FIGURES

Figure 1. IATP Region Airports 2
Figure 2. IATP Airports by AASP Classification 8
Figure 3. Alaska Public-Use Airports by AASP Classification 10
Figure 4. Airport Locations and Ownership 11
Figure 5. Existing Military Operations Areas in Alaska. Adapted from: J-BER Special Use Airspace Map 27
Figure 6. Scheduled Air Service Route Map 29
Figure 7. IATP Airports by On/Off Road Status 30
Figure 8. Scheduled Air Service Routes 39
Figure 9. IATP Region Airports by Borough/Census Area 46
Figure 10. Population Percent Change Trends, 2022-2040, DOLWD 61
Figure 11. DOLWD Total Annual Employment – Interior Region 61
Figure 12. National Parks/Preserves in the IATP Region 63
Figure 13. Denali National Park & Preserve Visitors 2011-2022 64
Figure 14. Wrangell-St. Elias National Park & Preserve Visitors 2011-2022 64
Figure 15. Yukon-Charley Rivers National Preserve Visitors 2011-2022 65
Figure 16. Alaska Native Claims Settlements Act (ANCSA) Regions (Source: ANCSA Regional Association) 66
Figure 17. Personal Consumption Expenditure Price Index (2022-2040). Source: U.S. Bureau of Economic Analysis (2023) 66
Figure 18. Alaska T-Routes (Source: FAA, https://www.faa.gov/alaska) 87
Figure 19. Alaska Locations of Automated Weather Reporting Stations 89
Figure 20. Existing and Proposed Weather Station Coverage in IATP Region 91
Figure 21. IATP Weather Camera Locations 92
Figure 22. Remote Automatic Weather Stations. Source: 2016 AASP Weather Fact Sheet 94
Figure 23. State of Alaska Public-Use Airports and Wildfires 96

TABLES

Table 1. Summary of IATP Airport Ownership & Classifications 3
Table 2. Comparison of 2010 & 2023 IATP Airport Classifications 4
Table 3. Summary of IATP Airports by AASP Classification 9
Table 4. Summary of IATP Airports by Ownership 12
Table 5. IATP Small Hub Airports – Runway Characteristics 14
Table 6. IATP Small Hub Airports – Weather, NAVAIDs, & Services 14
Table 7. IATP Regional Hub Airports – Runway Characteristics 14
Table 8. IATP Regional Hub Airports – Weather, NAVAIDs, & Services 14
Table 9. IATP Community Off-Road Airports – Runway Characteristics 15
Table 10. IATP Community Off-Road Airports – Weather, NAVAIDs, & Services 15
Table 11. IATP Community On-Road Airports – Runway Characteristics 16
Table 12. IATP Community On-Road Airports – Weather, NAVAIDs, & Services 17
Table 13. IATP Local NPIAS High-Activity Airports – Runway Characteristics 18
Table 14. IATP Local NPIAS High-Activity Airports – Weather, NAVAIDs, & Services 18
Table 15. IATP Local NPIAS Low-Activity Airports – Runway Characteristics 18

5.1 Administrative Recommendations 100
5.2 Programmatic & Funding Recommendations 100
5.3 Policy & Planning Engagement 101
5.4 Recommended Plans & Studies 101
5.5 Recommended Capital Projects 102

6.0 APPENDICES 104

Appendix 1: Airport Improvements Recommended by *2010 IATP* 105
Appendix 2: AASP & NPIAS Classifications 107
Appendix 3: Summary of IATP Airports by Ownership, AASP Classification, On/Off Road Status, and Seaplane Base Status 109
Appendix 4: AASP Performance Measure Report Cards 110
Appendix 5: Airport Forecasts Data 117
Appendix 6: Stakeholder Input Used in IATP Update 118
Appendix 7: Broadband Connectivity at IATP Airports 121
Appendix 9: References 133

FIGURES

Figure 1. IATP Region Airports 2
Figure 2. IATP Airports by AASP Classification 8
Figure 3. Alaska Public-Use Airports by AASP Classification 10
Figure 4. Airport Locations and Ownership 11
Figure 5. Existing Military Operations Areas in Alaska. Adapted from: J-BER Special Use Airspace Map 27
Figure 6. Scheduled Air Service Route Map 29
Figure 7. IATP Airports by On/Off Road Status 30
Figure 8. Scheduled Air Service Routes 39
Figure 9. IATP Region Airports by Borough/Census Area 46
Figure 10. Population Percent Change Trends, 2022-2040, DOLWD 61
Figure 11. DOLWD Total Annual Employment – Interior Region 61
Figure 12. National Parks/Preserves in the IATP Region 63
Figure 13. Denali National Park & Preserve Visitors 2011-2022 64
Figure 14. Wrangell-St. Elias National Park & Preserve Visitors 2011-2022 64
Figure 15. Yukon-Charley Rivers National Preserve Visitors 2011-2022 65
Figure 16. Alaska Native Claims Settlements Act (ANCSA) Regions (Source: ANCSA Regional Association) 66
Figure 17. Personal Consumption Expenditure Price Index (2022-2040). Source: U.S. Bureau of Economic Analysis (2023) 66
Figure 18. Alaska T-Routes (Source: FAA, https://www.faa.gov/alaska) 87
Figure 19. Alaska Locations of Automated Weather Reporting Stations 89
Figure 20. Existing and Proposed Weather Station Coverage in IATP Region 91
Figure 21. IATP Weather Camera Locations 92
Figure 22. Remote Automatic Weather Stations. Source: 2016 AASP Weather Fact Sheet 94
Figure 23. State of Alaska Public-Use Airports and Wildfires 96

TABLES

Table 1. Summary of IATP Airport Ownership & Classifications 3
Table 2. Comparison of 2010 & 2023 IATP Airport Classifications 4
Table 3. Summary of IATP Airports by AASP Classification 9
Table 4. Summary of IATP Airports by Ownership 12
Table 5. IATP Small Hub Airports – Runway Characteristics 14
Table 6. IATP Small Hub Airports – Weather, NAVAIDs, & Services 14
Table 7. IATP Regional Hub Airports – Runway Characteristics 14
Table 8. IATP Regional Hub Airports – Weather, NAVAIDs, & Services 14
Table 9. IATP Community Off-Road Airports – Runway Characteristics 15
Table 10. IATP Community Off-Road Airports – Weather, NAVAIDs, & Services 15
Table 11. IATP Community On-Road Airports – Runway Characteristics 16
Table 12. IATP Community On-Road Airports – Weather, NAVAIDs, & Services 17
Table 13. IATP Local NPIAS High-Activity Airports – Runway Characteristics 18
Table 14. IATP Local NPIAS High-Activity Airports – Weather, NAVAIDs, & Services 18
Table 15. IATP Local NPIAS Low-Activity Airports – Runway Characteristics 18

Table 16. IATP Local NPIAS Low-Activity Airports – Weather, NAVAIDs, & Services 18
Table 17. IATP Local Non-NPIAS Airports – Runway Characteristics 19
Table 18. IATP Local Non-NPIAS Airports – Weather, NAVAIDs, & Services 19
Table 19. IATP Landing Strips – Runway Characteristics 21
Table 20. IATP Landing Strips – Weather, NAVAIDs, & Services 21
Table 21. IATP Hub Airports – Base Year Activity 22
Table 22. IATP Community Airports – Base Year Activity 22
Table 23. IATP Local Airports – Base Year Activity 24
Table 24. IATP Landing Strips – Base Year Activity 25
Table 25. Summary of Base Year Activity and Percentages of Total by AASP Classification 26
Table 26. Air Carriers Currently Operating in the IATP Region 32
Table 27. AIP Investment in IATP Airports (Nonprimary Facilities Only) 34
Table 28. Operational Costs & Revenue of DOT&PF-Owned IATP Airports 36
Table 29. Information Sources, Availability, & Limitations for IATP Aviation Forecasts 40
Table 30. Forecast Data Categories & How Statistics Were Derived 43
Table 31. IATP Airports – Base Year Airport Activity Estimates by Airport and by Borough/Census Area 44
Table 32. Base Year Operations Summarized by Borough/Census Area 47
Table 33. Base Year Passengers, Freight, & Mail Summarized by Borough/Census Area 47
Table 34. Air Carriers Currently Operating in the IATP Region 48
Table 35. Historical Enplanement Trends by Borough/Census Area, 2011-2022 50
Table 36. Historical Air Cargo Trends by Borough/Census Area, 2013-2022 51
Table 37. Historical Mail Volume Trends by Borough/Census Area, 2013-2022 52
Table 38. Historical & Forecasted Based Aircraft Trends from the TAF, 2011-2040 52
Table 39. Terminal Area Forecast for IATP Region 2022-2040 – All 34 Reporting Airports 53
Table 40. Terminal Area Forecast for IATP Region 2022-2040 – Excluding Fairbanks International 54
Table 41. Terminal Area Forecast Year-Over-Year Average Annual Growth Rates by Borough/Census Area 54
Table 42. 2010 IATP Enplaned Passenger Forecasts 55
Table 43. 2010 IATP Cargo Forecasts (pounds) 56
Table 44. AASP Forecasts, 2008-2030, Average Annual Rates of Change of Aviation Activity 56
Table 45. UTAPS Forecasts for Tanacross and Tok Junction Airports, 2019-2045 58
Table 46. Gulkana Airport (GKN) Draft Forecasts, 2019-2045 58
Table 47. Nenana Municipal Airport (ENN) Forecasts, 2021-2031 58
Table 48. Alaska Division of Community and Regional Affairs Certified Population Counts 2011-2022 60
Table 49. Alaska Department of Labor and Workforce Development Population Projections 2021-2040 60
Table 50. Forecast Percentage Metrics used for Smoothing 68
Table 51. IATP Region Airport Forecast Levels and Growth Rates, Base Year 2022 71
Table 52. Base Year (2022) Critical Aircraft for Interior Alaska Airports 72
Table 53. Critical Aircraft Design Group Forecast, Interior Alaska, 2022-2040 73
Table 54. IATP Airports Needing Longer Runways to Meet AASP Minimums or High-Interest Community Goals 80
Table 55. IATP Airports Needing Runway Surface Improvements 80
Table 56. IATP Airport Lighting Improvements Needed 82
Table 57. Instrument Approach Procedures (IAPs) at IATP Airports 85
Table 58. Aviation Weather Reporting Systems in IATP Region 90
Table 59. IATP Mail Hub & Bush Points 95
Table 60. 2010 IATP Airport Capital Improvement Recommendations 105
Table 61. IATP Region Airport Forecast Average Annual Compound Growth Rates – High, Medium, & Low Scenarios 117
Table 62. Broadband Connectivity at IATP Airports 121

ACRONYMS

AAC	Aircraft Approach Category
AAM	Advanced Air Mobility
AASP	Alaska Aviation System Plan
AC	Advisory Circular
ACAIS	Air Carrier Activity Information System
ACIP	Airport Capital Improvement Program
ACMAC	Alaska Civil Military Aviation Council
ACUASI	Alaska Center for UAS Integration
ADF&G	Alaska Department of Fish and Game
ADG	Airplane Design Group
ADIP	Airport Data and Information Portal
AFSS	Automated Flight Service Station
AIP	Airport Improvement Program
AK	Alaska
AOPA	Aircraft Owners and Pilots Association
A-Paid	Aviation Paid Weather Observers
APEB	Aviation Project Evaluation Board
ARPA	American Rescue Plan Act
ARRA	American Recovery and Reinvestment Act of 2009
ARTCC	Air Route Traffic Control Center
ASOS	Automated Surface Observing Systems
AST	Alaska State Troopers
AWOS	Automated Weather Observing Systems
BIL	Bipartisan Infrastructure Law
BLM	US Bureau of Land Management
BLM AFS	Bureau of Land Management Alaska Fire Service
BTS	Bureau of Transportation Statistics
CAP	Civil Air Patrol
CARES	Coronavirus Aid, Relief, and Economic Security Act
CBP	U.S. Customs and Border Protection
CPE	Consultant's Preferred Estimate
CRRSAA	Coronavirus Response and Relief Supplemental Appropriations Act of 2021
CS	Commercial Service
DCRA	Division of Community and Regional Affairs
DNR	Department of Natural Resources
DOF	State of Alaska Department of Natural Resources Division of Forestry and Fire Protection
DOLWD	Department of Labor and Workforce Development
DOT&PF	Department of Transportation and Public Facilities
EAS	Essential Air Service
eSRS	Enhanced Special Reporting Service
FAA	Federal Aviation Administration
FAASI	FAA Alaska Aviation Safety Initiative
FAI	Fairbanks International Airport

FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FSS	Flight Service Stations
GA	General Aviation
GPS	Global Positioning System
HIRL	High Intensity Runway Lights
IAP	Instrument Approach Procedures
IATP	Interior Alaska Transportation Plan
IFR	Instrument Flight Rules
IIJA	Infrastructure Investment and Jobs Act
ILS	Instrument Landing System
LRDR	Long-Range Discrimination Radar
LRTP	Long Range Transportation Plan
M&O	Maintenance and Operations
MEAs	Minimum En Route Altitudes
Medevac	Medical evacuation
MIRL	Medium Intensity Runway Lights
MOAs	Military Operating Areas
NAVAIDs	Navigational Aids
NDB	Non-Directional Beacon
NIFC	National Interagency Fire Center
NPI	Non-Precision Instrument
NPIAS	National Plan of Integrated Airport Systems
NPS	National Park Service
NWS	National Weather Service
PCE	Personal Consumption Expenditure
PCI	Pavement Condition Index
RAWS	Remote Automated Weather Stations
RDC	Runway Design Code
RNAV	Area Navigation
SAWRS	Supplementary Aviation Weather Reporting Station
SFS	Space Force Station
SREB	Snow Removal Equipment Building
SUA	Special Use Airspace
SUAIS	Special Use Airspace Information Service
TAF	Terminal Area Forecasts
TSA	Transportation Security Administration
UAF	University of Alaska Fairbanks
UAS	Unmanned Aircraft Systems
UAV	Unmanned Aerial Vehicles
USD	United States Dollars
USDOT	United States Department of Transportation
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USPS	United States Postal Service
UTAPS	Upper Tanana Airport Planning Study

VFR	Visual Flight Rules
VOR	Very High-Frequency Omnidirectional Radio Range
VORTAC	Very High-Frequency Omnidirectional Radio Range Tactical Air Navigation
VWOS	Visual Weather Observation System

1.0 INTRODUCTION

The airports in the *Interior Alaska Transportation Plan* (IATP) area are essential components of this region's robust, multi-modal transportation system. Although many communities in the IATP area are accessible by road, this entire region is still geographically remote from major population centers and services, and huge swaths of land within the region remain roadless. The airports serve a wide range of important roles in this region, facilitating activity such as:

- Community access and support
- Wildland firefighting
- Tourism, hunting, and guiding
- Medevac operations
- Medical care support
- Border crossings
- Military operations and training
- Government services
- Access to national parks and conservation areas

Each airport in the plan area holds a distinct support role for its community or specific geographical setting. The IATP aviation system supports the air transportation corridors that connect this region with the rest of Alaska, with Canada and the contiguous United States, and with the rest of the globe.

1.1 Overview of Airports in IATP Area

There are 62 airports included in the IATP study area (*Figure 1*). These 62 airports are the public-use facilities registered with the FAA. There are several military facilities, numerous registered private-use facilities, and countless more unregistered airstrips in the IATP area, but consideration of such facilities falls outside the intent of this plan. It is important to note that many of the registered public-use facilities serve as launching points to the uncounted backcountry landing strips, gravel bars, lakes, and rivers that provide people access to remote, roadless portions of the region.

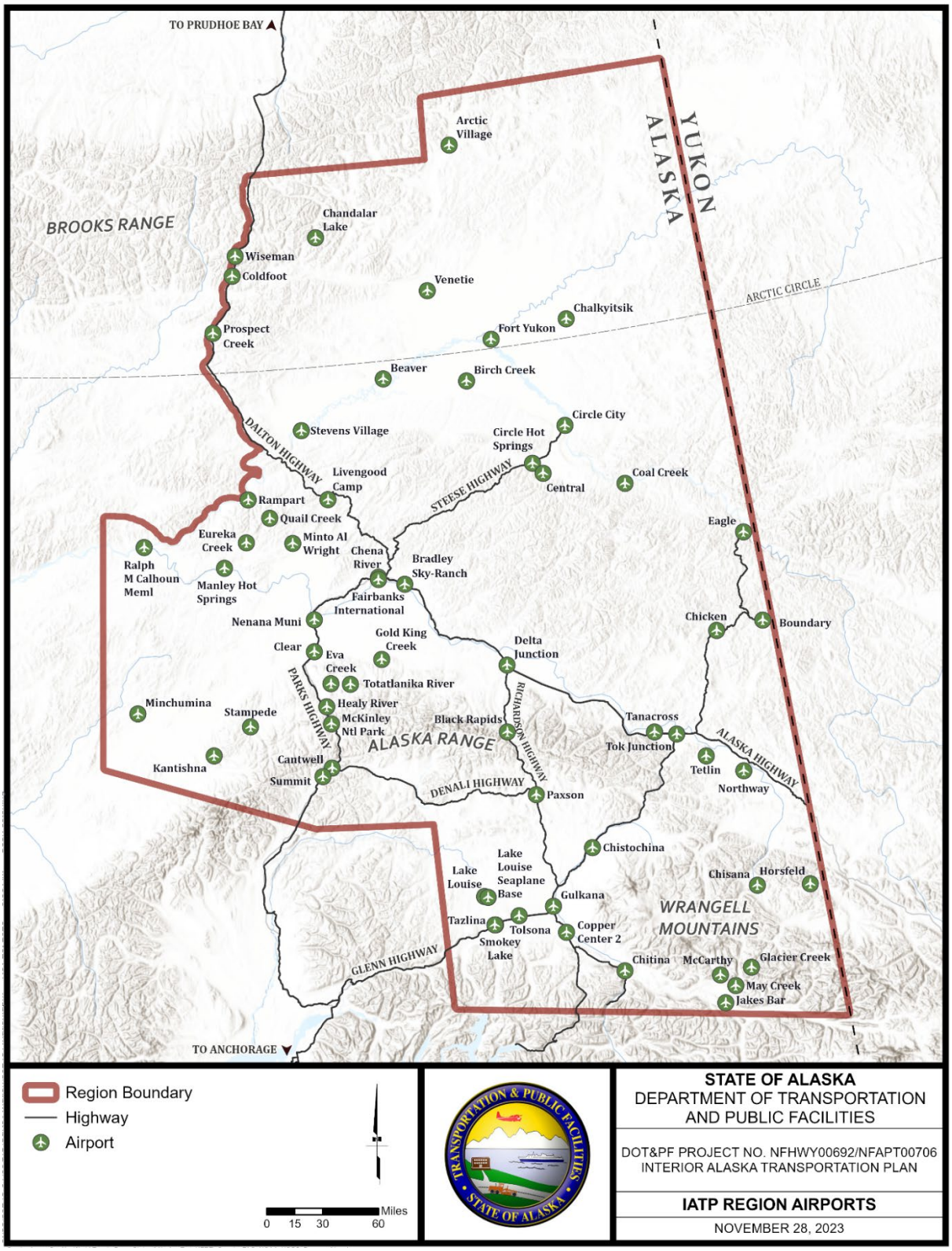


Figure 1. IATP Region Airports

The IATP airports are as diverse as the communities and locations they serve, ranging considerably by size, ownership, classification, and use. The majority (39) of the airports are owned by the Alaska Department of Transportation and Public Facilities (DOT&PF), while the remaining 23 are owned by a wide range of public and private entities. Forty (40) of the airports are road accessible, and 22 are located in places off the contiguous road system. A summary of ownership and classification (according to the *Alaska Aviation System Plan* (AASP)) is shown in Table 1.

Table 1. Summary of IATP Airport Ownership & Classifications

IATP Airport Ownership	IATP AASP Airport Classifications
• 39 DOT&PF	• 1 Small Hub
• 4 Municipal/Local Government	• 1 Regional Hub
• 5 National Park Service (NPS)	• 6 Community Off-Road
• 3 Bureau of Land Management (BLM)	• 11 Community On-Road
• 2 Department of Natural Resources (DNR)	• 1 Local NPIAS High-Activity
• 1 Alaska Department of Fish & Game (ADF&G)	• 18 Local NPIAS Low-Activity
• 4 Private	• 6 Local Non-NPIAS
• 4 Public Domain	• 18 Unclassified Landing Strips

1.2 Changes Since the 2010 IATP

The previous IATP was published in 2010. Since its publication, there have been several significant changes that are worth noting. Many of the changes will be discussed in greater detail in the *Existing Conditions* sections, but this summary of changed conditions puts the overall aviation analysis in better context.

1.2.1 Public-Use Airports in the IATP Region

The *2010 IATP* considered 68 airports in its area. Since that time, one facility has changed its status to "Private-Use" and five of the airports have been decommissioned. Allen Army Airfield (aka Allen AAF or BIG) was previously registered as a Public-Use facility. The military changed the status of Allen AAF to Private-Use in 2013. Decommissioned facilities are ones that were previously registered with the Federal Aviation Administration (FAA) but have been removed from registration and no longer appear in aviation publications, charting, or the AASP database. The five decommissioned facilities are Clear Sky Lodge (CLF), Clearwater (Z86), Porcupine Creek (PCK), Road Commission NR 1 (0Z2), and Tok 2 (TKJ). These landing strips were previously registered privately owned or public domain facilities that have been removed from FAA's registered facilities list for various reasons, including unusable runway conditions, owner choice, or for reasons unknown. These five facilities are no longer considered part of the public aviation system and are not included in this IATP update.

1.2.2 Airport Classifications

Airport classifications have changed considerably since 2010. Airports are classified by both the FAA's National Plan of Integrated Airport Systems (NPIAS) and the DOT&PF's AASP. Both of these classification systems have been modified more than once since 2010, which has implications to how the IATP airports are considered for funding and development. A high-level comparison of the 2010 classifications versus current classifications is shown in Table 2. The implications of these classifications are discussed further in the *Existing Conditions* and *Issues and Needs* sections. However, one can see that both the NPIAS and AASP systems have expanded the number of different classifications, which provides more specific performance and development goals for airports within each classification.

Table 2. Comparison of 2010 & 2023 IATP Airport Classifications

2010 NPIAS Classifications	2023 NPIAS Classifications
• 1 Primary Commercial Service	• 1 Primary Commercial Service – Small Hub
• 2 Nonprimary Commercial Service	• 2 Nonprimary Commercial Service – Local
• 34 General Aviation	• 2 General Aviation – Local
• 31 non-NPIAS	• 25 General Aviation – Basic
	• 4 General Aviation – Unclassified
	• 28 non-NPIAS
2010 AASP Classifications	**2023 AASP Classifications**
• 4 Regional	• 1 Small Hub
• 18 Community	• 1 Regional Hub
• 46 Local	• 6 Community Off-Road
	• 11 Community On-Road
	• 1 Local NPIAS High-Activity
	• 18 Local NPIAS Low-Activity
	• 6 Local Non-NPIAS
	• 18 Landing Strips

1.2.3 FAA Automated Flight Service Stations

The FAA Flight Service, at one time divided the State into areas largely defined by river valleys, for the benefit of general aviation pilots. The *2010 IATP* organized and presented airport information according to these FAA-designated areas, once published on the FAA's Automated Flight Service Station (AFSS) website. These geographical designations are no longer used by the FAA, and they cannot be found in any current FAA publication. The formerly FAA-designated areas identified as the Upper Yukon Valley, Tanana Valley, Copper River Basin, Susitna Valley, Kuskokwim Valley, and Koyukuk Valley will not be used or referenced in this IATP update, as the designations appear to be obsolete.

Flight Service Stations (FSS) are air traffic facilities that provide services to pilots such as pilot aeronautical and weather briefings, flight plan processing, en-route flight advisories, search and rescue services, and assistance to lost aircraft and aircraft in emergency situations. The FAA went through a national flight service station transition in the years just preceding the *2010 IATP*, during which many flight service stations nationwide were closed and decommissioned, and the services and personnel were moved to a much smaller number of automated flight service stations (AFSS). Flight Service Stations have seen additional consolidation and modernization since then, and only three AFSS still remain in Alaska – in Fairbanks, Kenai, and Juneau.

1.2.4 Weather Reporting, Instrument Procedures, & Navigational Aids

In the *2010 IATP*, 17 of the region's airports had weather reporting stations:

- Three Automated Weather Observing Systems (AWOS)
- Seven Automated Surface Observing Systems (ASOS)
- Six Aviation Paid Weather Observers (A-Paid)
- One Supplementary Aviation Weather Reporting Station (SAWRS)

There are currently only 13 airports with weather reporting stations in the IATP region. Although three additional AWOS units have been installed since 2010, the seven A-Paid and SAWRS weather reporting stations no longer exist, creating a net loss of four airports with weather reporting. The A-Paid program, previously supported with FAA funding, is almost entirely gone. The 2016 AASP *Aviation Weather Reporting in Alaska* white paper reports that, between 2011 and 2013, eighteen A-Paid observer sites were closed in the Interior and Southcentral portions of the state. Presently, there are no A-Paid positions listed in the IATP region.

When the *2010 IATP* was published, only eight facilities in the area had weather cameras. The FAA Form 5010 Airport Master Records reflect that 23 facilities currently have weather cameras. These cameras provide advisory weather information to pilots and have become an invaluable tool in flight planning decision-making.

The *2010 IATP* listed 14 airports as having Instrument Approach Procedures (IAPs) developed. There are currently 17 airports in the IATP region with published IAPs. Five airports have had IAPs developed since 2010 (Central, Eagle, Healy River, Manley Hot Springs, and Venetie). However, one airport (Stevens Village) no longer has a published IAP, and although Allen AAF has an IAP – which was counted in the *2010 IATP* – it is no longer counted due to the facility's change to Private-Use.

1.2.5 Major Airport Projects and Funding

The *2010 IATP* recommended capital improvements totaling approximately $185 million in 2010 dollars. Since that time, only about $62.5 million in has been spent on airport improvements in the region, and much of the work recommended by the *2010 IATP* remains unaccomplished (reference *Appendix 1: Airport Improvements Recommended by 2010 IATP* for details). Funding for the major work that has been accomplished has come from the Airport Improvement Program (AIP) and other special funding, such as the American Recovery and Reinvestment Act of 2009 (ARRA).

Major airport projects completed since the *2010 IATP* evaluation was conducted include:

- Fort Yukon (FYU) – runway, taxiway, and apron improvements and Snow Removal Equipment Building (SREB) accomplished with a combination of AIP and ARRA funds
- Lake Louise (Z55) – reconstructed and reopened shortly after the *2010 IATP* with AIP funding
- Livengood Camp (4AK) – major improvements, including runway extension from 1,425 ft to 3,000 ft sometime between 2012 and 2014, completed with State of Alaska Deferred Maintenance funding
- Manley Hot Springs (MLY) – full reconstruction in 2016/2017 with AIP funding
- Minto Al Wright (51Z) – reconstructed with a longer, wider, lighted runway shortly after the *2010 IATP* with AIP funding
- Northway (ORT) – reconstruction was not a recommendation of the *2010 IATP*, but the airport suffered major damage from the 2002 Denali Fault Earthquake, and Federal Emergency Management Agency (FEMA) funding was used to restore Northway to pre-earthquake conditions
- Stevens Village (SVS) – new airport completed (was under construction at the time of the *2010 IATP*)

The airport improvements recommended in the *2010 IATP* are included in *Appendix 1: Airport Improvements Recommended by 2010 IATP*, with remarks about which work has been accomplished since that time. A significant portion of the work recommended in 2010 is still needed and is recommended once again by this IATP update.

1.2.6 Unmanned Aircraft Systems (UAS)

The dawn of Unmanned Aircraft Systems (UAS) in Alaska lit upon the Interior region first. The growth of UAS research, use, and development has been nearly explosive, and the implications of this technology and its applications are not fully characterized due to its rapidly changing and expanding nature.

Alaska has one of six UAS test sites in the U.S., a program run by the Alaska Center for UAS Integration (ACUASI) from the University of Alaska Fairbanks (UAF). This program has been in existence since 2001, and it was selected by the FAA as one of the six test sites in the nation in December 2013. ACUASI is very active in the IATP region with testing and furthering UAS capabilities and opportunities in Alaska and integrating that into the National Airspace System as part of the FAA's Beyond program. The FAA has approved ACUASI as a Part 135 operator to test the process of getting these unmanned

systems through type certification, to figure out which procedures need to be refined or waived, and to test out use of the systems. ACUASI has worked to bring more industry into Alaska, as companies all over the world are actively seeking out places to test their systems.

There are plenty of personal, recreational UAS operating across the state, but there has been a surge in use for survey, remote sensing, and other significant commercial and agency applications. The DOT&PF has been working with other state departments, such as Alaska Department of Fish and Game (ADF&G), Department of Natural Resources (DNR), and Department of Public Safety, on the use and applications of UAS. The collective work of these agencies has realized many benefits that UAS provide in terms of safety, efficiencies, and cost savings. The DOT&PF's Division of Statewide Aviation has become the management agency for UAS owned by state agencies. This has given DOT&PF resources to maintain and manage the UAS and provides DOT&PF oversight of the UAS and their use. Per the Spring 2021 AASP newsletter, UAS are being tested at Alaska airports for applications such as airport and runway inspection.

The DOT&PF Division of Statewide Aviation reported in March of 2023 that Alaska had 3,241 registered remote pilots, compared with 9,428 manned aviation pilots. The number of registered remote pilots in May of 2021 (per ACUASI) was 1,400. In just two years, the number of registered remote pilots has more than doubled. The DOT&PF reports 9,095 registered unmanned aircraft, compared with 8,668 registered manned aircraft, in March of 2023. The registered number of unmanned aircraft now exceeds the number of registered manned aircraft in Alaska.

The implications of UAS technology and its applications are not fully understood or accounted for within the context of airport and aviation planning. Thus, it is important to recognize that this technology exists, that it is active and developing within the IATP area, and that it should be considered in plan recommendations.

2.0 EXISTING CONDITIONS

The 62 public-use aviation facilities in the IATP region are a diverse collection of airports in terms of ownership, classification, use, and intramodality. The airports serve many purposes, providing primary access to communities off the road system, supporting tourism, recreation, and hunting, supporting wildland firefighting, providing alternative landing sites during inclement weather, and facilitating both emergency and routine medical transportation. The IATP region borders Canada, and facilities near the border serve as the customs clearance gateway for small aircraft entering Alaska. The type of aircraft operating in the IATP area also ranges widely, with small bush aircraft, commuter aircraft, military aircraft, helicopters, wildland firefighting support aircraft, UAS, passenger jets, and even wide-body jets traveling through this region's airspace and using its facilities.

2.1 IATP Airport Classifications & Roles

Figure 2 shows the 62 airports in the IATP region, designated by their current AASP classification (as classified in the May 2022 *AASP Classifications & Performance Measures* report). Table 3 lists the airports within each classification, for reference. When we consider the existing conditions and needs of the IATP airport system, grouping airports by AASP classification proves the most useful way of evaluating such a large and diverse set of facilities. The AASP considers the unique and important roles served by the state's widely diverse airports, providing a classification system more complementary to serving the needs of Alaska than the national classification system. A summary of the AASP and NPIAS airport classifications is provided in *Appendix 2: AASP & NPIAS Classifications*, and more detailed information can be found by referencing the May 2022 *AASP Classifications & Performance Measures* report and the *2023-2027 NPIAS Narrative*, both available online.

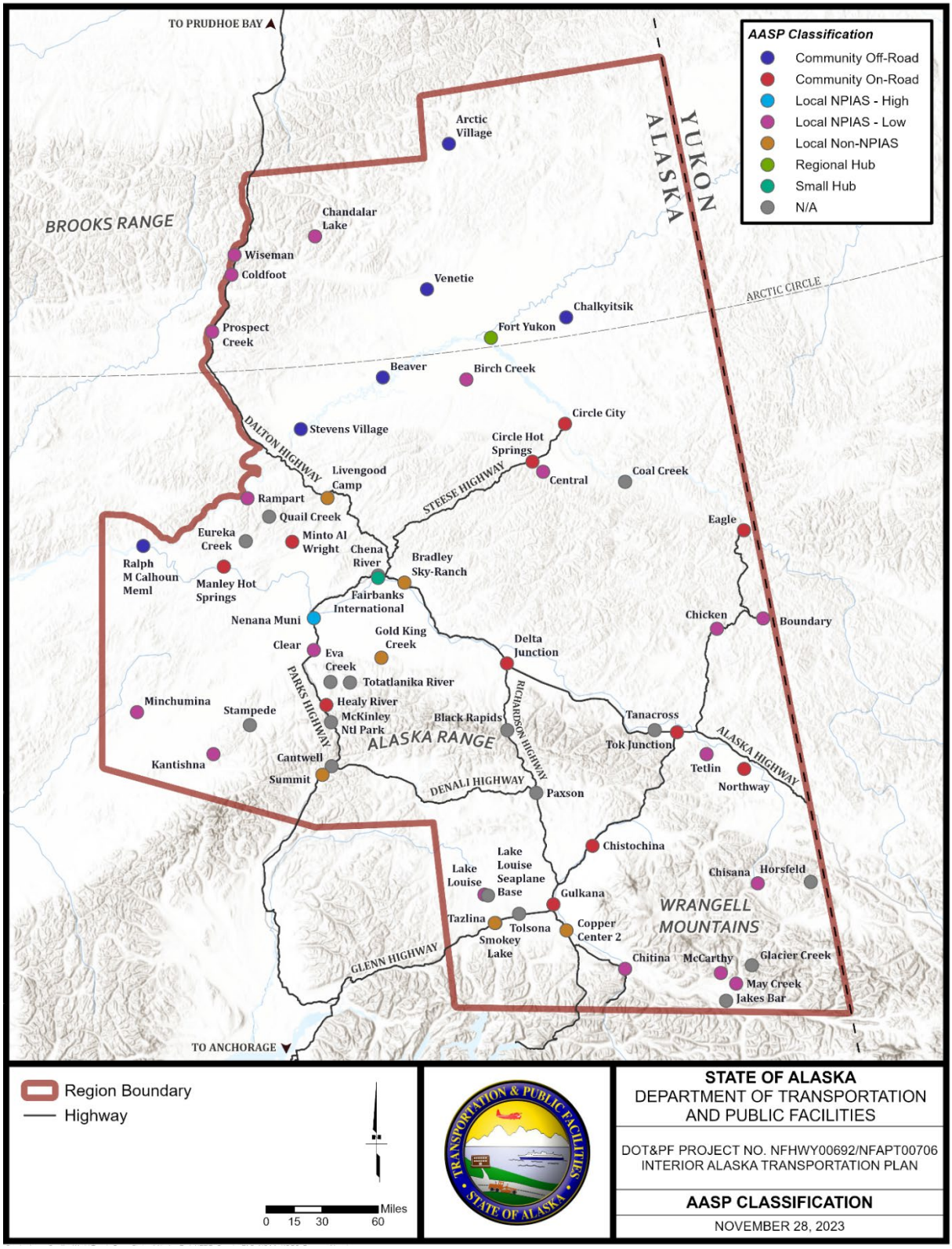


Figure 2. IATP Airports by AASP Classification

Table 3. Summary of IATP Airports by AASP Classification

AASP Classification	No.	IATP Airports	
Small Hub	1	Fairbanks International (FAI)	
Regional Hub	1	Fort Yukon (FYU)	
Community Off-Road	6	Arctic Village (ARC) Beaver (WBQ) Chalkyitsik (CIK)	Ralph M Calhoun Meml [Tanana] (TAL) Stevens Village (SVS) Venetie (VEE)
Community On-Road	11	Central (CEM) Chistochina (CZO) Circle City (CRC) Delta Junction (D66) Eagle (EAA) Gulkana (GKN)	Healy River (HRR) Manley Hot Springs (MLY) Minto Al Wright (51Z) Northway (ORT) Tok Junction (6K8)
Local NPIAS High-Activity	1	Nenana Muni (ENN)	
Local NPIAS Low-Activity	18	Birch Creek (Z91) Boundary (BYA) Chandalar Lake (WCR) Chicken (CKX) Chisana (CZN) Chitina (CXC) Circle Hot Springs (CHP) Clear (Z84) Coldfoot (CXF)	Kantishna (5Z5) Lake Louise (Z55) May Creek (MYK) McCarthy (15Z) Minchumina (MHM) Prospect Creek (PPC) Rampart (RMP) Tetlin (3T4) Wiseman (WSM)
Local Non-NPIAS	6	Bradley Sky-Ranch (95Z) Copper Center 2 (Z93) Gold King Creek (AK7)	Livengood Camp (4AK) Summit (UMM) Tazlina (Z14)
Landing Strips	18	Black Rapids (5BK) Cantwell (TTW) Chena River (2Z5) Coal Creek (L20) Eureka Creek (2Z2) Eva Creek (2Z3) Glacier Creek (KGZ) Horsfeld (4Z5) Jakes Bar (AK0)	Lake Louise Seaplane Base (13S) McKinley Ntl Park (INR) Paxson (PXK) Quail Creek (20K) Stampede (Z90) Tanacross (TSG) Tazlina/Smokey Lake (5AK) Tolsona Lake (58A) Totatlanika River (9AK)

Figure 3 shows all public-use airports in Alaska by AASP classification. As shown, there are a wide variety of airport types in the IATP region, as opposed to the more homogeneous collection of airports across the rest of the state. With such a broad assortment of airports with varying sizes, roles, and community needs, this regional plan will intend to focus on the aviation system issues and needs of greatest regional importance, while noting individual airport characteristics.

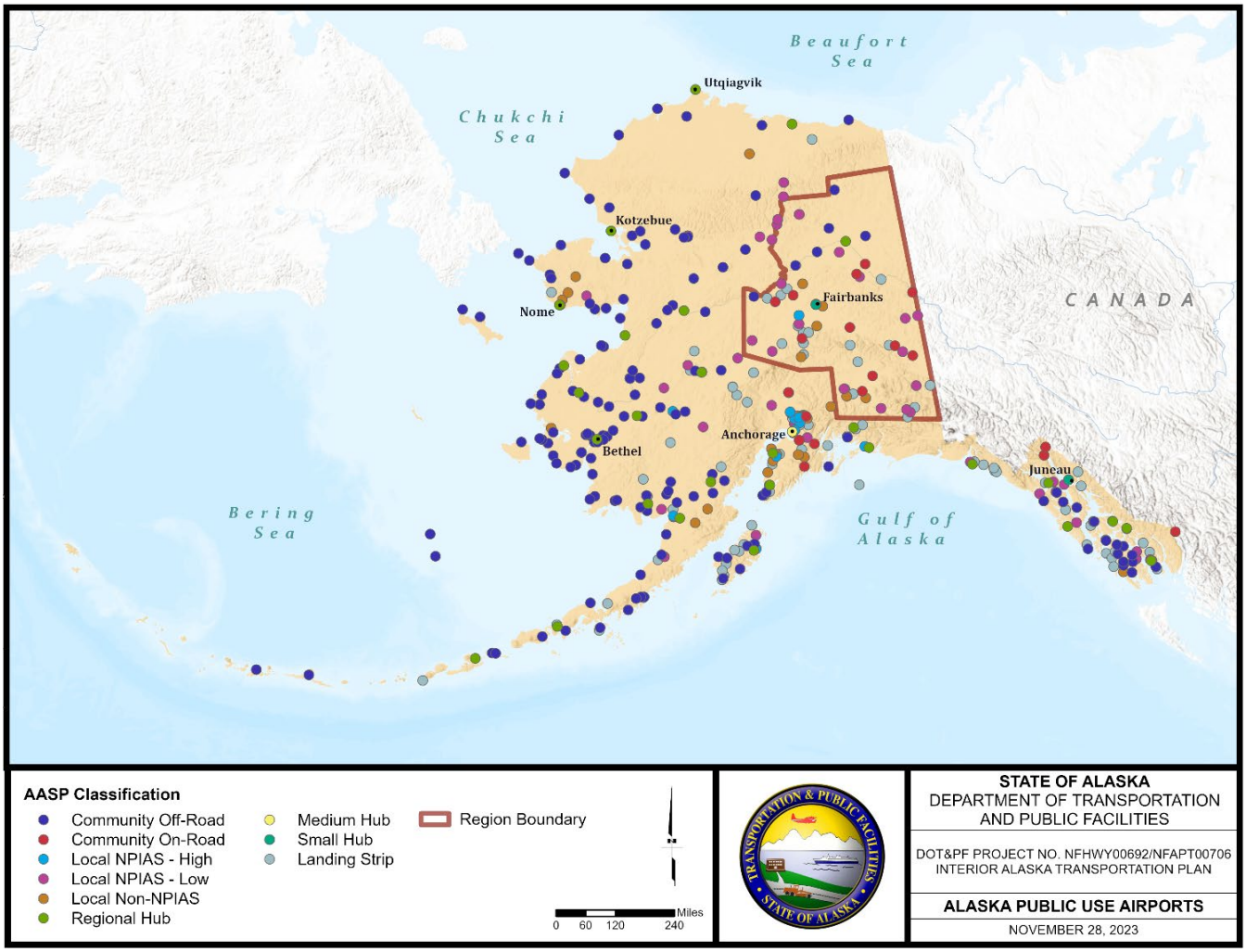


Figure 3. Alaska Public-Use Airports by AASP Classification

2.2 IATP Airports by Ownership

Although this evaluation will largely consider the IATP airports by classification, there are other distinctions between the airports that may provide clarity on how this aviation system is used, managed, and operated. Airport ownership has a large role in determining how airports are operated, funded, and managed. *Figure 4* shows the 62 airports in the IATP region, designated by ownership. Table 4 lists the airports owned by each ownership category. Most of the airports not owned by the DOT&PF or another local government are considered Landing Strips by the AASP. Commonly referred to as backcountry airports, these facilities often provide critical access to remote areas of the state, but there are no specific performance measures that guide their infrastructure needs.

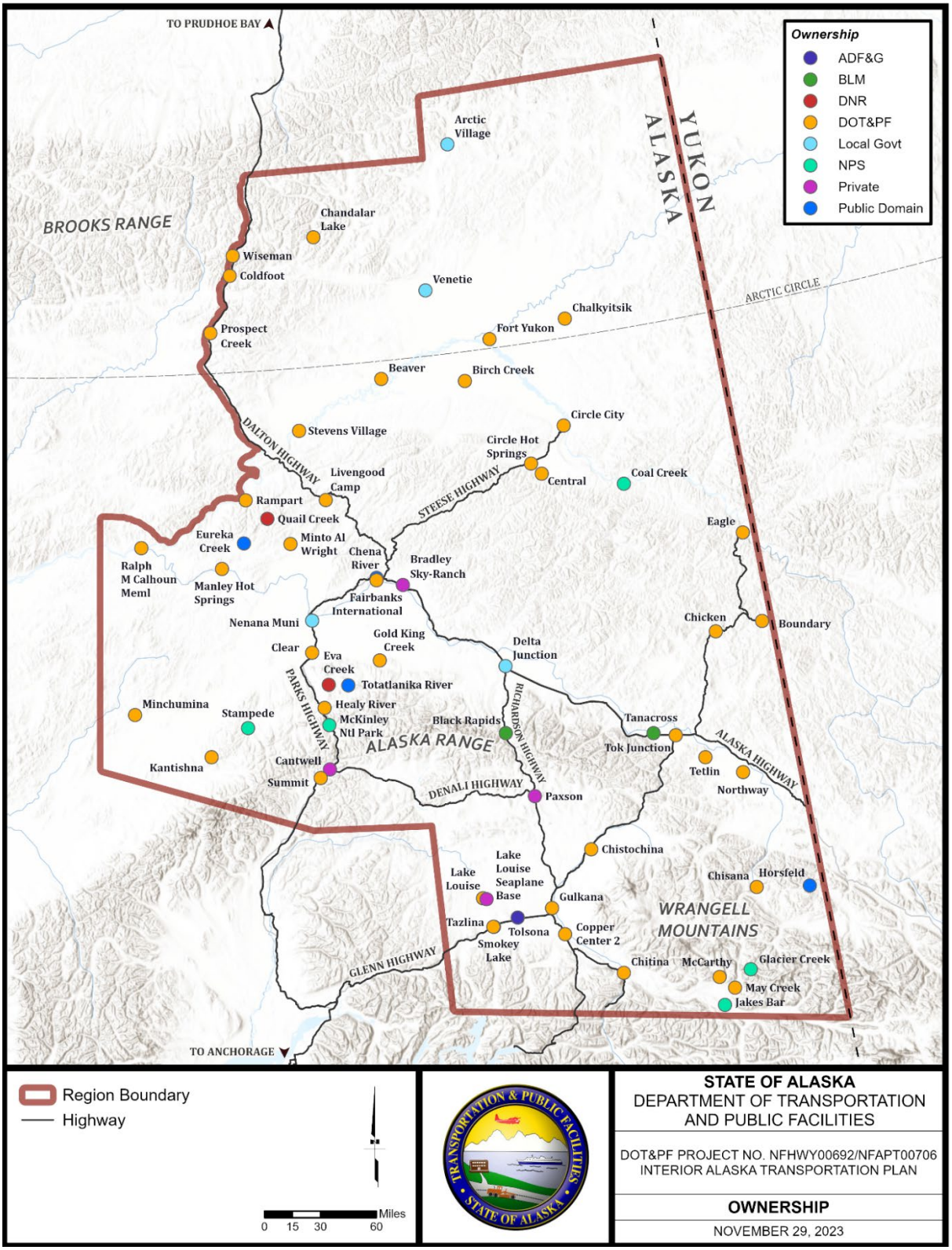


Figure 4. Airport Locations and Ownership.

Table 4. Summary of IATP Airports by Ownership

Ownership	No.	IATP Airports	
DOT&PF	37	Beaver (WBQ) Birch Creek (Z91) Boundary (BYA) Central (CEM) Chalkyitsik (CIK) Chandalar Lake (WCR) Chicken (CKX) Chisana (CZN) Chistochina (CZO) Chitina (CXC) Circle City (CRC) Circle Hot Springs (CHP) Clear (Z84) Coldfoot (CXF) Copper Center 2 (Z93) Eagle (EAA) Fairbanks International (FAI) Fort Yukon (FYU) Gold King Creek (AK7)	Gulkana (GKN) Healy River (HRR) Kantishna (5Z5) Lake Louise (Z55) Livengood Camp (4AK) Manley Hot Springs (MLY) May Creek (MYK) McCarthy (15Z) Minchumina (MHM) Minto Al Wright (51Z) Northway (ORT) Ralph M Calhoun Meml [Tanana] (TAL) Rampart (RMP) Stevens Village (SVS) Summit (UMM) Tazlina (Z14) Tetlin (3T4) Tok Junction (6K8)
Local Government	4	Arctic Village (ARC) Delta Junction (D66)	Nenana Muni (ENN) Venetie (VEE)
Federal Agency	8	Black Rapids (5BK) – BLM Coal Creek (L20) – NPS Glacier Creek (KGZ) – NPS Jakes Bar (AK0) – NPS	McKinley Ntl Park (INR) – NPS Paxson (PXK) – BLM Stampede (Z90) – NPS Tanacross (TSG) – BLM
State Agency	3	Eva Creek (2Z3) – DNR Quail Creek (20K) – DNR	Tolsona Lake (58A) – ADF&G
Private	4	Bradley Sky-Ranch (95Z) Cantwell (TTW)	Lake Louise Seaplane Base (13S) Tazlina/Smokey Lake (5AK)
Public Domain	4	Chena River (2Z5) Eureka Creek (2Z2)	Horsfeld (4Z5) Totatlanika River (9AK)
BLM: Bureau of Land Management | NPS: National Park Service | DNR: Department of Natural Resources | ADF&G: Alaska Department of Fish & Game			

2.3 IATP Airports Comparison

The diversity of the airports in the IATP region can be difficult to describe in a narrative. *Appendix 3: Summary of IATP Airports by Ownership, AASP Classification, On/Off Road Status, and Seaplane Base Status* includes a summary of the IATP airports identifying ownership, AASP classification, on/off road status, and facilities that are exclusively seaplane bases.

DOT&PF owns airports across multiple classifications – 27 on the road system and 12 off the road system. The DOT&PF is tasked with operating a set of airports that offer a wide range in levels of service, with the airport users' expectations of safe, reliable facilities regardless of classification or location. The airports on the road system benefit in many ways, with greater access to maintenance, DOT&PF staff, materials sources, utilities, and other amenities that being connected by road enables. However, the on-road airports suffer when it comes to competing for funding against off-road airports statewide that provide the only year-round access to their communities. The airports off the road system in the IATP region generally have the reversed advantages/disadvantages – these airports do not enjoy the conveniences that road access provides, but they can be seen as more essential – and thus be more likely to receive project funding – since they provide the only reliable access to communities off the road system.

Local governments own four of the Community and Local NPIAS High-Activity facilities, two off the road system and two on the road system. Airports owned by local governments (called local sponsors, in aviation terms) have their own set of advantages and disadvantages. Local sponsors can often more specifically and intentionally identify the needs of their airports and create development plans. Some local sponsors are also very adept at pursuing funding to accomplish development goals. However, many smaller local governments lack the staffing and/or airport expertise to effectively own, operate, maintain, and develop airports; and negotiating the landscape of AIP funding, airport obligations, and other aviation-specific considerations can be an enormous undertaking.

Federal and state agencies (excluding DOT&PF) own 11 Landing Strips – five on the road system, six off the road system. One of the road system airports is a seaplane facility. The agencies that own these facilities are not in the aviation line of business, which is to say that their missions and purposes rarely, if ever, include the maintenance and operation of airports as mission-critical activities. These facilities are often minimally maintained, just enough to preserve access to remote areas for agency and public-use purposes.

One Local Non-NPIAS facility and three Landing Strips (two of which are seaplane facilities) are privately owned. Very few private entities have the experience or financial ability to own and operate airports, and so those that do are uniquely positioned to provide a valuable service to the public aviation system.

Four Landing Strips (one of which is a seaplane facility) are in the public domain. The preservation of facilities such as this, that have no designated owner, is often important to provide safe landing areas in between more developed airports. Since no one owns these facilities, the underlying challenge with maintaining the facilities in a safe, operable condition is identifying a responsible entity.

2.4 Inventory

The inventory included in this chapter will focus on the components of the airports that are considered by performance measures – classification, condition, runway length, surface condition, runway lighting, weather reporting, navigational aids, and services and amenities. The inventory is presented by AASP classification of the airports. Source data is from the FAA's Airport Data Information Portal (ADIP) and the AASP online facilities database. Performance measure report cards for all of the IATP facilities can be referenced in *Appendix 4: AASP Performance Measure Report Cards*.

2.4.1 Small Hub

Fairbanks International Airport (FAI) is the only Small Hub airport in the IATP region. The AASP definition of a Small Hub airport is an airport that has at least 0.05 percent, but less than 0.25 percent, of the total annual passenger boardings in the United States. Fairbanks International's slogan is *"Providing Interior Alaska's Gateway to the World,"* as this busy and geographically well-situated airport links the region to other parts of Alaska, other states, and international destinations.

Fairbanks International Airport (FAI) serves as both a regional hub and an international airport. FAI is the hub for commercial and general aviation activity in the IATP area and sees the second most passenger boardings in the state (after Ted Stevens Anchorage International). Most of the air carriers and air taxis serving the IATP area are based at FAI. FAI is a hub for carriers providing Essential Air Service (EAS) and Bypass Mail service to many outlying communities in the IATP region. The Alaska State Troopers (AST), U.S. Fish and Wildlife Service (USFWS), Department of National Resources (DNR) Division of Forestry and Fire Protection, and Civil Air Patrol (CAP) have aviation bases at FAI.

Fairbanks International is a major component of the IATP region's transportation system, but it will be considered separately from the other airports in this plan. FAI is managed, operated, and funded distinctly from any of the other IATP airports, and this airport has its own capital and development plan. Therefore, while FAI plays a key role in the IATP aviation system – and its role and influence will be considered – specific needs, projects, and development plans for FAI are determined by the airport's dedicated staff and planning efforts and not by this IATP update.

Table 5. IATP Small Hub Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Fairbanks International Airport	FAI	DOT&PF	Primary CS – Small Hub	11,800 x 150	Asphalt - G	HIRL	ILS & NPI
				4,510 x 75	Asphalt - G	MIRL	--
				2,900 x 75	Gravel	U	--
				5,400 x 100	Water	U	--

CS: Commercial Service | HIRL: High Intensity Runway Lights | MIRL: Medium Intensity Runway Lights | U: Unlighted | ILS: Precision Instrument Landing System | NPI: Non-Precision Instrument | Runway Surface Condition: G: Good, F: Fair, P: Poor

Table 6. IATP Small Hub Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Fairbanks International Airport	FAI	ASOS	X	ILS, VORTAC	N/A	Terminal, Restrooms, Fuel, Lease Lots, FBO

ASOS: Automated Surface Observing System | ILS: Instrument Landing System | VORTAC: Very High-Frequency Omnidirectional Radio Range Tactical Air Navigation with Distance Measuring Equipment

FAI has four (4) runways, allowing operations of a wide variety of aircraft. Its 11,800 ft paved runway accommodates wide-body cargo jets and passenger jets moving between Alaska, the continental U.S., and international destinations. The primary runway with the additional paved, gravel, and water runways support the region's robust commuter aircraft, bush aircraft, and floatplane traffic. The weather camera for FAI (sited at Esther Dome, northwest of the airport) has been installed in the time since the *2010 IATP* was published. The weather camera at Esther Dome is a weather information resource for both FAI and the separately registered Chena River (2Z5) facility located in close proximity to FAI.

2.4.2 Regional Hub

Fort Yukon (FYU) is the IATP region's only airport currently classified as a Regional Hub. Regional Hubs, according to the AASP classification system, are airports that serve as the transportation and economic hub for more than one community. Regional airports generally accommodate larger aircraft, have instrument approaches, and have more landside facilities, infrastructure, and services than other smaller, public-use airports. FYU is designated a Regional Hub because it is a USPS Bypass Mail hub, it serves a community with a health facility that serves two or more communities, and it is a designated fire tanker base. Existing conditions of several key airport features at FYU are presented in Table 7 and Table 8. A discussion of whether the existing conditions meet Regional Hub performance measures is included in the *Issues and Needs* section.

Table 7. IATP Regional Hub Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Fort Yukon	FYU	DOT&PF	Nonprimary CS - Local	5,000 x 100	Gravel - G	MIRL	NPI

CS: Commercial Service | MIRL: Medium Intensity Runway Lights | NPI: Non-Precision Instrument | Runway Surface Condition: G: Good, F: Fair, P: Poor

Table 8. IATP Regional Hub Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Fort Yukon	FYU	AWOS	YES	VORTAC	13	Passenger Shelter, Lease Lots

AWOS: Automated Weather Observing System | VORTAC: Very High-Frequency Omnidirectional Radio Range Tactical Air Navigation with Distance Measuring Equipment

Fort Yukon received funding through the American Recovery and Reinvestment Act (ARRA) of 2009 that supported a runway and apron rehabilitation and construction of a new SREB. FYU's runway length of 5,810 ft reported in the *2010 IATP* included an 810 ft displaced threshold. The runway has since been reconfigured so that the length is 5,000 ft, and the runway safety areas meet FAA standards (i.e., there is no longer a displaced threshold, and the previous additional length is now part of the runway safety area). The weather camera at FYU has been installed in the time since the *2010 IATP* was published.

2.4.3 Community Off-Road

There are six (6) Community Off-Road airports in the IATP region. Community airports generally fulfill the role of a small community's primary airport and serve basic needs such as passenger travel to regional hubs, mail service, local aviation related business, and emergency needs. This classification includes communities with a year-round population of at least 25 people and a public school. The Community classification is divided into two subcategories, On-Road and Off-Road. Off-Road airports are not connected to the National Highway System, and thus these off-road airports become the primary transportation mode supporting their communities.

The six (6) Community Off-Road airports in the IATP boundary all lie within the northern portion of the IATP area. Five of the six lie within the remote and roadless expanse between the Dalton Highway and the Canadian border. Four (4) of these airports are owned by the DOT&PF, and the other two are owned by the Native Village of Venetie Tribal Government. Existing conditions of key features for the IATP region's Community Off-Road airports are presented in Table 9 and Table 10.

Table 9. IATP Community Off-Road Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Arctic Village	ARC	Native Village of Venetie Tribal Govt	GA - Basic	4,500 x 75	Gravel - P	MIRL	NPI
Beaver	WBQ	DOT&PF	GA - Basic	3,934 x 75	Gravel - G	MIRL	NPI
Chalkyitsik	CIK	DOT&PF	GA - Basic	4,000 x 75	Gravel - F	MIRL	NPI
Ralph M Calhoun Meml [Tanana]	TAL	DOT&PF	GA - Basic	4,400 x 100	Gravel - G	MIRL	NPI
Stevens Village	SVS	DOT&PF	GA - Basic	4,000 x 75	Gravel - G	MIRL	--
Venetie	VEE	Native Village of Venetie Tribal Govt	GA - Basic	4,000 x 75	Gravel - G	MIRL	NPI

GA: General Aviation | MIRL: Medium Intensity Runway Lights | NPI: Non-Precision Instrument | Runway Surface Condition: G: Good, F: Fair, P: Poor

Table 10. IATP Community Off-Road Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Arctic Village	ARC	AWOS	X	--	unknown	Passenger Shelter
Beaver	WBQ	--	X	--	34	Emergency Shelter, Broadband
Chalkyitsik	CIK	--	X	--	29	Emergency Shelter
Ralph M Calhoun Meml (Tanana)	TAL	ASOS	X	VOR	18	Restrooms, Emergency Shelter
Stevens Village	SVS	--	--	--	17	Emergency Shelter
Venetie	VEE	--	--	--	16 - 20	Passenger Shelter

AWOS: Automated Weather Observing System | ASOS: Automated Surface Observing System | VOR: Very High-Frequency Omnidirectional Radio Range

Air transportation is the only year-round mode of access to these off-road communities. The airports supporting these communities are all lighted, have runway lengths of approximately 4,000 ft or greater, and most have instrument approach procedures. The need for reliable year-round access to the communities during long periods of darkness and inclement weather means that these facilities often rank high in priority for funding and infrastructure improvements. Although runway infrastructure is generally suitable at these airports, weather reporting and NAVAIDs are lacking, the lighting systems are aged, and few services are available.

Arctic Village and Ralph M Calhoun Meml (Tanana) airports have had weather reporting and weather cameras since at least 2010. Beaver and Chalkyitsik have had weather cameras installed since 2010, but these two airports do not have other weather reporting systems available. Stevens Village and Venetie lack any weather reporting.

Stevens Village and Venetie were recently constructed new airports at the time the *2010 IATP* was developed. Stevens Village was constructed new with 2001 and 2005 AIP grants, and Venetie was constructed new with a 2003 AIP grant. These two airports are now approaching 20 years old, and neither has seen any major funding/projects since. Arctic Village has also not had any improvements since a runway rehabilitation project nearly 20 years ago. Airports owned by local sponsors – like Venetie and Arctic Village – are often not considered in statewide airport planning/programming without local ownership being proactive in identifying needs and pursuing funding.

2.4.4 Community On-Road

There are eleven Community On-Road airports in the IATP Region. Like the Community Off-Road airports, the Community On-Road airports generally fulfill the role of a small community's primary airport and serve basic needs such as passenger travel to regional hubs, mail service, local aviation related business, and emergency needs. This classification includes communities with a year-round population of at least 25 people, a public school, and located more than one hour by road from an International, Regional Hub, or other Community class airport. Delta Junction (D66) is owned by the City of Delta Junction, and the other ten Community On-Road airports are owned by the DOT&PF. Existing conditions of key features for the IATP region's Community On-Road airports are presented in Table 11 and Table 12.

Table 11. IATP Community On-Road Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Central	CEM	DOT&PF	GA - Basic	2,782 x 60	Gravel - P	MIRL	--
Chistochina	CZO	DOT&PF	--	2,060 x 60	Gravel - F	U	--
Circle City	CRC	DOT&PF	GA - Basic	2,979 x 60	Gravel - G	MIRL	--
Delta Junction	D66	City of Delta Junction	--	2,500 x 60	Gravel - G	U	--
Eagle	EAA	DOT&PF	GA - Basic	3,600 x 75	Gravel - G	MIRL	--
Gulkana	GKN	DOT&PF	GA – Local	5,001 x 100	Asphalt - G	MIRL	NPI
				2,300 x 60	Gravel - G	U	--
Healy River	HRR	DOT&PF	GA - Basic	2,910 x 60	Asphalt – G	MIRL	--
Manley Hot Springs	MLY	DOT&PF	GA - Basic	3,400 x 60	Gravel - G	MIRL	--
Minto Al Wright	51Z	DOT&PF	GA - Basic	3,400 x 75	Gravel - G	MIRL	--
Northway	ORT	DOT&PF	GA - Basic	5,100 x 100	Asphalt - G	MIRL	NPI
Tok Junction	6K8	DOT&PF	GA – Local	2,509 x 50	Asphalt - G	MIRL	NPI

GA: General Aviation | MIRL: Medium Intensity Runway Lights | U: Unlighted | NPI: Non-Precision Instrument | Runway Surface Condition: G: Good, F: Fair, P: Poor

Table 12. IATP Community On-Road Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Central	CEM	--	X	--	30	--
Chistochina	CZO	--	X	--	U	Broadband
Circle City	CRC	--	--	--	35	Fuel
Delta Junction	D66	--	X	--	U	--
Eagle	EAA	ASOS	X	--	38	Restrooms, Broadband
Gulkana	GKN	ASOS	X	VOR	38	Restrooms, Fuel, Broadband
Healy River	HRR	--	--	--	9	Fuel, Broadband
Manley Hot Springs	MLY	--	--	--	11	Restrooms
Minto Al Wright	51Z	--	X	--	16	--
Northway	ORT	ASOS	X	VORTAC, NDB	15	Restrooms, Broadband
Tok Junction	6K8	AWOS-3PT	X	--	35	Restrooms, Fuel, Broadband

AWOS-3PT: Automated Weather Observing System plus cloud/ceiling and thunderstorm/lightning data | ASOS: Automated Surface Observing System | VOR: Very High-Frequency Omnidirectional Radio Range| VORTAC: Very High-Frequency Omnidirectional Radio Range Tactical Air Navigation with Distance Measuring Equipment | NDB: Non-Directional Beacon | U: Unlighted

The IATP region's Community On-Road airports have a wide variation in runway size. The goal for Community class airports is a runway length of 3,300 ft or greater, and over half the Community On-Road Airports fail to meet this minimum, while two of the airports greatly exceed the minimum. The runway surfaces are generally in good condition, likely due to the ability of DOT&PF maintenance crews to access these airports and use local resources available on the road system to maintain the facilities. Most of the airports have runway edge lighting, but several of the lighting systems are very advanced in age. Amenities and services desirable for Community class airports are lacking overall.

Weather reporting is a noticeable void for the Community On-Road airports. Only four of the seven facilities have weather reporting. Central and Manley Hot Springs had A-Paid weather reporters in 2010, but that program has been discontinued, and these two airports currently have *less* weather information reported than they once did. Several airports have had weather cameras installed since 2010: Central, Chistochina, Delta Junction, Eagle, Gulkana, Minto Al Wright, and Tok Junction. There are very few NAVAIDs at the Community On-Road airports.

Two of the Community On-Road facilities in the IATP region are not included in the NPIAS – Chistochina and Delta Junction. Chistochina is a DOT&PF owned facility, and DOT&PF has no plans to have this facility included in the NPIAS. The City of Delta Junction owns the Delta Junction airport, and the City has interest in becoming part of the NPIAS so that they can be eligible for AIP funding.

2.4.5 Local NPIAS High-Activity

Local airports are considered general aviation airports and vary widely in size, purpose, and amenities. Local airports are divided into three sub-classifications: Local NPIAS High-Activity, Local NPIAS Low-Activity, and Local Non-NPIAS. There is only one Local NPIAS High-Activity airport in the IATP area. Nenana Muni (ENN) is owned by the City of Nenana. This facility is in the NPIAS, does not meet the criteria for other classifications, and has at least 20 based aircraft. Nenana Muni has recently updated its Airport Layout Plan and has development plans that include significant infrastructure and service improvements. Existing conditions of key airport features at Nenana are presented in Table 13 and Table 14.

Since the *2010 IATP* was published, Nenana has accomplished some fencing work, runway surface preservation, and the construction of a fuel farm. A weather camera at Nenana has been installed since 2010. Several improvement projects at Nenana are anticipated to be completed by FY25, including lighting upgrades and additional surface preservation work. The recently completed Airport Layout Plan update identifies major development plans for this facility, with a capital improvement plan outlining possible timeframes in which the work may be accomplished.

Table 13. IATP Local NPIAS High-Activity Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Nenana Muni	ENN	City of Nenana	GA - Basic	4,600 x 100	Asphalt - G	MIRL	NPI
				1,980 x 80	Turf - F	MIRL	--
				3,601 x 100	Water	U	--

GA: General Aviation | MIRL: Medium Intensity Runway Lights | U: Unlighted | NPI: Non-Precision Instrument | Runway Surface Condition: G: Good, F: Fair, P: Poor

Table 14. IATP Local NPIAS High-Activity Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Nenana Muni	ENN	ASOS	X	VORTAC	27	Fuel

ASOS: Automated Surface Observing System | VORTAC: Very High-Frequency Omnidirectional Radio Range Tactical Air Navigation with Distance Measuring Equipment

2.4.6 Local NPIAS Low-Activity

There are 18 Local NPIAS Low-Activity airports in the IATP area. Low-Activity airports do not qualify for other classifications, are in the NPIAS, and have fewer than 20 based aircraft. All of the Local NPIAS Low-Activity airports in the IATP region are owned by the DOT&PF. Existing conditions of key features for the IATP region's Local NPIAS Low-Activity airports are presented in Table 15 and Table 16.

Table 15. IATP Local NPIAS Low-Activity Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Birch Creek	Z91	DOT&PF	GA - Basic	4,000 x 75	Gravel - G	MIRL	--
Boundary	BYA	DOT&PF	GA - Unclassified	2,325 x 60	Gravel - G	U	--
Chandalar Lake	WCR	DOT&PF	GA - Basic	3,000 x 60	Gravel - G	U	--
Chicken	CKX	DOT&PF	GA - Basic	2,500 x 60	Gravel - G	U	--
Chisana	CZN	DOT&PF	GA - Basic	3,000 x 50	Turf - P	U	--
Chitina	CXC	DOT&PF	GA - Basic	2,850 x 75	Gravel - G	U	--
Circle Hot Springs	CHP	DOT&PF	GA - Unclassified	3,669 x 80	Gravel - G	U	--
Clear	Z84	DOT&PF	GA - Unclassified	3,997 x 100	Asphalt - G	MIRL	--
Coldfoot	CXF	DOT&PF	Nonprimary CS - Local	4,001 x 75	Gravel - G	MIRL	NPI
Kantishna	5Z5	DOT&PF	GA - Basic	1,887 x 45	Gravel - G	U	--
Lake Louise	Z55	DOT&PF	GA - Basic	2,900 x 60	Gravel - E	U	--
May Creek	MYK	DOT&PF	GA - Basic	2,700 x 100	Turf - G	U	--
McCarthy	15Z	DOT&PF	GA - Unclassified	3,501 x 60	Gravel - F	U	--
Minchumina	MHM	DOT&PF	GA - Basic	4,184 x 100	Gravel - G	MIRL	NPI
Prospect Creek	PPC	DOT&PF	--	4,968 x 150	Gravel - G	MIRL	--
Rampart	RMP	DOT&PF	GA - Basic	3,520 x 75	Gravel - G	MIRL	--
Tetlin	3T4	DOT&PF	GA - Basic	3,300 x 75	Gravel - G	MIRL	--
Wiseman	WSM	DOT&PF	--	2,000 x 30	Turf - P	U	--

GA: General Aviation | CS: Commercial Service | MIRL: Medium Intensity Runway Lights | U: Unlighted | NPI: Non-Precision Instrument | Runway Surface Condition: E: Excellent, G: Good, F: Fair, P: Poor

Table 16. IATP Local NPIAS Low-Activity Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services

Birch Creek	Z91	--	--	--	28	--
Boundary	BYA	--	--	--	U	--
Chandalar Lake	WCR	--	--	NDB	U	--
Chicken	CKX	--	--	--	U	--
Chisana	CZN	--	--	--	U	--
Chitina	CXC	--	X	--	U	--
Circle Hot Springs	CHP	--	--	--	U	--
Clear	Z84	--	--	--	24	--
Coldfoot	CXF	AWOS-3PT	X	--	8	--
Kantishna	5Z5	--	--	--	U	--
Lake Louise	Z55	--	--	--	U	--
May Creek	MYK	--	--	--	U	--
McCarthy	15Z	--	--	--	U	--
Minchumina	MHM	AWOS	X	NDB	34	--
Prospect Creek	PPC	--	--	--	15	--
Rampart	RMP	--	--	--	22	--
Tetlin	3T4	--	--	--	19	--
Wiseman	WSM	--	--	--	U	--

AWOS: Automated Weather Observing System | AWOS-3PT: Automated Weather Observing System plus cloud/ceiling and thunderstorm/lightning data NDB: Non-Directional Beacon| U: Unlighted

The runway surfaces of the IATP region's Local NPIAS Low-Activity airports are in good condition, overall. However, weather reporting and weather cameras are needed at these airports in order to meet performance measures, and very few of the airports have either. Only two of the airports have weather reporting systems, and only three have weather cameras. The weather cameras at Chitina and Coldfoot were installed in the time since the *2010 IATP* was published. Although runway lighting systems are not specified as a performance measure for this airport classification, it is worth noting that few of these airports have runway edge lighting, and those that do are using aged lighting systems.

2.4.7 Local Non-NPIAS

There are six Local Non-NPIAS airports in the IATP area. Local Non-NPIAS airports are facilities that are not in the NPIAS and are thus ineligible for federal grant funding. However, they are still owned and operated by various entities (five by DOT&PF, one by a private owner) and serve specific local roles that distinguish them from being considered landing strips, backcountry facilities, or unclassified facilities. Existing conditions of key features for the IATP region's Local Non-NPIAS airports are presented in Table 17 and Table 18.

Table 17. IATP Local Non-NPIAS Airports – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Bradley Sky-Ranch	95Z	Private	--	4,100 x 60	Gravel – F	U	--
Copper Center 2	Z93	DOT&PF	--	2,200 x 55	Gravel – F	U	--
Gold King Creek	AK7	DOT&PF	--	2,558 x 17	Gravel – F	U	--
Livengood Camp	4AK	DOT&PF	--	3,000 x 50	Gravel – G	U	--
Summit	UMM	DOT&PF	--	3,814 x 80	Gravel – G	U	--
Tazlina	Z14	DOT&PF	--	1,200 x 40	Gravel – G	U	--

Runway Surface Condition: E: Excellent, G: Good, Fair: F, P: Poor | U: Unlighted

Table 18. IATP Local Non-NPIAS Airports – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Bradley Sky-Ranch	95Z	--	--	--	U	--
Copper Center 2	Z93	--	--	--	U	--
Gold King Creek	AK7	--	--	--	U	--

Livengood Camp	4AK	--	X	--	U	--
Summit	UMM	--	X	--	U	--
Tazlina	Z14	--	--	--	U	--

U: Unlighted

There are only two performance measures defined by the AASP for Local Non-NPIAS facilities, and they amount to expecting these airports to remain open year-round, with runway surfaces maintained in a state of good condition. These facilities generally do not have – and are not expected to have – instrument approaches, weather reporting, NAVAIDs, lighting systems, or other services and amenities. Summit has had a weather camera since at least 2010, and Livengood Camp's weather camera has been installed since then.

Bradley Sky-Ranch is a unique airport in the aviation system and in this classification. While the five other similarly classified airports are remote gravel strips that serve as little more than safe places to land, Bradley Sky-Ranch is located within the city of North Pole, has a significant number of based aircraft, and supports robust activity. Unresolved ownership issues have prevented this facility from completing a Master Plan, and it has not been included in the NPIAS to date.

2.4.8 Landing Strips

The May 2022 AASP Classifications & Performance Measures report identifies a new class of airports to include all other NPIAS, FAA-recognized facilities in Alaska. This new classification assigns the title of Landing Strips to facilities across the state that do not qualify for other classifications but are registered with the FAA and appear in maps and charting publications. There are 18 Landing Strips in the IATP area. These facilities are owned by various federal agencies, state agencies, or private owners, or they reside in the public domain (i.e., lack a registered owner). Four of the facilities are exclusively seaplane (floatplane) facilities. The AASP recognizes the important role that seaplane bases fulfill in Alaska, and they are considered further by the AASP Seaplane Facilities Plan to define specific needs and performance measures for these unique facilities. Existing conditions of key features for the IATP region's Landing Strips are presented in Table 19 and Table 20.

The agencies that own these Landing Strips – if owned by any entity at all – typically do not actively operate or maintain their facilities. The runway surfaces are in generally poor condition, and there are no services, amenities, or support features at most Landing Strips. McKinley (INR) is an exception, as this facility supports tourism within Denali National Park, and it has a runway surface in good condition, weather reporting, and a weather camera. Paxson also has a weather camera, installed in the time since the *2010 IATP* was published.

A primary reason these facilities remain registered is that they are important to pilots. These facilities provide access to the large expanses of remote Alaska, and many are used as emergency landing locations or safe landing sites in remote regions, where there may be no other suitable landing area. There is interest from the aviation community in getting weather reporting at some of these airports, but for the most part, these facilities are identified as places that the aviation community does not want to see deteriorate to unusable conditions.

Table 19. IATP Landing Strips – Runway Characteristics

Name	ID	Owner	NPIAS	Rwy Size (ft)	Rwy Sfc & Condition	Lights	Instrument Approach
Black Rapids	5BK	BLM	--	2,250 x 400	Turf - F	U	--
Cantwell	TTW	Private	--	2,080 x 30	Turf - F	U	--
Chena River	2Z5	Public Domain	--	3,000 x 300	Water	U	--
Coal Creek	L20	NPS	--	3,900 x 80	Gravel - P	U	--
Eureka Creek	2Z2	Unknown	--	1,500 x 35	Dirt	U	--
Eva Creek	2Z3	DNR	--	950 x 40	Gravel - P	U	--
Glacier Creek	KGZ	NPS	--	1,400 x 15	Gravel - P	U	--
Horsfeld	4Z5	Public Domain	--	900 x 12	Dirt - P	U	--
Jakes Bar	AK0	NPS	--	1,000 x 25	Gravel - P	U	--
Lake Louise Seaplane Base	13S	Private	--	5,000 x 4,000	Water	U	--
McKinley Ntl Park	INR	NPS	--	3,000 x 68	Gravel - G	U	--
Paxson	PXK	Private	--	1,900 x 12	Turf - F	U	--
Quail Creek	20K	DNR	--	1,650 x 30	Turf - P	U	--
Stampede	Z90	NPS	--	1,960 x 40	Turf - G	U	--
Tanacross	TSG	BLM	--	4,963 x 150	Asphalt - P	U	--
Tazlina/Smokey Lake	5AK	Private	--	2,200 x 600	Water	U	--
Tolsona Lake	58A	ADF&G	--	4,000 x 1,500	Water	U	--
Totatlanika River	9AK	Public Domain	--	780 x 30	Gravel - P	U	--

BLM: U.S. Bureau of Land Management| NPS: National Park Service | DNR: Alaska Department of Natural Resources | ADF&G: Alaska Department of Fish & Game | Runway Surface Condition: E: Excellent, G: Good, F: Fair, P: Poor | U: Unlighted

Table 20. IATP Landing Strips – Weather, NAVAIDs, & Services

Name	ID	Weather Reporting	Weather Camera	Navigational Aids	Age of Lighting	Other Services
Black Rapids	5BK	--	X	--	U	
Cantwell	TTW	--	--	--	U	
Chena River	2Z5	--	--	--	U	
Coal Creek	L20	--	--	--	U	
Eureka Creek	2Z2	--	--	--	U	
Eva Creek	2Z3	--	--	--	U	
Glacier Creek	KGZ	--	--	--	U	
Horsfeld	4Z5	--	--	--	U	
Jakes Bar	AK0	--	--	--	U	
Lake Louise Seaplane Base	13S	--	--	--	U	
McKinley Ntl Park	INR	AWOS-3P	X	--	U	
Paxson	PXK	--	X	--	U	
Quail Creek	20K	--	--	--	U	
Stampede	Z90	--	--	--	U	
Tanacross	TSG	--	--	--	U	
Tazlina/Smokey Lake	5AK	--	--	--	U	
Tolsona Lake	58A	--	--	--	U	
Totatlanika River	9AK	--	--	--	U	

AWOS-3P: Automated Weather Observing System plus cloud/ceiling data | U: Unlighted

2.4.9 Military

There are three military airfields in the IATP region, but these facilities are not available for public use and are not included in the IATP inventory or planning work. Military aviation activity plays a huge role in the IATP region, and some of the weather information and navigational infrastructure based at these facilities supports civilian aviation, but military airports themselves fall outside of the planning purposes of this evaluation. They are included here for awareness purposes, as the presence of these military airfields, the military airspace in the area, and military activity influence many of the public-use facilities in the IATP region.

The three (3) military airfields in the region are Allen Army Airfield (Allen AAF, or BIG) at Fort Greely near Delta Junction, Ladd Army Airfield (FBK) at Fort Wainwright in Fairbanks, and Eielson Air Force Base (EIL) just southeast of Fairbanks/North Pole. Allen AAF was, at one time, open for public use, with restrictions, but that status was changed in 2013. Allen AAF has an ASOS and NAVAIDs that benefit pilots using the nearby Delta Junction airport (three miles north).

2.5 Current & Base Year Activity

Aviation activity established for the base year of 2022 is presented in *Tables 21-25*. The statistics presented in the tables were derived as part of the aviation forecasting exercise, and more detailed information can be referenced in the *Aviation Forecasts* chapter. Base year activity consists of the following categories and information sources:

- Based aircraft – Based aircraft counts were derived from the FAA's National Based Aircraft Inventory. If not reported through this source, then data is from the FAA's Form 5010 data, published in the FAA's Airport Data and Information Portal (ADIP). If any airport has a recent or concurrent airport layout plan or master plan, that data has been used under the assumption that it is more current and accurate than other sources.
- Operations – Total operations (air carrier, air taxi, general aviation, and military) are derived from the FAA's Terminal Area Forecasts (TAF) or through Form 5010 data published in the ADIP. A breakdown of the different types of operations can be found in the *Aviation Forecasts* chapter.
- Enplaned Passengers – Enplaned passengers are presented as a representative passenger activity level from each facility. Data is from the USDOT Bureau of Transportation T-100 Domestic Market data. For the IATP facilities, enplaned passengers are generally roughly equal to deplaned passengers, so while either data set is representative of current activity, enplanements are more typically reported in airport planning exercises.
- Deplaned Freight & Mail – Deplaned freight and mail statistics are presented, as opposed to enplaned statistics, because the deplaned volumes are more representative of the activity at each facility. Very few of the facilities have significant volumes of mail or freight that is boarded onto aircraft from the facility and destinated for another location. Most of the facilities in the IATP region are recipients of sizeable volumes of mail and freight that support the local community and economy. The volume of inbound freight and mail is a more telling statistic than the volume of outbound freight and mail. Data is from the USDOT Bureau of Transportation T-100 Domestic Market data.

Table 21. IATP Hub Airports – Base Year Activity

Name	ID	Based Aircraft	Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)
SMALL HUB						
Fairbanks International	FAI	569	112,256	510,137	17,977,506	408,345
REGIONAL HUB						
Fort Yukon	FYU	0	8,377	4,728	1,008,028	627,027
HUB TOTALS		**569**	**120,633**	**514,865**	**18,985,534**	**1,035,372**

Table 22. IATP Community Airports – Base Year Activity

Name	ID	Based Aircraft	Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)

COMMUNITY OFF-ROAD						
Arctic Village	ARC	0	1,650	1,548	568,137	214,390
Beaver	WBQ	0	500	924	188,958	19,558
Chalkyitsik	CIK	0	650	558	183,658	60,837
Ralph M Calhoun Meml	TAL	0	3,100	1,820	240,638	143,256
Stevens Village	SVS	0	750	212	35,280	1,192
Venetie	VEE	0	1,900	1,392	633,971	294,045
COMMUNITY ON-ROAD						
Central	CEM	2	4,000	37	9,772	19,527
Chistochina	CZO	1	1,600	No data	No data	No data
Circle City	CRC	0	1,110	269	33,818	16,636
Delta Junction	D66	16	4,070	44	1,448	0
Eagle	EAA	1	2,400	650	119,037	105,591
Gulkana	GKN	12	5,122	420	2,861	1,470
Healy River	HRR	10	1,300	1,431	16,781	2,537
Manley Hot Springs	MLY	5	1,700	76	14,196	24,232
Minto Al Wright	51Z	0	1,000	138	13,169	22,047
Northway	ORT	0	15,800	No data	No data	No data
Tok Junction	6K8	33	2,700	404	19,037	955
COMMUNITY TOTALS		**80**	**49,352**	**9,923**	**2,080,761**	**926,273**

Table 23. IATP Local Airports – Base Year Activity

Name	ID	Based Aircraft	Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)
LOCAL NPIAS – HIGH ACTIVITY						
Nenana Muni	ENN	13	6,000	0	11,826	153
LOCAL NPIAS – LOW ACTIVITY						
Birch Creek	Z91	0	500	205	90,556	8,387
Boundary	BYA	0	250	No data	No data	No data
Chandalar Lake	WCR	0	300	45	10,667	0
Chicken	CKX	0	475	34	3,354	11,270
Chisana	CZN	0	150	85	37,640	4,098
Chitina	CXC	1	1,750	No data	No data	No data
Circle Hot Springs	CHP	4	3,600	No data	No data	No data
Clear	Z84	1	100	No data	No data	No data
Coldfoot	CXF	3	1,000	5,212	4,675	0
Kantishna	5Z5	0	1,200	0	0	0
Lake Louise	Z55	0	300	No data	No data	No data
May Creek	MYK	0	350	34	411	6,750
McCarthy	15Z	0	1,400	176	6,094	53,264
Minchumina	MHM	2	1,140	202	162,093	26,206
Prospect Creek	PPC	0	498	831	4,775	0
Rampart	RMP	0	300	490	109,485	13,654
Tetlin	3T4	0	112	No data	No data	No data
Wiseman	WSM	0	270	No data	No data	No data
LOCAL NON-NPIAS						
Bradley Sky-Ranch	95Z	46	120	No data	No data	No data
Copper Center 2	Z93	7	1,200	3	0	0
Gold King Creek	AK7	1	50	No data	No data	No data
Livengood Camp	4AK	0	100	No data	No data	No data
Summit	UMM	0	1,054	No data	No data	No data
Tazlina	Z14	1	200	No data	No data	No data
LOCAL TOTALS		**79**	**22,419**	**7,317**	**441,576**	**123,782**

Table 24. IATP Landing Strips – Base Year Activity

Name	ID	Based Aircraft	Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)
LANDING STRIPS						
Black Rapids	5BK	0	110	No data	No data	No data
Cantwell	TTW	3	2,350	No data	No data	No data
Chena River	2Z5	6	24	No data	No data	No data
Coal Creek	L20	0	200	No data	No data	No data
Eureka Creek	2Z2	0	0	No data	No data	No data
Eva Creek	2Z3	0	0	No data	No data	No data
Glacier Creek	KGZ	0	60	No data	No data	No data
Horsfeld	4Z5	0	0	No data	No data	No data
Jakes Bar	AK0	0	100	No data	No data	No data
Lake Louise SPB	13S	2	1,100	No data	No data	No data
McKinley Ntl Park	INR	7	3,200	No data	No data	No data
Paxson	PXK	0	0	No data	No data	No data
Quail Creek	20K	0	80	No data	No data	No data
Stampede	Z90	0	30	No data	No data	No data
Tanacross	TSG	0	800	No data	No data	No data
Tazlina/Smokey Lake	5AK	2	500	No data	No data	No data
Tolsona Lake	58A	2	300	No data	No data	No data
Totatlanika River	9AK	0	0	No data	No data	No data
LANDING STRIP TOTALS		**22**	**8,854**	**No data**	**No data**	**No data**

Table 25 summarizes activity by AASP classification and presents the percentage of total IATP region activity attributed to each class. Fairbanks International (FAI) is a dominating airport in the statistics, accounting for 76 percent of the total based aircraft, 56 percent of total operations, 96 percent of enplaned passengers, and 84 percent of deplaned freight. FAI accounts for only 20 percent of the deplaned mail, as most mail delivery to Fairbanks is via the road system. The single Regional Hub (Fort Yukon) accounts for four percent of total operations, one percent of total enplaned passengers, five percent of deplaned freight, and 30 percent of deplaned mail (Fort Yukon is a USPS Bypass Mail hub). Fort Yukon has no based aircraft. The 17 Community airports account for 11 percent of based aircraft, 25 percent of total operations, two percent of enplaned passengers, 10 percent of deplaned freight, and 44 percent of deplaned mail. The 25 Local airports account for 10 percent of based aircraft, 11 percent of total operations, one percent of enplaned passengers, two percent of deplaned freight, and six percent of deplaned mail. The Landing Strips have data reported for based aircraft and operations only and account for three percent of the region's based aircraft and four percent of total operations.

Table 25. Summary of Base Year Activity and Percentages of Total by AASP Classification

AASP Classification (& No. in IATP Region)	Based Aircraft	Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)
Small Hub (FAI) (1)	569	112,256	510,137	17,977,506	408,345
Regional Hub (1)	0	8,377	4,728	1,008,028	627,027
Community (17)	80	49,352	9,923	2,080,761	926,273
Local (25)	79	22,419	7,317	441,576	123,782
Landing Strips (18)	22	8,854	0	0	0
TOTALS	**750**	**201,258**	**532,105**	**21,507,871**	**2,085,427**
Percent of Total	**Based Aircraft**	**Operations**	**Enplaned Passengers**	**Deplaned Freight**	**Deplaned Mail**
Small Hub (FAI) (2%)	76%	56%	96%	84%	20%
Regional Hub (2%)	0%	4%	1%	5%	30%
Community (27%)	11%	25%	2%	10%	44%
Local (40%)	10%	11%	1%	2%	6%
Landing Strips (29%)	3%	4%	0%	0%	0%

2.6 Airspace

2.6.1 General Airspace

Fairbanks International Airport and the three military airfields have air traffic control towers, but the vast majority of flight in the region uses the AFSS in Fairbanks. Northway has a seasonal FSS, open May through September annually. Anchorage Air Route Traffic Control Center (Anchorage ARTCC) has control responsibility for airspace across the entire state of Alaska, for aircraft flying at high altitude within controlled airspace, principally during the en-route phase of flight.

2.6.2 Military Airspace

The IATP region is heavily used by the military, and the airspace is used extensively for military flight training. The remote, sparsely populated nature of the region makes it especially suitable for military exercises, as noise impacts to people are limited. Much of the IATP area is covered by special use airspace (SUA), military operating areas (MOAs), and restricted airspace (*Figure 5*).

Both the MOAs and restricted airspace areas are used frequently and require civilian pilots to have a high level of awareness about their presence and use. The military's MOA informational brochure for Alaska describes MOAs as "VFR see and avoid" airspace. VFR flight through MOAs is not restricted, although extreme caution is advised due to the high speed and dynamic nature of military flying. Emergency aircraft, medical evacuation (medevac) flights, and firefighting aircraft retain priority over military training. The MOAs are not always in use; they are used for defined periods during which major flying exercises are conducted. Usage times and durations are published in advance for public reference. Restricted airspace does prohibit civilian air traffic, and while these areas cover much less territory than the MOAs, there are a few of them in the IATP region.

Alaska has a dedicated service that civilian pilots can access to get current information about military airspace and operations. The Special Use Airspace Information Service (SUAIS) is a 24-hour service operated by the military that provides civilian pilots with information regarding military flight operations in certain MOAs and restricted airspace within central Alaska. SUAIS provides information on military flight activity in the interior Alaska MOA and Restricted Area complex, artillery firing, known helicopter operations, and military UAS operations. This service enables pilots to plan their flights through and around the SUA.

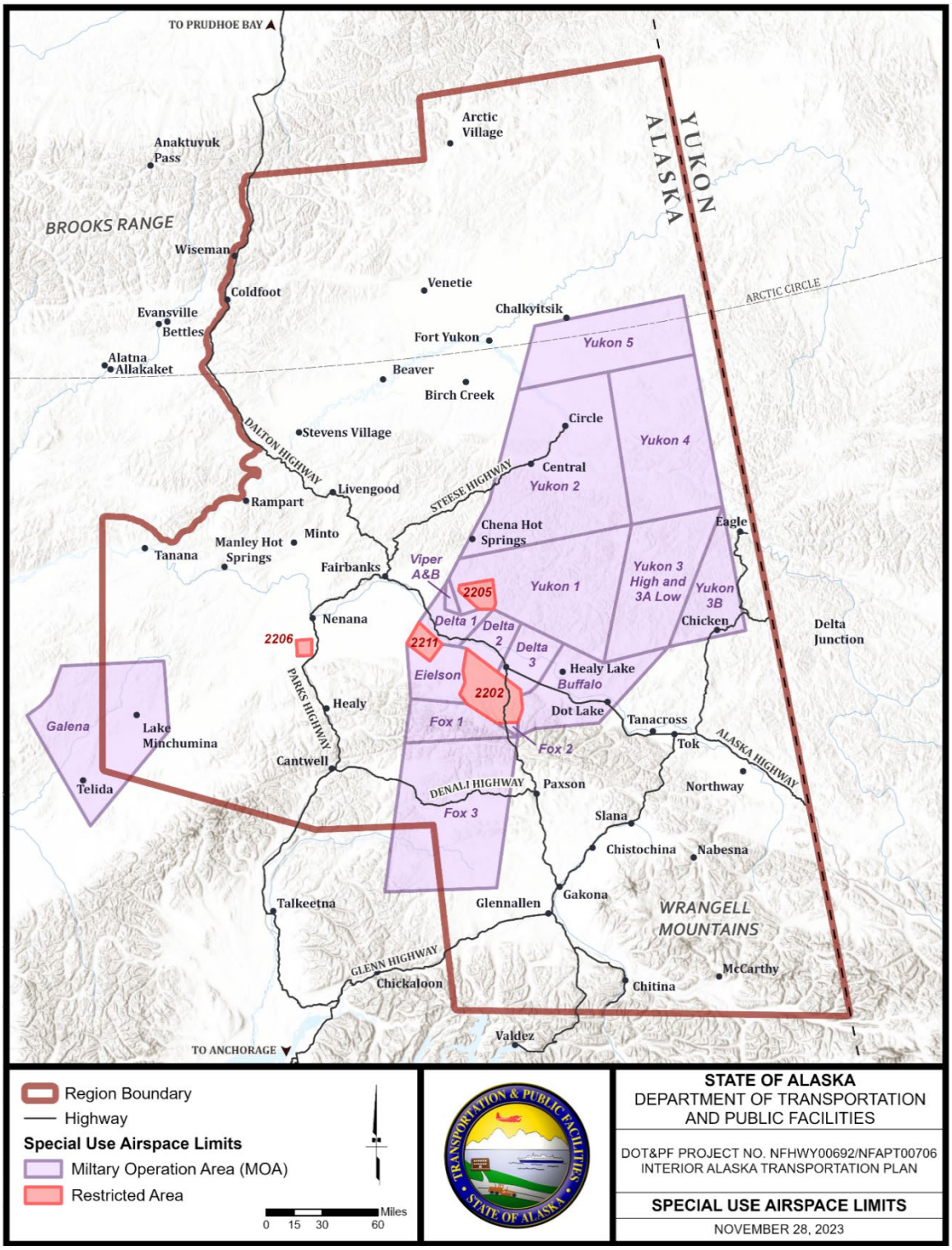


Figure 5. Existing Military Operations Areas in Alaska. Adapted from: J-BER Special Use Airspace Map
Note: This figure is for general awareness of Military Operations Areas only, not for navigation.

2.7 Existing Routes

The route structure in the IATP area (*Figure 6*) looks markedly different than route structures in the rest of Alaska. The IATP area includes the medium hub of Fairbanks International and a single regional hub (Fort Yukon). Comparatively, DOT&PF's *Southeast Transportation Plan* area has six regional hub airports and the small hub of Juneau International Airport; DOT&PF's *Northwest Transportation Plan* area has six regional hub airports; DOT&PF's *Southwest Transportation Plan* area has six regional hub airports; and DOT&PF's *Yukon-Kuskokwim Transportation Plan* area has five regional hub airports. The hub-spoke route structure is common across most of the state and within these other planning areas, a structure in which each regional hub provides primary air service to multiple outlying communities by air carriers based out of the hub airports.

The IATP region is dominated by activity originating out of Fairbanks International, with other routes appearing less obvious. Most communities in the IATP region receive air service from the Fairbanks International hub. However, there are a handful of other airports that serve as origin points for routes, most notably Fort Yukon, Gulkana, and Tok.

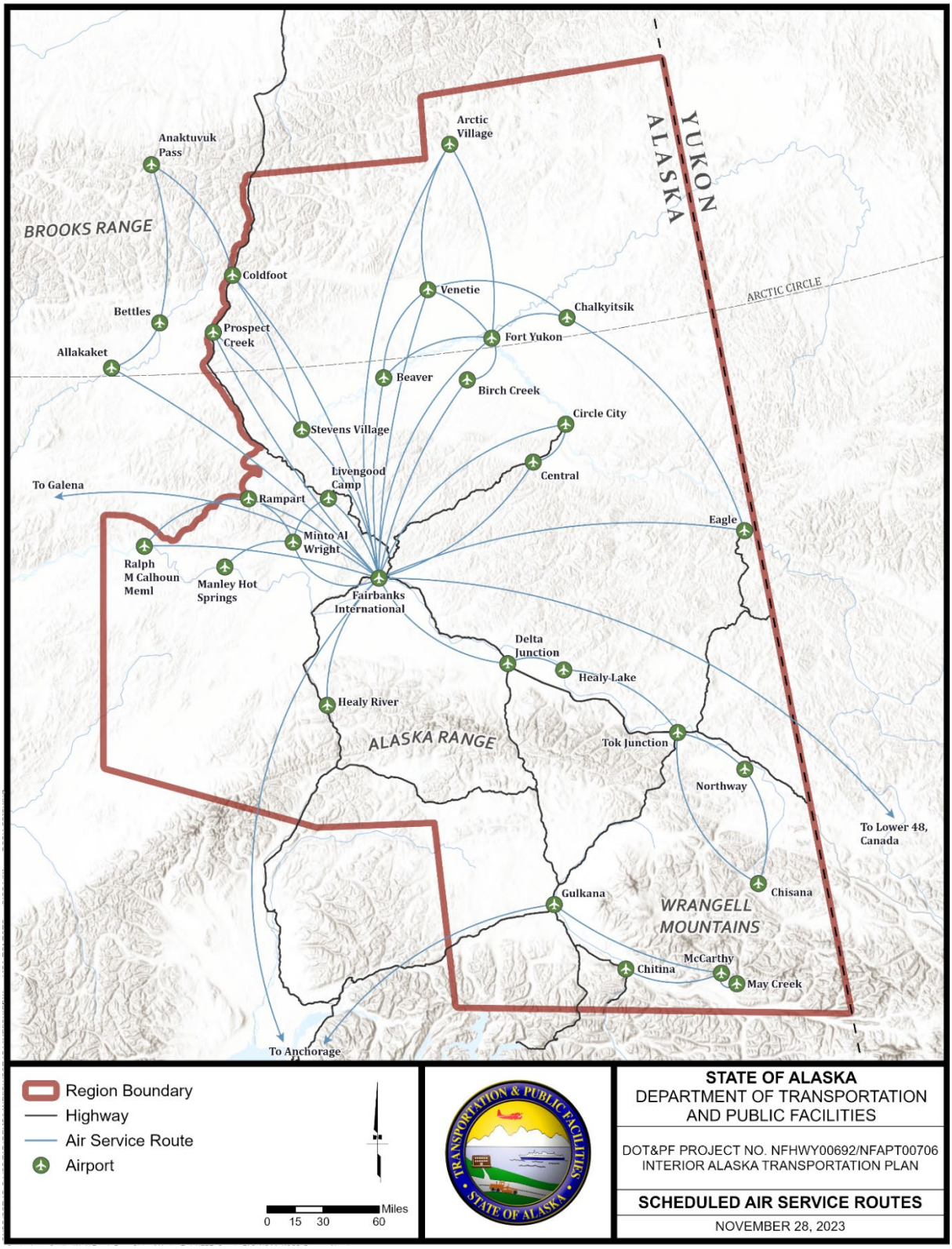


Figure 6. Scheduled Air Service Route Map

2.8 Intermodal Connection Points

Figure 7 shows the airports in the IATP region distinguished by whether they are on-road or off-road. The AASP defines "off-road" as meaning that the airport lacks year-round access to the National Highway System. Of the 62 airports, 40 are on-road, and 22 are off-road.

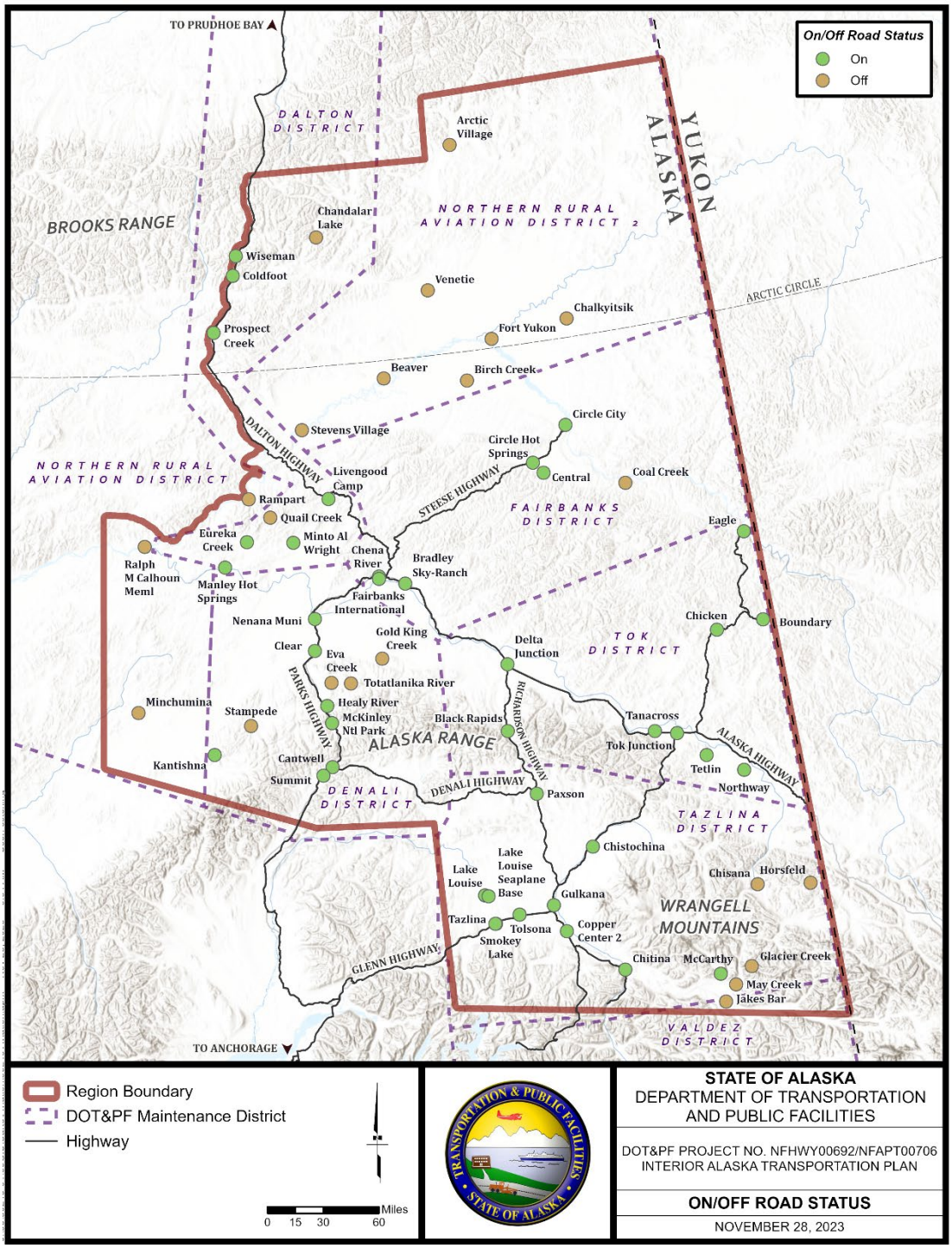


Figure 7. IATP Airports by On/Off Road Status

The off-road airports provide the only year-round mode of access to their communities. These facilities are vital to the safety, survivability, and quality of life of these communities. The several off-road airports not located near a community are critical landing spaces and access points to remote, roadless regions.

The 40 on-road airports are part of the intermodal transportation network. Communities, businesses, and agencies are able to use a combination of roads and airports to conduct business, send and receive supplies, transport people and goods, and deliver services. Several airports in the IATP region are popular as "jumping off" points. People reach the airport by road, then fly out to remote areas from there.

The availability of more than one access mode has been beneficial during various weather events and natural disasters. When one mode has become temporarily unusable, the other mode has maintained access to communities. When flooding impacts road access, the airports may be left unimpacted. When wildland fires cause roads to be shut down, airports on either side of the fire still connect communities and agencies responding to the fire. When weather events prevent safe flight, the road system enables people or goods to complete their travel. In one instance of an unexpected weather event that caused numerous aircraft to land in between their origin and intended destination, the road system became a vital backup mode. In October 2022, approximately 17 commuter aircraft were diverted to Nenana Airport from Fairbanks International due to unpredicted heavy freezing fog in the Tanana Valley. One of the flights was a medevac, and the patient was able to be transported to the intended medical facility by connecting with ground transport from Nenana. Other passengers were able to catch ground transportation to reach their intended destinations before weather lifted.

Since the IATP region, like most of Alaska, does not have extensive road network redundancy with various alternative surface routes available to travelers, the availability of both roads and airports is important for preventing communities in this region from becoming isolated when one mode becomes unusable.

2.9 Aircraft Fleet Operating in IATP Region

Although the IATP region accommodates aircraft of nearly all types and sizes – wide body cargo jets, military jets and helicopters, commuter aircraft, small recreational aircraft, aircraft on tundra tires and floats, and more – there are clear workhorses. The bulk of the transportation of people and goods by air is accomplished with a fairly steady fleet of aircraft that meet the needs of this region. Some of the most common air carrier aircraft serving the region include:

- Cessna 206 and 207 Stationairs
- Cessna 185 Skywagons
- Cessna 208 Caravans
- Beechcraft King Air 200s
- Piper PA-18 Super Cubs
- Piper PA-31 Navajos
- De Havilland Beavers

Table 26 identifies air carriers currently operating in the IATP region, the airports at which they are based, their fleet, and notes about what types of service they provide.

Table 26. Air Carriers Currently Operating in the IATP Region

Carrier	Base	Fleet	Remarks
40-Mile Air	Tok	(5) **Cessna C206 Stationairs** (1) **Cessna C207 Stationair** (1) Cessna 185 Skywagon (6) **Piper PA-18 Super Cubs** (1) Piper PA-31 Navajo (2) Robinson R44 Raven helicopters	Scheduled service from Tok to Healy Lake, Delta, Fairbanks, Chisana, Northway, and Chicken. Charter service available.
Copper Valley Air Service	Gulkana Airport, Glennallen	(1) Cessna 180 Skywagon (1) Cessna 172 Skyhawk (2) **Cessna 206 Stationairs** (1) Piper PA-12 Super Cruiser (1) De Havilland DHC-2 Beaver	Scheduled service to McCarthy and May Creek. Partners with Reeve for service out of Anchorage. Charter service available.
Coyote Air	Coldfoot	(2) **De Havilland Beavers** (1) Cessna 185 (1) Cessna 206 Stationair on floats	Charter service out of Coldfoot in the summer.
Ellis Air Taxi	Gulkana Airport, Glennallen	**Cessna C206 Stationair** **Cessna 185** **Piper Super Cub** Piper Twin Engine Howard DGA-15P	Scheduled service to McCarthy, May Creek, and Kennicott. Charter service available.
Everts / Tatonduk Flying Service	Fairbanks	(4) **Cessna 208 Caravans** (3) Pilatus PC-12s (4) McDonnell Douglas DC-6As (1) Curtiss C-46 (6) MD-80s (3) Cessna 408 SkyCouriers (first one delivered in October 2023)	Doing business as Everts Air. Scheduled and charter passenger services out of Fairbanks with Pilatus PC-12 or Cessna Grand Caravan. Fairbanks to Arctic Village, Eagle, Fort Yukon, and Venetie. Scheduled freight service out of ANC for 10 major hubs (none in IATP area) and charter/flag stop services to anywhere they can land.
Guardian Flight	Fairbanks	Learjet 45 **Beechcraft King Air 200** Beechcraft King Air C90B Cessna 204 Caravan Pilatus PC-12 Airbus H130 Airbus AS350B3e	Medevac operations throughout the region.
LifeMed Alaska	Fairbanks	Learjet 31 Learjet 35 Learjet 45 **Beechcraft King Air 200**	Fixed-wing medevac operations throughout the region.
Maritime Helicopters	Fairbanks & Deadhorse (seasonal)	(8) Bell BHT 206 L4 Long Rangers (7) Bell BHT 407s (2) Air Bus Euro BO-105s	Helicopter charters.
Reeve Air Alaska	Anchorage	**Piper PA-31 (Navajo)/T-1020**	Scheduled service from Anchorage to GKN 2x/week. Partners with Copper Valley Air Service. Charter service available.
Tok Air Service	Tok	(3) **Piper PA-18 Super Cubs** (1) **Cessna 185 Skywagon**	Charter service available.

Carrier	Base	Fleet	Remarks
Warbelow's Air Ventures	Fairbanks	(15) **Piper PA-31 Navajo/T-1020s**	Scheduled passenger service to Beaver, Central, Circle, Manley Hot Springs, Minto, Rampart, and Stevens Village. Charter and freight services available.
Wrangell Mountain Air	McCarthy	(1) **Cessna 185 Skywagon** (1) Cessna 172 Skyhawk (3) **Cessna 206 Stationairs** (1) **De Havilland DHC-2 Beaver**	Scheduled daily service between McCarthy and Chitina. Charter service available.
Wright Air Service	Fairbanks	(4) Helio H-250/295/395s (2) **Cessna C206 Stationairs** (2) **Piper PA-31 (Navajo)/T-1020s** (18) **Cessna 208 Caravans** (1) Beechcraft Bonanza A36	Service to Arctic Village, Chalkyitsik, Coldfoot, Fort Yukon, Venetie, Birch Creek, and Minchumina. Charter service available.

Aircraft in bold text are aircraft performing the majority of reported scheduled carrier operations (BTS T-100 statistics). Fleet & service information sourced from carrier web pages, BTS T-100 data, and the Part 135 Aircraft Registry.

For the sake of documenting changes since the *2010 IATP*, several carriers operating at that time no longer operate in the IATP region. These carriers include:

- Arctic Circle Air Service: Acquired by the parent company of Frontier Alaska in October 2009 and merged into the Era Alaska/Frontier Alaska operation.
- Era Aviation: Bought out by The Frontier Alaska Group in February 2009 along with Frontier Flying Service and Hageland Aviation. The three carriers operated under the marketing name of Era Alaska/Frontier Alaska, which subsequently changed the marketing name of all the airlines to Ravn Alaska/Ravn Connect brands. Ravn has since gone bankrupt and been revived as Northern Pacific, but it no longer serves the IATP region.
- Larry's Flying Service: Indicated as "Permanently Closed" in a web search.
- Ravn Alaska: Ravn has been revived from bankruptcy, doing business as Northern Pacific. The route map and web page show no service to the IATP region.
- Tanana Air Service: A January 14, 2022 *Alaska Business* online article reports that Grant Aviation merged with Tanana Air Service and Shannon's Air Taxi. Grant does not appear to provide service in the IATP region.

2.10 AIP Funding History

The IATP region has seen few major airport construction projects and a smaller share of the statewide federal AIP funding in the years since the *2010 IATP* was published. Table 27 summarizes the historical and recent AIP funding in the IATP region compared to AIP funding statewide. The data is for Nonprimary facilities only, due to the difference in how Primary airports are funded through the AIP and how that skews the totals. The numbers in the table show that, since FY09, the IATP region nonprimary airports have received *less than half* the share of total nonprimary funding than they received prior to FY09.

Table 27. AIP Investment in IATP Airports (Nonprimary Facilities Only)

	2007-2011 NPIAS	2023-2027 NPIAS
Alaska Nonprimary Airports in NPIAS	234	226
IATP Nonprimary Airports in NPIAS	36	33
Percent of Alaska Nonprimary Airports in IATP Region	15%	15%
	FY82-FY08	**FY09-FY22**
Total AIP Grants - all Nonprimary Alaska Airports	$1.18 billion	$1.50 billion
Total AIP Grants at IATP Nonprimary Airports	$124.5 million	$65.2 million
Percent of AIP Grant Total for IATP Nonprimary Airports	10.5%	4.3%

Note: "AIP Investment" includes other special funding, such as American Recovery and Reinvestment Act (ARRA), Coronavirus Aid, Relief, and Economic Security Act (CARES Act), and American Rescue Plan Act (ARPA) funding

At the time the *2010 IATP* was developed:

- Approximately 15 percent of NPIAS nonprimary facilities were within the IATP region (the 2007-2011 NPIAS lists 234 nonprimary airports in Alaska, 36 of which are within the IATP region).
- The IATP region nonprimary airports received approximately 10.5 percent of total AIP grant funding during the FY82-FY08 period (approximately $1.18 billion for all AK nonprimary airports, roughly $125 million of which was awarded to IATP nonprimary airports).
- Thus, 15 percent of the state's nonprimary airports (those in the IATP region) received about 10.5 percent of the nonprimary funding during this time period.

Since the *2010 IATP*, the percentage of total grant funding awarded to IATP nonprimary airports (FY09-FY22) has dropped considerably.

- The IATP region still has roughly 15 percent of the state's nonprimary airports (33 of the 226 listed in the 2023-2027 NPIAS).
- The percentage of AIP grant funding awarded to these facilities has dropped to approximately 4.3 percent of the total during the FY09-FY22 period (approximately $65 million of $1.5 billion awarded to all nonprimary facilities).
- Thus, 15 percent of the state's nonprimary airports (those in the IATP region) received about 4.3 percent of the nonprimary funding during the FY09-FY22 time period following the data reported in the *2010 IATP*.
- In the FY09-FY22 period, the IATP region nonprimary airports received *less than half* the share of total nonprimary funding than they received prior to FY09.

In very recent years, there has been a boost in federal funding with combined funding from the AIP, the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020, the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA), the American Rescue Plan Act (ARPA) of 2021, and the Bipartisan Infrastructure Law (BIL) enacted as the Infrastructure Investment and Jobs Act (IIJA) of 2021. This has not, however, translated to a windfall of capital funding, as much of the special funding has been allocated to operational expenses, and inflation has significantly diminished the impacts of funding intended for capital investments.

The $49 million in CARES funding was allocated to operational expenses, with $11 million specifically designated for deferred maintenance projects. CRRSAA provided around $26.5 million in funding for rural airports, allocated specifically to primary airports and restricted to operational costs. The DOT&PF received approximately $35 million through ARPA funding, which was also restricted to operational costs. The 2023-2027 NPIAS narrative indicated the majority of airports nationwide elected to use most of the funds provided through the CARES Act, CRRSAA, and ARPA to offset operating costs and/or debt service rather than for new capital investment.

The IIJA is the only special funding that is expected to provide a boost to capital investments at airports. The IIJA is anticipated to add approximately $50 million per year to the Rural Airport System over the five-year period that began in 2022 (the BIL was signed in late 2021). While this extra funding will be of some help in meeting more needs than typical AIP funding levels support, inflation has greatly reduced the impact that this funding will have. Due to inflation and the

competition to get contractors to bid, recent construction bids have been coming in 50-70 percent (sometimes more) higher than engineer's estimates. The "extra" funding is thus anticipated to primarily cover inflated costs of construction, not fund double the usual number of projects.

Additionally, the amount of AIP entitlement funding that an airport receives annually has remained static for many years while the costs for all improvements have increased significantly. Entitlement funding is $150,000 per year for most general aviation airports or $1 million for general aviation airports with greater than 10,000 passenger boardings and certificated air carrier service. A static level of funding means that far less work is able to be accomplished each year as the costs rise.

2.11 Operational Costs

The cost to operate and maintain rural airports in the IATP region has more than doubled over the costs presented in the *2010 IATP*. Table 28 shows the most recent five-year average for annual operational expenses compared against the 2010 data. The table also includes the most recent five-year annual average revenue. The most recent annual operational expenses and revenue are sourced from the AASP internal website statistics. The expenses include maintenance and operations costs such as personnel, utilities, and fuel for equipment, runway lights, and some buildings. Data is available for DOT&PF airports only.

The five-year average annual cost to maintain the DOT&PF-owned airports in the IATP region is 2.3 times what it was 16 years ago (data from FY18-FY22 vs FY02-FY06). The cost to maintain the airports is nearly ten times the revenue generated by these airports. Only a small number of the airports have tenants and activity that generates an appreciable amount of revenue. Eight of the 38 facilities listed in the table generate 91 percent of the total revenue. These eight facilities are Gulkana, Healy River, Tok, Coldfoot, Eagle, Fort Yukon, McCarthy, and Northway. As can be seen in Table 28, these airports account for most of the revenue due to the number of leases/permits at each and, additionally, due to fuel sales and concessions. Some of the other airports have a small number of paid leases/permits (one or two), but over half the DOT&PF airports in the IATP region have zero paid leases/permits.

Table 28. Operational Costs & Revenue of DOT&PF-Owned IATP Airports

Airports	5-Year Average Operational Cost (FY02-FY06) Table 0-52 2010 IATP	5-Year Average Operational Cost (FY18-FY22) AASP website	5-Year Average Annual Revenue (FY18-FY22) AASP website	Number of Paid Leases and Permits
PAVED AIRPORTS				
Clear	$23,997	$9,760	$1,659	1
Gulkana	$78,545	$128,645	$27,702	9
Healy River	$9,795	$7,244	$23,914	13
Tok	$33,062	$25,910	$19,360	12
SUBTOTAL - PAVED	**$145,399**	**$171,559**	**$72,635**	
UNPAVED AIRPORTS				
Beaver	$32,902	$62,741	$2,354	1
Birch Creek	$24,250	$105,555	$646	1
Boundary	$2,731	$62	$0	0
Central	$18,896	$33,423	$100	0
Chalkyitsik	$28,299	$96,017	$0	0
Chandalar Lake	$934	$389	$1,061	0
Chicken	$15,298	$22,661	$150	0
Chisana	$0	$0	$0	0
Chistochina	$143	$0	$0	0
Chitina	$6,706	$32,197	$2,793	2
Circle City	$21,894	$52,266	$200	0
Circle Hot Springs	$15,277	$419	$232	0
Coldfoot	$55,396	$240,800	$24,593	6
Copper Center 2	$2,010	$263	$0	0
Eagle	$41,338	$52,530	$11,246	3
Fort Yukon	$64,112	$89,233	$23,574	5
Gold King Creek	$0	$20	$0	0
Kantishna	$0	$0	$0	0
Lake Louise	$0	$0	$90	0
Livengood Camp	$545	$8,753	$1,095	1
Manley Hot Springs	$5,524	$120,509	$30	0
May Creek	$0	$0	$0	0
McCarthy	$14,367	$24,740	$11,627	4
Minchumina	$41,156	$84,754	$2,418	2
Minto	$2,245	$34,439	$0	0
Northway	$31,643	$72,736	$8,341	5
Prospect Creek	$151	$0	$0	1
Rampart	$46,836	$104,240	$100	1
Stevens Village	$30,570	$91,371	$50	0
Summit	$1,003	$641	$100	0
Tanana	$65,712	$117,574	$2,587	1
Tazlina	$0	$0	$0	0
Tetlin	$9,348	$42,284	$0	0
Wiseman	$548	$300		0
SUBTOTAL – UNPAVED	**$579,842**	**$1,490,897**	**$93,387**	
TOTAL	**$725,233**	**$1,662,476**	**$166,022**	

2.12 Security

Security systems and security plans are not critical needs for most of the airports in the IATP region. Other than Fairbanks International, none of the airports in this region are subject to the Transportation Security Administration (TSA) requirements imposed on larger, busier airports. In Alaska, airports that serve a scheduled passenger airline operating aircraft with 61 or more seats are required to have a complete TSA approved Airport Security Program. The airports in the state that meet this criterion are designated as FAA Part 139 and TSA Category I, II, or III airports, and none of the IATP airports (other than FAI, which is a TSA Category II) are designated as such.

Nearly all the public-use airports in the IATP region are considered general aviation airports by the TSA. The TSA issues guidance and recommendations for airport security at general aviation facilities, but these are best practices rather than requirements. The guidance in TSA's June 2021 *Security Guidelines for General Aviation Airport Operators and Users* advises a risk-based approach to determining security threats and planning security enhancements. The risk is relatively low at the IATP region's rural airports, but access control, security signage, and security awareness education are worth considering at all airports.

The greatest security concerns at the IATP airports may be people, vehicles, and wildlife inappropriately using/occupying runways and apron areas, creating safety and vandalism issues. At airports where this is a common problem, fencing, access control, and signage should be considered to deter unauthorized use of airport facilities. Only five of the IATP area airports have airport perimeter fencing, and the only facility with full perimeter fencing is FAI. Four other facilities have partial perimeter fencing (Fort Yukon, Nenana Muni, Northway, and Tok Junction), but the unfenced areas still allow wildlife and unauthorized users access to the airport. 5010 Airport Master Record inspection reports include remarks such as, "Airport is unsecure, caution for wildlife, pedestrians, vehicles, and ATV traffic on airport," and "Moose, caribou, bears, wolves, and/or migratory waterfowl in the vicinity" at nearly every one of the airports in the IATP area.

3.0 AVIATION FORECASTS & CRITICAL AIRCRAFT

3.1 Introduction

This chapter presents a forecast of air traffic for the IATP region for target year 2040 using base year data from 2022. Regional aviation forecasts are intended to help define airports' roles within the system, prioritize airport development, and determine Runway Design Codes (RDC). The RDC is based on the Aircraft Approach Category (AAC), Airplane Design Group (ADG), and the visibility minimum needed to determine certain airfield design standards that apply. These air traffic forecasts were developed using the accepted aviation industry standard of historical trend analysis with smoothing, as influenced by relevant national, regional, and local factors. The forecasts are consistent with guidance provided in FAA's AC 150/5070-7 *The Airport System Planning Process*, FAA's AC 150/5070-6B *Airport Master Plans*, and the FAA Office of Aviation Policy and Plan's *Forecasting Aviation Activity by Airport*.

The forecasts include projections for operations, enplanements, mail and cargo, and based aircraft, as well as a discussion of future critical aircraft for the region's airports.

3.2 IATP Area in Forecasting Context

The IATP region has less of a hub-spoke air route structure than most other regions of Alaska. The only airports classified by the AASP as hubs within this region are Fairbanks International Airport (FAI) (Small Hub) and Fort Yukon (Regional Hub). As can be seen in the route structure map in *Figure 8*, most activity originates out of FAI. Forecasts for FAI are not included within this effort, but FAI's key role as an activity hub is considered regarding impacts to other facilities within the region.

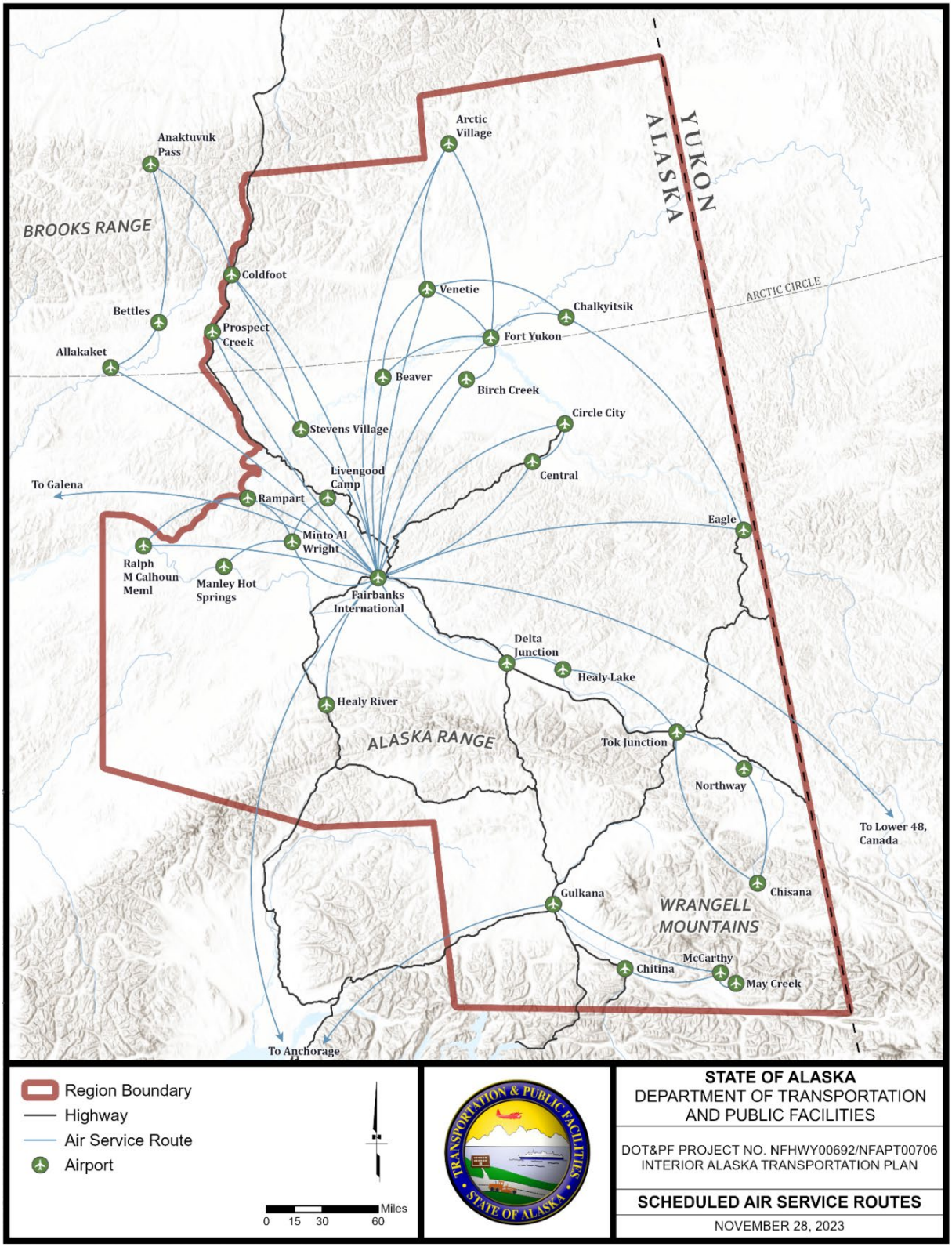


Figure 8. Scheduled Air Service Routes

3.3 Data Sources

Data available for airports in the IATP region vary greatly – some airports have data reported through most of the official sources, while many have FAA's Form 5010 Airport Master Record as the only source of activity data. Much of the data is user-reported, so its reliability is only as good as the consistency and accuracy of the reporting carrier, and some years/facilities have unreported or misreported statistics. Information sources referenced for these forecasts are described in Table 29, with remarks included about the availability and limitations of the data for this region.

Table 29. Information Sources, Availability, & Limitations for IATP Aviation Forecasts

Information Source	Availability & Limitations
FAA's Terminal Area Forecast (TAF): The TAF is a detailed FAA forecast planning database produced each year covering airports in the NPIAS and includes passenger enplanements, itinerant aircraft operations, local aircraft operations, total operations, total instrument operations, and based aircraft. Data in this report is from the 2022 TAF.	34 of the 62 IATP facilities are NPIAS facilities and have data reported in the TAF. The 28 non-NPIAS facilities in the IATP region do not have any data available through this source. The TAF count only includes passengers on scheduled air carriers reporting into the system and often misses enplanements by air taxi companies.
Bureau of Transportation Statistics (BTS) T-100 Domestic Segment & Market (U.S. Carriers): The Air Carrier Statistics database, also known as the T-100 data bank, contains domestic and international airline market and segment data. Certificated U.S. air carriers are required to report monthly air carrier traffic information using Form T-100. The data are collected by the Office of Airline Information, Bureau of Transportation Statistics. The data includes statistics used in calculating enplanements/deplanements, enplaned/deplaned cargo, enplaned/deplaned mail, operations, and aircraft type. This database is frequently used by the aviation industry, the press, and the legislature to produce reports and analyses on air traffic patterns, carrier market shares, as well as passenger, freight, and mail cargo flown within the aviation mode.	Data is only reported for 34 of the IATP facilities. Data relies on accuracy and consistency of carrier reporting, and some data is not reported or misreported (e.g., attributed to the wrong airport). All years but the most recent (2022) are available through the AASP internal website statistics. However, due to carriers often using the wrong three-letter Airport ID to designate activity, not all the data is captured by the AASP, and use of the data through either the AASP or the original T-100 reports requires careful analysis.
Airport Data and Information Portal (ADIP): The FAA's ADIP is a data repository of airport and aeronautical data. This repository includes airport data collected from the FAA's 5010 Airport Safety Inspection program, FAA-published approach plates, and presents airport map imagery. Airport 5010 inspections collect data on airport facilities, services, activities, and obstructions intruding into the airport's critical safety areas.	Most of Alaska's public-use, non-certificated airports get inspected and have airport data updated once every three years, on average. The 5010 Airport Safety Inspection program is contracted to a single party who visits each facility once during every three-year cycle. Data on operations is typically an educated guess, due to most facilities being entirely unmanned, no traffic counting systems in place, and many users not required to report their activity. Even with these limitations, the 5010 data is the only data set that includes all the IATP facilities.
National Based Aircraft Inventory Program: A data repository recording all based aircraft at Nonprimary NPIAS airports. These airports are required to submit their based aircraft to the program's website to be validated with the FAA's Aircraft Registration database. Specific details on the based aircraft at each airport is limited to authorized personnel (i.e., airport managers, sponsors). However, summary reports of the total based aircraft at each airport are made publicly available on the program's website.	Data is only available for the Nonprimary NPIAS facilities in the IATP region. Data often matches what is reported on Form 5010, but not always. Data for the Primary airport (FAI) is from the ADIP, since Primary airports are not included in the National Based Aircraft Inventory. The National Based Aircraft Inventory only reports current based aircraft. Historical based aircraft counts are included in the TAF.
Alaska Aviation System Plan (AASP) Forecasts (2011): Activity trends and critical aircraft through forecast year 2030, presented by borough/census area and by airport.	All IATP airports are included. Forecasting activity is for the 2008-2030 period and is now more than 10 years old. Some borough and census area boundaries have changed since 2011.

Information Source	Availability & Limitations
2010 Interior Alaska Transportation Plan (IATP) Aviation Forecasts: Developed for the 2010-2030 period for the IATP Region.	The IATP update studies the same region defined in the *2010 IATP*. Forecasts for the 2010 plan generally correlated aviation activity growth with population growth.
DOT&PF's AASP Website & Database: The AASP public website is the repository for past and existing system plan documents and public data. The AASP internal website (accessible by those with a registered account) is the portal for aviation data and reporting for Alaska, including airport facilities, needs, capital projects and inspection data, facility documents, photos and sketches, basic airport information, activity, and operational statistics, and more.	Data referenced and used for these forecasts include current and ultimate Classifications & Performance Measures, the 2011 Forecasts, AAC and ADG designations, and BTS historical statistics.
Upper Tanana Airport Planning Study (UTAPS) Blended Forecast (2023): Forecasts for Tok Junction and Tanacross Airports for the 2019-2045 period.	Forecast area includes most of the populations of the Southeast Fairbanks and Copper River Census Areas, which are also wholly or partially within the IATP region boundary. Forecast factors are applicable to larger regions, but the activity forecasts are very specific to these two airports (Tok Junction and Tanacross). Although the UTAPS study considered two additional airports (Northway and Gulkana), forecasts for these airports were not included in the final UTAPS report. An ALP update for Gulkana was prepared separately from the UTAPS report, and the ALP narrative includes forecasts for Gulkana.
Gulkana Airport Layout Plan Aviation Forecasts (2023): Forecasts for Gulkana Airport for the 2019-2045 period.	Aviation forecasts in the ALP update narrative will be used for Gulkana in the IATP aviation activity forecasts. Factors influencing the forecasts and critical aircraft determination are relevant to other airports within the region, as well.
Nenana Municipal Airport Forecasts (2022): Activity trends and critical aircraft for the 2021-2031 period for the Nenana Airport (ENN).	Aviation forecasts for ENN were approved by the FAA and will be used for this facility in the IATP aviation activity forecasts. Factors influencing the forecasts and critical aircraft determination are relevant to other airports within the region, as well.
FAI Master Plan (December 2014): Activity trends. and critical aircraft for the 2010-2030 period for FAI.	Air taxi, general aviation, and critical aircraft trends from these forecasts influence activity at other airports served out of Fairbank International.
Northwest Alaska Transportation Plan (NWATP) Update 2022 – Northwest Alaska Air Traffic Forecasts: Aviation activity forecasts for the 2018-2040 period.	Primarily a reference for fleet mix and critical aircraft considerations. Many of the forecast factors and aviation activity characteristics of the Northwest Alaska Region are distinct from the IATP Region.
Airport Master Plans: Master Plans for individual facilities typically include forecasts approved by the FAA and are useful for creating more specific and accurate regional forecasts.	Only a small number of airports in the IATP region have had Master Plans completed, and other than the concurrent studies for Nenana, Gulkana, and the UTAPS airports, Master Plans for airports in this region are more than 20 years old. No Master Plans, other than FAI's 2014 Master Plan, were used in support of these IATP regional forecasts.
National Park Service Visitor Use Statistics: (STATS - Welcome to Visitor Use Statistics (nps.gov)) Annual recreation visitors from when each park began reporting to the last calendar year.	An indicator of tourism trends for the National Parks and Preserves within the IATP Region boundary.
Mining & Resource Development: News media, mineral development company websites, and Native corporation websites were referenced for mining activity in the IATP region.	Information is subjective, no statistics or trends available.

Information Source	Availability & Limitations
Air Carrier Input: Carrier input was referenced from several recent aviation studies conducted in this region and in neighboring regions. A small amount of carrier input was provided in support of this IATP update.	Air carrier and airport user input from the 2023 UTAPS, 2020 NWATP, and 2021 FAA Alaska Aviation Safety Initiative (FAASI) were used in support of these forecasts. These other studies have all taken place within the past three to five years, and the carrier input is considered current and applicable to the IATP region. Despite outreach efforts, this study received very limited engagement from air carriers contacted for this IATP update. There is a perceived "survey fatigue" due to the multitude of State and FAA surveys conducted over the past several years covering this area.
Alaska Department of Commerce, Community, and Economic Development Division of Community and Regional Affairs: Historical population demographics are available for communities through the DCRA database at DCRA Community Database (arcgis.com)	Not all airports are co-located with a community – many of the facilities are in remote locations with no nearby population. Demographics were considered primarily by census/borough totals and trends. Per the scope, "Contributing factors will be directly correlated to the regional socio-economic and demographic forecast summary information developed within Chapter 3." However, project scheduling precluded the availability of this information at the time the aviation forecasts were developed.
Alaska Department of Labor and Workforce Development (DOLWD), Research and Analysis Section: Population and Census data, Labor Market Information, Projections, and other economic data for Alaska is available through this division, available at Research and Analysis Department of Labor (alaska.gov)	Population projections available by U.S. Census Bureau. Employment statistics are available for the DOLWD-defined Interior Region, which includes a large portion of the IATP area.

3.4 Base Year (2022) Estimates

The forecasts include projections for operations, enplanements, cargo, based aircraft, and critical aircraft. Base year estimates for activity in each of these categories are included in this section. Table 30 includes a description of how base year activity was determined for each category.

Table 30. Forecast Data Categories & How Statistics Were Derived

Data Category	How Statistics (Base Year Data & Trends) Were Derived
Operations	Base year (2022) operations are derived from data recorded on FAA's Form 5010 and reported through the ADIP for most facilities and from the TAF for Fairbanks Intl (FAI) and Fort Yukon (FYU). The Form 5010 data reported through the ADIP matches base year TAF data for all facilities reported through the TAF data, except for FAI and FYU. The TAF does not report data for all facilities in the IATP, which is why Form 5010 data available through the ADIP was used to capture information for a greater number of facilities. TAF data was analyzed primarily to determine historical trends (historical data is not available through the ADIP) and to compare this plan's aviation forecasts with the FAA's forecasts.
Enplanements	Enplaned passengers are presented as the representative passenger activity statistic for each facility. Base year enplanement data is from the USDOT Bureau of Transportation T-100 Domestic Market data. For the IATP facilities, enplaned passengers are generally roughly equal to deplaned passengers, so while either data set is representative of passenger activity, enplanements are more typically reported in airport planning exercises. Historical enplanement trends were analyzed in the BTS data, and TAF enplanement data were analyzed for forecast trends.
Deplaned Freight & Mail	Deplaned freight and mail statistics are presented, as opposed to enplaned statistics, because the deplaned volumes are more representative of the activity at each facility. Very few of the facilities have significant volumes of mail or freight that is boarded onto aircraft from the facility and destinated for another location. Most of the facilities in the IATP region are recipients of sizeable volumes of mail and freight that support the local community and economy. The volumes of inbound freight and mail are more telling statistics than the volumes of outbound freight and mail. Base year data and historical trends are derived from the USDOT Bureau of Transportation T-100 Domestic Market data.
Based Aircraft	The primary source for based aircraft data is the FAA's National Based Aircraft Inventory. For facilities not reported through this source, data from FAA's Form 5010 – reported through the ADIP – is used. For airports with recent or concurrent studies, it is assumed that based aircraft counts were more thoroughly and accurately obtained, and data from these studies are used, where available. Based aircraft trends were analyzed in TAF data.
Critical Aircraft	Current critical aircraft were determined through existing Airport Layout Plans, current carrier fleet mix and use in the region, and aircraft type reported through BTS data. Future critical aircraft were largely determined by input from the carriers on planned fleet mix changes and from airport layout plans' ultimate design aircraft.

Although previous sections have presented airport information by AASP Classification, the forecasts will present information by borough/census area. The factors influencing aviation activity are more correlated to trends in demographics, economics, and developments tracked by borough/census area, which in the IATP region are often a factor of which sections of roadway the communities and airports lie on and which attractions, state and national parks, or economic development areas are in the vicinity. For example, a major tourist attraction or mine development in one part of the region may impact aviation activity at airports of all classifications and service levels in the vicinity but have no impact on airports distant from that attraction/ development. Table 31 presents base year activity estimates by airport within each borough/census area and totaled for each borough/census area. *Figure 9* shows the IATP region with the borough/census area boundaries and airports within the IATP area.

Table 31. IATP Airports – Base Year Airport Activity Estimates by Airport and by Borough/Census Area

Name	ID	Total Operations	Enplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)	Based Aircraft
COPPER RIVER CENSUS AREA						
Chisana	CZN	150	85	37,640	4,098	0
Chistochina	CZO	1,600	No data	No data	No data	1
Chitina	CXC	1,750	No data	No data	No data	1
Copper Center 2	Z93	1,200	3	0	0	7
Glacier Creek	KGZ	60	No data	No data	No data	0
Gulkana	GKN	5,122	420	2,861	1,470	12
Jakes Bar	AK0	100	No data	No data	No data	0
May Creek	MYK	350	34	411	6,750	0
McCarthy	15Z	1,400	176	6,094	53,264	0
Paxson	PXK	-	No data	No data	No data	0
Tazlina	Z14	200	No data	No data	No data	1
Tazlina/Smokey Lake	5AK	500	No data	No data	No data	2
Tolsona Lake	58A	300	No data	No data	No data	2
COPPER RIVER CENSUS AREA TOTALS		**12,732**	**718**	**47,006**	**65,582**	**26**
DENALI BOROUGH						
Cantwell	TTW	2,350	No data	No data	No data	3
Clear	Z84	100	No data	No data	No data	1
Eva Creek	2Z3	-	No data	No data	No data	0
Gold King Creek	AK7	50	No data	No data	No data	1
Healy River	HRR	1,300	1,431	16,781	2,537	10
Kantishna	5Z5	1,200	0	0	0	0
McKinley Ntl Park	INR	3,200	No data	No data	No data	7
Stampede	Z90	30	No data	No data	No data	0
Totatlanika River	9AK	-	No data	No data	No data	0
DENALI BOROUGH TOTALS		**8,230**	**1,431**	**16,781**	**2,537**	**22**
FAIRBANKS NORTH STAR BOROUGH						
Bradley Sky-Ranch	95Z	120	No data	No data	No data	46
Chena River	2Z5	24	No data	No data	No data	6
Fairbanks International	FAI	112,256	510,137	17,977,506	408,345	569
FAIRBANKS NORTH STAR BOROUGH TOTALS		**112,400**	**510,137**	**17,977,506**	**408,345**	**621**
MATANUSKA-SUSITNA BOROUGH						
Lake Louise	Z55	300	No data	No data	No data	0
Lake Louise Seaplane Base	13S	1,100	No data	No data	No data	2
Summit	UMM	1,054	No data	No data	No data	0
MATANUSKA-SUSITNA BOROUGH TOTALS		**2,454**	**0**	**0**	**0**	**2**

SOUTHEAST FAIRBANKS CENSUS AREA						
Black Rapids	5BK	110	No data	No data	No data	0
Boundary	BYA	250	No data	No data	No data	0
Chicken	CKX	475	**34**	**3,354**	**11,270**	0
Delta Junction	D66	4,070	**44**	**1,4488**	**0**	16
Eagle	EAA	2,400	**650**	**119,037**	**105,591**	1
Horsfeld	4Z5	0	No data	No data	No data	0
Northway	ORT	15,800	No data	No data	No data	0
Tanacross	TSG	800	**0**	**0**	**0**	0
Tetlin	3T4	112	No data	No data	No data	0
Tok Junction	6K8	2,700	**404**	**19,037**	**955**	33
SOUTHEAST FAIRBANKS CENSUS AREA TOTALS		**26,717**	**1,132**	**142,876**	**117,816**	**50**
YUKON-KOYUKUK CENSUS AREA						
Arctic Village	ARC	1,650	1,548	568,137	214,390	0
Beaver	WBQ	500	924	188,958	19,558	0
Birch Creek	Z91	500	205	90,556	8,387	0
Central	CEM	4,000	37	9,772	19,527	2
Chalkyitsik	CIK	650	558	183,658	60,837	0
Chandalar Lake	WCR	300	45	10,667	0	0
Circle City	CRC	1,110	269	33,818	16,636	0
Circle Hot Springs	CHP	3,600	No data	No data	No data	4
Coal Creek	L20	200	No data	No data	No data	0
Coldfoot	CXF	1,000	5,212	4,675	0	3
Eureka Creek	2Z2	0	No data	No data	No data	0
Fort Yukon	FYU	8,377	4,728	1,008,028	627,027	0
Livengood Camp	4AK	100	No data	No data	No data	0
Manley Hot Springs	MLY	1,700	76	14,196	24,232	5
Minchumina	MHM	1,140	202	162,093	26,206	2
Minto Al Wright	51Z	1,000	138	13,169	22,047	0
Nenana Muni	ENN	6,000	0	11,826	153	13
Prospect Creek	PPC	498	831	4,775	0	0
Quail Creek	20K	80	No data	No data	No data	0
Ralph M Calhoun Meml	TAL	3,100	1,820	240,638	143,256	0
Rampart	RMP	300	490	109,485	13,654	0
Stevens Village	SVS	750	212	35,280	1,192	0
Venetie	VEE	1,900	1,392	633,971	294,045	0
Wiseman	WSM	270	No data	No data	No data	0
YUKON-KOYUKUK CENSUS AREA TOTALS		**38,725**	**18,687**	**3,323,702**	**1,491,147**	**29**
IATP REGION TOTALS		**201,258**	**532,105**	**21,507,871**	**2,085,427**	**750**

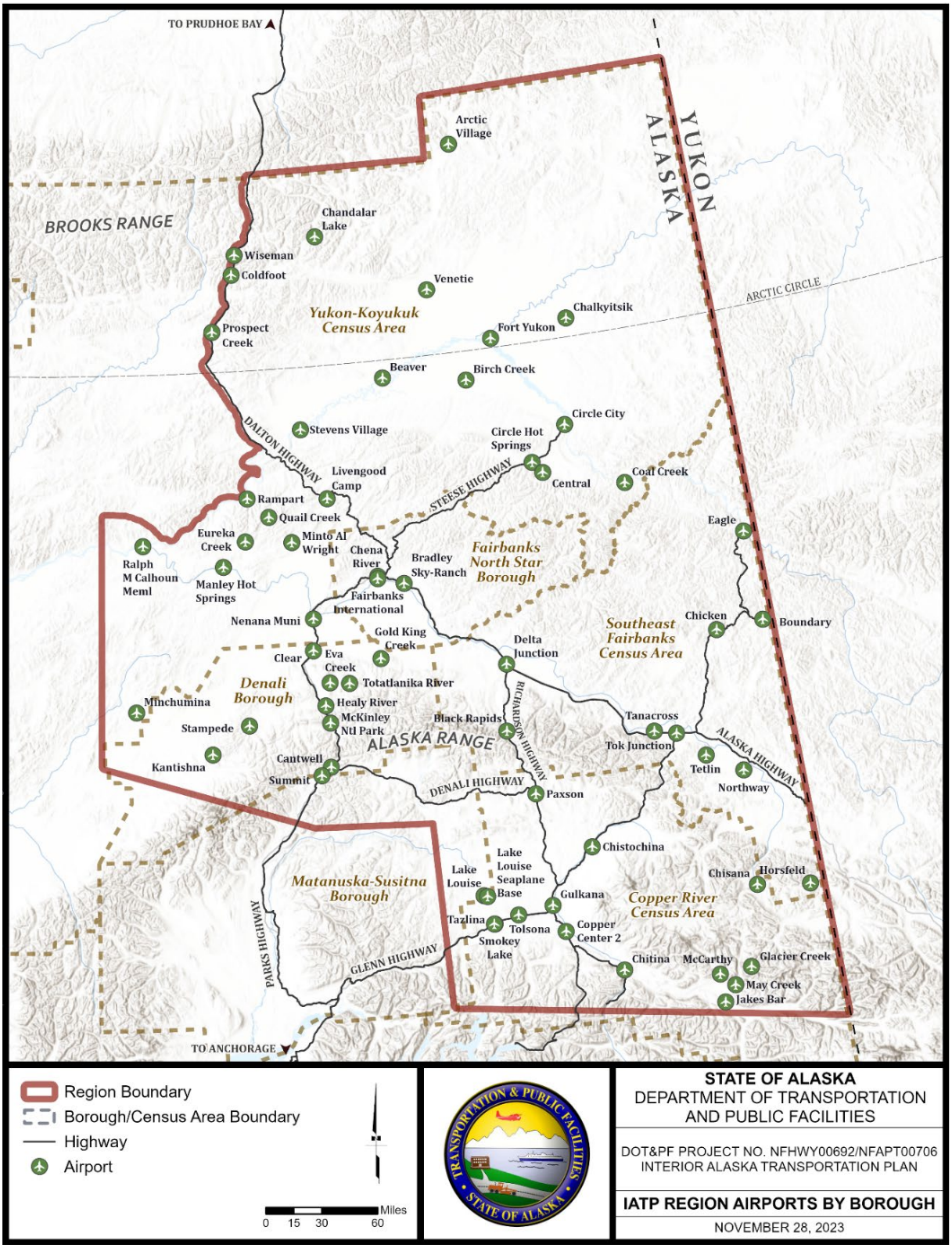


Figure 9. IATP Region Airports by Borough/Census Area

Table 32 summarizes operations by type for IATP airports within each borough/census area. Air taxi and general aviation (GA) operations dominate this region. Air carrier operations are only reported for Fairbanks International (FAI) and Gulkana (GKN). Otherwise, air taxis transport the bulk of passengers and goods by air. The Yukon-Koyukuk Census Area has a significantly higher number of air taxi operations than most other sub-areas, primarily because this region has the most communities and holds the six Community Off-Road airports that rely entirely on aviation for delivery of people and goods. Military operations are primarily concentrated in the areas that hold military bases with very little military activity reported for most sub-areas.

Table 32. Base Year Operations Summarized by Borough/Census Area

Borough/ Census Area	Air Carrier Ops	Air Taxi Ops	GA Itinerant Ops	Military Ops	GA Local Ops	Total Ops
Copper River Census Area	996	2,570	5,285	155	3,726	12,732
Denali Borough	0	2,720	3,910	500	1,100	8,230
Fairbanks North Star Borough[1]	10,721	21,922	33,448	4,118	30,963	112,400[1]
Matanuska-Susitna Borough	0	500	950	4	1,000	2,454
Southeast Fairbanks Census Area	0	6,247	10,820	350	9,300	26,717
Yukon-Koyukuk Census Area	26	20,389	8,050	310	9,950	38,725
IATP REGION TOTALS	**11,743**	**54,348**	**62,463**	**5,437**	**56,039**	**201,258**[1]

[1]Fairbanks International (FAI) lies within the Fairbanks North Star Borough, and FAI's operations data is sourced from the TAF, which also reports 11,228 overflights for FAI and which are included in the Total Operations

Table 33 summarizes enplaned and deplaned passengers, freight, and mail for IATP airports within each borough/census area. Fairbanks International dominates the passenger, freight, and mail statistics, but the Yukon-Koyukuk Census Area has significant volumes, especially as compared to other borough/census areas, due to the number of communities in this area and many of them being off-road.

Table 33. Base Year Passengers, Freight, & Mail Summarized by Borough/Census Area

Borough/ Census Area	Enplaned Passengers	Enplaned Freight (lbs)	Enplaned Mail (lbs)	Deplaned Passengers	Deplaned Freight (lbs)	Deplaned Mail (lbs)
Copper River Census Area	718	12,871	61,587	732	47,006	65,582
Denali Borough	1,431	6,660	378	1,445	16,781	2,537
Fairbanks North Star Borough[1]	510,137	14,334,698	5,265,493	514,559	17,977,506	408,345
Matanuska-Susitna Borough	0	0	0	0	0	0
Southeast Fairbanks Census Area	1,132	61,987	19,649	1,055	142,876	117,816
Yukon-Koyukuk Census Area	18,687	244,523	192,003	20,065	3,323,702	1,491,147
IATP REGION TOTALS	**532,105**	**14,660,739**	**5,539,110**	**537,856**	**21,507,871**	**2,085,427**

Based aircraft are presented previously in Table 31. The majority of the based aircraft are concentrated at just a few airports. Over half of the IATP region airports have zero based aircraft. Another quarter have five or less. 97 percent of the region's total 750 based aircraft (726 of 750) are based at one of just 10 airports, and Fairbanks International has 569 of those (76 percent of the total).

3.5 Base Year Critical Aircraft

The bulk of the transportation of people and goods by air is accomplished with a fairly steady fleet of aircraft that meet the needs of this region. Some of the most common air carrier aircraft (and their AAC-ADG) serving the region include:

- Cessna 206 and 207 Stationairs (A-I)
- Cessna 185 Skywagons (A-I)
- Cessna 208 Caravans (A-II)
- Beechcraft King Air 200s (B-II)
- Piper PA-18 Super Cubs (A-I)
- Piper PA-31 Navajos (A/B-I)
- De Havilland Beavers (A-I)

Table 34 identifies air carriers currently operating in the IATP region, the airports at which they are based, their fleet, and notes about what types of service they provide.

Table 34. Air Carriers Currently Operating in the IATP Region

Carrier	Base	Fleet	Remarks
40-Mile Air	Tok	(5) **Cessna C206 Stationairs** (1) **Cessna C207 Stationair** (1) Cessna 185 Skywagon (6) **Piper PA-18 Super Cubs** (1) Piper PA-31 Navajo (2) Robinson R44 Raven helicopters	Scheduled service from Tok to Healy Lake, Delta, Fairbanks, Chisana, Northway, and Chicken. Charter service available.
Copper Valley Air Service	Gulkana Airport, Glennallen	(1) Cessna 180 Skywagon (1) Cessna 172 Skyhawk (2) **Cessna 206 Stationairs** (1) Piper PA-12 Super Cruiser (1) De Havilland DHC-2 Beaver	Scheduled service to McCarthy and May Creek. Partners with Reeve for service out of Anchorage. Charter service available.
Coyote Air	Coldfoot	(2) **De Havilland Beavers** (1) Cessna 185 (1) Cessna 206 Stationair on floats	Charter service out of Coldfoot in the summer.
Ellis Air Taxi	Gulkana Airport, Glennallen	**Cessna C206 Stationair** **Cessna 185** **Piper Super Cub** Piper Twin Engine Howard DGA-15P	Scheduled service to McCarthy, May Creek, and Kennicott. Charter service available.
Everts / Tatonduk Flying Service	Fairbanks	(4) **Cessna 208 Caravans** (3) Pilatus PC-12s (4) McDonnell Douglas DC-6As (1) Curtiss C-46 (6) MD-80s (3) Cessna 408 SkyCouriers (first one delivered in October 2023)	Doing business as Everts Air. Scheduled and charter passenger services out of Fairbanks with Pilatus PC-12 or Cessna Grand Caravan. Fairbanks to Arctic Village, Eagle, Fort Yukon, and Venetie. Scheduled freight service out of ANC for 10 major hubs (none in IATP area) and charter/flag stop services to anywhere they can land.
Guardian Flight	Fairbanks	Learjet 45 **Beechcraft King Air 200** Beechcraft King Air C90B Cessna 204 Caravan Pilatus PC-12 Airbus H130 Airbus AS350B3e	Medevac operations throughout the region.
LifeMed Alaska	Fairbanks	Learjet 31 Learjet 35	Fixed-wing medevac operations throughout the region.

		Learjet 45 **Beechcraft King Air 200**	
Maritime Helicopters	Fairbanks & Deadhorse (seasonal)	(8) Bell BHT 206 L4 Long Rangers (7) Bell BHT 407s (2) Air Bus Euro BO-105s	Helicopter charters.
Reeve Air Alaska	Anchorage	**Piper PA-31 (Navajo)/T-1020**	Scheduled service from Anchorage to GKN 2x/week. Partners with Copper Valley Air Service. Charter service available.
Tok Air Service	Tok	(3) **Piper PA-18 Super Cubs** (1) **Cessna 185 Skywagon**	Charter service available.
Warbelow's Air Ventures	Fairbanks	(15) **Piper PA-31 Navajo/T-1020s**	Scheduled passenger service to Beaver, Central, Circle, Manley Hot Springs, Minto, Rampart, and Stevens Village. Charter and freight services available.
Wrangell Mountain Air	McCarthy	(1) **Cessna 185 Skywagon** (1) Cessna 172 Skyhawk (3) **Cessna 206 Stationairs** (1) **De Havilland DHC-2 Beaver**	Scheduled daily service between McCarthy and Chitina. Charter service available.
Wright Air Service	Fairbanks	(4) Helio H-250/295/395s (2) **Cessna C206 Stationairs** (2) **Piper PA-31 (Navajo)/T-1020s** (18) **Cessna 208 Caravans** (1) Beechcraft Bonanza A36	Service to Arctic Village, Chalkyitsik, Coldfoot, Fort Yukon, Venetie, Birch Creek, and Minchumina. Charter service available.

Aircraft in bold text are aircraft performing the majority of reported scheduled carrier operations (BTS T-100 statistics). Fleet & service information sourced from carrier web pages, BTS T-100 data, and the Part 135 Aircraft Registry.

The following were the most common aircraft types (with their AAC-ADG), which were used for general aviation (e.g., transportation, recreation, and hunting), in the IATP region from 2012 to 2022:

- Cessna 172 (A-I)
- De Havilland Beaver (A-I)
- Piper PA-23 (A-I).

3.6 Historical Activity Trends & Previous Forecasts

Historical aviation activity trends are presented in the following sections, by borough/census area. Data available through the TAF and BTS provide trends for enplanements, cargo, mail, and based aircraft to consider in the development of forecasts.

The following definitions will help to differentiate types of air traffic as reported by FAA and U.S. Department of Transportation (USDOT) Air Carrier Activity Information System (ACAIS).

- Air Carrier – An airline certified under FAR Part 121. If offering scheduled service, must have nine or more seats. If offering on-demand services, must have 30 or more seats.
- Air Taxi – An airline providing on-demand service certified under FAR Part 121 (if more than 30 seats) or FAR Part 135 (if fewer than 30 seats).
- General Aviation – All civil aviation operations other than scheduled air carrier services and non-scheduled on-demand services.
- Enplanements – Passengers boarding a commercial air carrier or commuter aircraft at the subject airport.
- Operations – The number of takeoffs and landings at the subject airport. Each flight generally accounts for two operations (one takeoff and one landing).

3.6.1 Historical Operations Trends

Historical operations data and forecast operations are included in the TAF. Only seven of the airports with operations data reported in the TAF show historical changes over the 2011-2022 time period. Most airports show data that has remained static since 2011. The sparsity of information does not provide much useful in the way of forecasting. Airports reporting any historical change through the TAF are:

- Arctic Village – Air taxi operations increased to 1500 from 1452, and GA operations decreased to 150 from 175 in 2017
- Beaver – Air taxi operations increased to 500 from 200, and GA operations decreased from 600 to zero in 2017
- Birch Creek – GA operations decreased from 350 to zero in 2017
- Clear – Military operations decreased from 500 to zero, and GA operations decreased from 1500 to 100 in 2019
- Fairbanks International – Air carrier and air taxi operations showed decreasing trends; GA and military operations remained roughly static
- Rampart – Air taxi operations increased to 300 from 250, and GA operations decreased to zero in 2014
- Tetlin – Air carrier operations increased from zero to 112 in 2015

3.6.2 Historical Enplanement Trends

Historical enplanement trends for the years 2011-2022 are presented in Table 35. Data trends were analyzed over the complete 12-year period, as well as for the period prior to COVID's devastating impacts on aviation activity (2011-2019) and the period following the most drastic changes of 2020 (the rebound period of 2020-2022).

Table 35. Historical Enplanement Trends by Borough/Census Area, 2011-2022

Borough/Census Area Enplanements	2011	2019	2020	2022	Avg Annual % Change 2011-2022	Avg Annual % Change 2011-2019	Avg Annual % Change 2020-2022
Copper River Census Area	319	84	311	718	+7.6%	+15.4%	+51.6%
Denali Borough	5	147	166	1,431	+67.2%	+52.5%	+193.0%
Fairbanks North Star Borough	438,188	562,420	233,484	510,137	+1.4%	+3.2%	+47.8%
Matanuska-Susitna Borough	0	0	0	0	0%	0%	0%
Southeast Fairbanks Census Area	656	869	657	1,132	+5.1%	+3.6%	+31.3%
Yukon-Koyukuk Census Area	23,150	23,174	8,397	18,687	-2.0%	0%	+48.5%
IATP REGION TOTALS	**462,318**	**586,694**	**243,015**	**532,105**	**+1.3%**	**+3.0%**	**+47.9%**

Enplanement data for years 2011-2021 were sourced from the AASP internal website, which reports ACAIS enplanement statistics. Enplanement data for 2022 were sourced from BTS T-100 Market statistics, since the AASP does not yet report the ACAIS enplanement statistics for 2022. The only airport reporting data in the Denali Borough is Healy River, and it is likely that some of the enplanements reported for this facility should be attributed to Healy Lake. The Matanuska-Susitna Borough airports in the IATP region have no enplanement data reported for the 2011-2022 time period.

Historical enplanement trends show variation across the IATP region. Prior to the pandemic, enplanements were increasing at 1.3 percent annually for the entire region, but the Yukon-Koyukuk Census Area had been experiencing an average 2.0 percent decline in annual enplanements, while other boroughs/census areas saw anything between 1.4 percent and 67.2 percent annual growth. Passenger volumes declined precipitously in 2020, but the rebound has been swift. Most areas are on track to recover to pre-pandemic passenger volumes in the near term. The Yukon-Koyukuk Census Area appears to be in a continued trend of decreasing enplanements from 2011 statistics, overall.

3.6.3 Historical Air Cargo Volume Trends

Historical air cargo volume trends are presented in Table 36 for the years 2013-2022. The data are deplaned cargo statistics, sourced from the AASP internal facilities database, and 2013 is the earliest reporting year for this data. Deplaned cargo volumes are orders of magnitude larger than enplaned cargo volumes at most of the IATP region's airports, so this indicator is generally more representative of cargo activity in the region. The data trends were analyzed over the complete 10-year reporting period, as well as for the period prior to COVID's devastating impacts on aviation activity (2013-2019) and the period following the most drastic changes of 2020 (the rebound period of 2020-2022).

Table 36. Historical Air Cargo Trends by Borough/Census Area, 2013-2022

Borough/Census Area Deplaned Cargo Volumes (pounds)	2013	2019	2020	2022	Avg Annual % Change 2013-2022	Avg Annual % Change 2013-2019	Avg Annual % Change 2020-2022
Copper River Census Area	63,699	29,524	27,526	47,006	-3.3%	-12.0%	+30.7%
Denali Borough	4,875	16,385	28,026	16,781	14.7%	22.4%	-22.6%
Fairbanks North Star Borough	9,627,038	8,473,434	4,630,913	17,977,506	+7.2%	-2.1%	+97.0%
Matanuska-Susitna Borough	No data	No data	No data	No data	No data	No data	No data
Southeast Fairbanks Census Area	89,054	104,564	87,862	142,876	+5.4%	+2.7%	+27.5%
Yukon-Koyukuk Census Area	2,957,342	2,323,590	1,394,214	3,323,702	+1.3%	-3.9%	+54.4%
IATP REGION TOTALS	**12,742,008**	**10,947,497**	**6,168,541**	**21,507,871**	**+6.0%**	**-2.5%**	**+86.7%**

Cargo volume data for years 2013-2021 were sourced from the AASP internal website, which reports BTS T-100 Market statistics in their entirety for each year. Cargo volume data for 2022 were sourced directly from the BTS T-100 Market statistics, since the AASP data pull lags for the most recent year's reported data, thus under-reports 2022 volumes. There are no cargo volume data reported for IATP airports in the Denali Borough or the Matanuska-Susitna Borough for the 2013-2022 time period.

Historical air cargo volumes were showing generally decreasing trends for most of the IATP region prior to the pandemic, with the exception of the Southeast Fairbanks Census Area and Denali Borough (which is likely over-reported since Healy Lake data gets incorrectly attributed to Healy River). Many of the airports in the IATP region are on the road system, so it is likely that cargo was being delivered by less expensive ground-based methods, and the demand for cargo may have decreased due to fuel and shipping prices. However, the pandemic resulted in a surge nationwide of goods delivered through freight and mail, and the total air cargo volume for the region has nearly doubled from the pre-pandemic level.

3.6.4 Historical Mail Volume Trends

Historical mail volume trends are presented in Table 37 for the years 2013-2022. The data are deplaned mail statistics, sourced from the AASP internal facilities database, and 2013 is the earliest reporting year for this data. Deplaned mail volumes are orders of magnitude larger than enplaned mail volumes at most of the IATP region's airports, so this indicator is generally more representative of mail volume activity in the region. The data trends were analyzed over the complete 10-year reporting period, as well as for the period prior to COVID's devastating impacts on aviation activity (2013-2019) and the period following the most drastic changes of 2020 (the rebound period of 2020-2022).

Table 37. Historical Mail Volume Trends by Borough/Census Area, 2013-2022

Borough/Census Area Deplaned Mail Volumes (pounds)	2013	2019	2020	2022	Avg Annual % Change 2013-2022	Avg Annual % Change 2013-2019	Avg Annual % Change 2020-2022
Copper River Census Area	39,100	40,187	40,660	65,582	+5.9%	+0.5%	+27.0%
Denali Borough	401	840	1,373	2,537	+22.7%	+13.1%	+35.9%
Fairbanks North Star Borough	531,663	544,773	174,372	408,345	-2.9%	+0.4%	+53.0%
Matanuska-Susitna Borough	No data	No data	No data	No data	No data	No data	No data
Southeast Fairbanks Census Area	166,718	130,770	92,354	117,816	-3.8%	-4.0%	+13.0%
Yukon-Koyukuk Census Area	1,572,324	1,250,898	824,573	1,491,147	-0.6%	-3.7%	+34.5%
IATP REGION TOTALS	**2,310,206**	**1,967,468**	**1,133,332**	**2,085,427**	**-1.1%**	**-2.6%**	**+35.7%**

Mail volume data for years 2013-2021 were sourced from the AASP internal website, which reports BTS T-100 Market statistics in their entirety for each year. Mail volume data for 2022 were sourced directly from the BTS T-100 Market statistics, since the AASP data pull lags for the most recent year's reported data, thus under-reports 2022 volumes. There are no mail volume data reported for IATP airports in the Denali Borough or the Matanuska-Susitna Borough for the 2013-2022 time period.

Historical mail volume trends vary considerably across the region, both pre- and post-pandemic. Deplaned mail has been generally in decline across the IATP area, but each borough/census area has experienced different rates of growth or decline. All areas have seen a rebound of mail volume since 2020, with half the boroughs/census areas seeing higher than pre-pandemic mail volumes and half seeing less. Overall, the region appears to be experiencing a decline of air mail.

3.6.5 Historical Based Aircraft Trends

The TAF includes historical based aircraft counts and a forecast of future based aircraft counts. Data included for IATP region airports indicates that most airports with any based aircraft in the 2011-2040 period have had historical decreases or no changes in based aircraft counts and show no changes in future based aircraft counts (Table 38). The only airports with historical increases are Fairbanks International, Gulkana, and Healy River. Fairbanks International dominates based aircraft statistics. Including Fairbanks International's counts, the number of based aircraft in the region increased 38 percent from 2011 to 2022 and is forecast to increase five percent by 2040. Excluding Fairbanks International's counts, the number of based aircraft decreased by six percent from 2011 to 2022, and the 2022 counts are projected to remain static out to 2040.

Table 38. Historical & Forecasted Based Aircraft Trends from the TAF, 2011-2040

Airport	Airport ID	Based Aircraft 2011	Based Aircraft 2022	Based Aircraft 2040	Historical % Change 2011-2022	Forecast % Change 2022-2040
Arctic Village	ARC	0	0	0	0%	0%
Beaver	WBQ	0	0	0	0%	0%
Birch Creek	Z91	0	0	0	0%	0%
Boundary	BYA	0	0	0	0%	0%
Central	CEM	3	2	2	-33%	0%
Chalkyitsik	CIK	0	0	0	0%	0%
Chandalar Lake	WCR	0	0	0	0%	0%
Chicken	CKX	0	0	0	0%	0%
Chisana	CZN	0	0	0	0%	0%
Chitina	CXC	2	1	1	-50%	0%
Circle City	CRC	1	0	0	-100%	0%
Circle Hot Springs	CHP	0	4	4	--	0%
Clear	Z84	3	1	1	-67%	0%
Coldfoot	CXF	3	3	3	0%	0%
Eagle	EAA	1	1	1	0%	0%
Fairbanks International	FAI	382	571	607	49%	6%
Fort Yukon	FYU	0	0	0	0%	0%
Gulkana	GKN	13	21	21	62%	0%
Healy River	HRR	7	10	10	43%	0%
Kantishna	5Z5	3	0	0	-100%	0%
Lake Louise	Z55	0	0	0	0%	0%

Manley Hot Springs	MLY	7	5	5	-29%	0%
May Creek	MYK	0	0	0	0%	0%
McCarthy	15Z	0	0	0	0%	0%
Minchumina	MHM	2	2	2	0%	0%
Minto Al Wright	51Z	0	0	0	0%	0%
Nenana Muni	ENN	15	13	13	-13%	0%
Northway	ORT	0	0	0	0%	0%
Ralph M Calhoun Meml	TAL	0	0	0	0%	0%
Rampart	RMP	0	0	0	0%	0%
Stevens Village	SVS	0	0	0	0%	0%
Tetlin	3T4	0	0	0	0%	0%
Tok Junction	6K8	39	31	31	-21%	0%
Venetie	VEE	1	0	0	-100%	0%
Total		**482**	**665**	**701**	**38%**	**5%**
Total Excluding FAI		**100**	**94**	**94**	**-6%**	**0%**

3.6.6 Terminal Area Forecast (TAF)

The FAA's Terminal Area Forecast (TAF) includes enplanement data for 34 of the IATP region's airports. The TAF projects that total enplanements in the IATP region will grow at an annual average rate of 2.3 percent over the 2022-2040 forecast period, with a sharp increase in activity in the very near term (to 2024), leveling off to an annual average increase of 2.2 percent over the long term (2025-2040) (Table 39). TAF enplanement data only captures the number of passengers on scheduled air carriers reporting into the system, often missing enplanements by air taxi companies and often not matching the enplanements reported through other sources such as the BTS, but the parameters of the data remain the same over time, allowing trend analysis.

Table 39. Terminal Area Forecast for IATP Region 2022-2040 – All 34 Reporting Airports

Terminal Area Forecasts Year	Enplanements[1]	Year-Over-Year % Change
2022	520,730	+27.4% (from 2021)
2023	520,733	0%
2024	558,397	+7.2%
2025	574,049	+2.8%
2026	586,334	+2.1%
2027	599,038	+2.2%
2028	612,583	+2.3%
2029	625,887	+2.2%
2030	639,510	+2.2%
2031	652,594	+2.0%
2032	665,930	+2.0%
2033	679,626	+2.1%
2034	693,497	+2.0%
2035	708,263	+2.1%
2036	723,309	+2.1%
2037	738,754	+2.1%
2038	754,695	+2.2%
2039	771,075	+2.2%
2040	788,412	+2.2%
Annual Average Percent Change 2022-2040		**+2.3%**

[1] *Enplanements are the total of all types of enplanements reported for each year for all IATP airports with data included in the TAF*

Fairbanks International dominates the enplanement statistics, and without including FAI in the totals, the forecast for all other airports in the region shows considerably less growth. The TAF projects that total enplanements for airports in the IATP region, excluding FAI, will grow at an annual average rate of 0.5 percent over the 2022-2040 forecast period (Table 40). Nearly all rebound activity following the pandemic is accounted for in the 2020-2022 TAF period.

Table 40. Terminal Area Forecast for IATP Region 2022-2040 – Excluding Fairbanks International

Terminal Area Forecasts Year	Enplanements[1]	Year-Over-Year % Change
2022	20,230	+45.3% (from 2021)
2023	20,330	+0.5%
2024	20,430	+0.5%
2025	20,534	+0.5%
2026	20,638	+0.5%
2027	20,742	+0.5%
2028	20,848	+0.5%
2029	20,954	+0.5%
2030	21,063	+0.5%
2031	21,173	+0.5%
2032	21,283	+0.5%
2033	21,395	+0.5%
2034	21,509	+0.5%
2035	21,623	+0.5%
2036	21,738	+0.5%
2037	21,853	+0.5%
2038	21,969	+0.5%
2039	22,091	+0.5%
2040	22,213	+0.5%
Annual Average % Change 2022-2040		**+0.5%**

[1] Enplanements = total of all types of enplanements reported for all IATP airports with data included in the TAF, excluding FAI

Examining the TAF data by airports grouped within each borough/census area reveals that not all boroughs/census areas are expected to see even the 0.5 percent growth rate in enplanements (Table 41). The Copper River Census Area, Denali Borough, Matanuska-Susitna Borough, and Southeast Fairbanks Census Area airports are forecast to have zero growth over the 2022-2040 period. The Fairbanks North Star Borough is forecast to have an average annual increase of 2.3 percent in enplanements, but this figure is based entirely on Fairbanks International statistics. Airports in the Yukon-Kuskokwim Census Area are forecast to have an average annual increase of 0.4 percent in enplanements. It must be noted that the TAF tends to project future activity at the same level as the most recent activity reported in the Airport Master Record Form 5010 for small airports lacking control towers or master plans.

Table 41. Terminal Area Forecast Year-Over-Year Average Annual Growth Rates by Borough/Census Area

Borough/Census Area	2022 Total Enplanements	2040 Total Enplanements	Average Annual Change
Copper River Census Area	709	709	0%
Denali Borough	1,462	1,462	0%
Fairbanks North Star Borough	500,500	766,199	+2.3%
Matanuska-Susitna Borough	0	0	0%
Southeast Fairbanks Census Area	583	583	0%
Yukon-Koyukuk Census Area	17,476	19,459	+0.4%

With very few exceptions, the TAF does not project changes in operations over the forecast period. The only facilities that have any forecast changes are Fairbanks International and Fort Yukon. Fairbanks International's operations are projected to grow by 75.3 percent for air carrier operations, 47.9 percent for air taxi operations, and roughly 15 percent for total GA operations over the 2022-2040 period. Fort Yukon's air taxi operations are projected to grow 9.8 percent over the 2022-2040 period (average annual increase of 0.5 percent).

Other than for Fairbanks International, the TAF shows no change in based aircraft counts at any of the IATP airports over the 2022-2040 forecast period. The TAF projecting zero growth in based aircraft is typical for most general aviation airports across the country, not just Alaskan airports. This is a significant reason that other factors than the TAF are considered in Alaska's rural airport forecast, and it is common to provide explanation for why study forecasts differ from the TAF.

3.6.7 Other Aviation Plan Forecasts

Aviation activity forecasts prepared for specific airports within the region or prepared for the broader region/state can provide data that supports the development of regional forecasts. The previous IATP developed forecasts for the region in 2010, and the *Alaska Aviation System Plan* developed forecasts for the entire state in 2011. Individual airports with their own FAA-approved forecasts include Fairbanks International, Tok Junction, Tanacross, and Nenana Municipal Airport.

3.6.7.1 2010 Interior Alaska Transportation Plan (IATP) Forecasts

The aviation activity forecasts developed for the *2010 IATP* were developed for the 2010-2030 period and generally correlated population forecasts with aviation activity forecasts as the best indicator. Other factors, such as tourism, resource development, and fuel prices were considered but were determined not to be significant influences on aviation activity in the long term.

Table 42 presents enplaned passenger forecasts from the *2010 IATP*. Enplaned passenger forecasts used the population growth rates for the IATP area for the low scenario, TAF growth rates for the high scenario, and the average of the two for the medium scenario.

Table 42. 2010 IATP Enplaned Passenger Forecasts

Airport/Region	2007 Actual (Base Year)	Low 2030 Forecast	Medium 2030 Forecast	High 2030 Forecast
Fairbanks International (FAI)	442,274	543,486	576,206	608,926
Avg Annual Growth		+0.9%	+1.2%	+1.4%
Fort Yukon (FYU)	9,081	10,661	11,170	11,679
Avg Annual Growth		+0.7%	+0.9%	+1.1%
Tanana (Ralph M. Calhoun) (TAL)	3,719	2,507	3,645	4,783
Avg Annual Growth		-1.7%	-0.1%	+1.1%
IATP Area	464,896	571,285	636,011	700,736
Avg Annual Growth		+0.9%	+1.4%	+1.8%

The total actual enplanements reported through BTS T-100 data for the IATP region in 2022 is 532,105. This correlates most closely with the low forecast average annual growth rate for the region of 0.9 percent. Comparing the three airports specifically forecast in the *2010 IATP*, Fairbanks International has seen an actual average annual growth of about 1.0 percent, but Fort Yukon and Ralph M. Calhoun have seen steep declines in enplanements since 2007, experiencing an average annual decrease of 4.3 percent and 4.7 percent, respectively.

Table 43 presents air cargo forecasts from the *2010 IATP*. Air cargo forecasts (low estimate) for the IATP region were also correlated with population trends, increasing by 0.9 percent per year to account for anticipated per person growth in cargo. The high estimate used the growth rate projected for outbound air cargo from Anchorage to Fairbanks from a study recently conducted at that time. The medium forecast is the average of the two.

Table 43. 2010 IATP Cargo Forecasts (pounds)

Airport/Region	2007 Actual (Base Year)	Low 2030 Forecast	Medium 2030 Forecast	High 2030 Forecast
Arctic Village (ARC)	964,257	1,520,536	1,690,768	1,861,000
Avg Annual Growth		+2.0%	+2.5%	+2.9%
Eagle (EAA)	259,249	196,393	219,166	241,939
Avg Annual Growth		-1.2%	-0.7%	-0.3%
Fairbanks International (FAI)	35,931,285	54,159,125	60,235,626	66,312,126
Avg Annual Growth		+1.8%	+2.3%	+2.7%
Fort Yukon (FYU)	2,503,097	3,606,060	4,011,526	4,416,992
Avg Annual Growth		+1.6%	+2.1%	+2.5%
Tanana (Ralph M. Calhoun) (TAL)	706,086	586,984	654,745	722,506
Avg Annual Growth		-0.8%	-0.3%	+0.1%
Venetie (VEE)	501,094	524,659	584,559	644,460
Avg Annual Growth		+0.2%	+0.7%	+1.1%
IATP Area	42,023,182	63,341,425	70,448,153	77,554,881
Avg Annual Growth		+1.8%	+2.3%	+2.7%

Based aircraft in the region were projected to grow at an annual average rate of 0.8 percent to 1.0 percent, with the medium range correlating with the region's population forecasts.

3.6.7.2 Alaska Aviation System Plan (AASP) Forecasts

The AASP created forecasts for aviation activity statewide for the 2008-2030 period, available in the 2011 *Alaska Aviation System Plan Forecasts* report. These forecasts are now more than 10 years old, and many of the conditions and circumstances influencing the AASP forecasts have changed considerably in the time since they were developed. Additionally, the Copper River Census Area was not a designated census area at the time the AASP forecasts were developed (it was part of the Valdez-Cordova Census Area at the time), and forecasts for the Fairbanks North Star Borough were sometimes not included due to the anticipated *Alaska International Airport System Plan* that would consider Alaska's international airports separately. The forecast average annual rates of change for the 2008-2030 period are included in Table 44 below.

Table 44. AASP Forecasts, 2008-2030, Average Annual Rates of Change of Aviation Activity

Borough/Census Area	Passengers	Cargo	Based Aircraft	Commercial Operations	GA Operations	Military Operations	Total Operations
Copper River Census Area[1]	No data	No data	No data	No data	No data	No data	No data
Denali Borough	-1.4%	0.0%	-0.1%	-2.5%	-0.5%	0%	-1.0%
Fairbanks North Star Borough[2]	See note	See note	+0.9%	+0.8%	+1.0%	0%	+1.0%
Matanuska-Susitna Borough	+2.9%	+2.8%	+2.5%	+2.0%	+2.4%	+0.7%	+2.3%
Southeast Fairbanks Census Area	+2.6%	+2.5%	+1.0%	+1.4%	+1.2%	0%	+1.3%
Yukon-Koyukuk Census Area	+0.2%	+0.4%	-0.7%	-1.0%	-0.5%	0%	-0.8%

[1] The Copper River Census Area was not a designated census area at the time the forecasts were developed; it was designated in 2019 when it was split from the Valdez-Cordova Census Area

[2] Fairbanks North Star Borough passenger and cargo data was not included and was to be updated in the Alaska International Airport System Plan; other statistics for this borough exclude Fairbanks International

3.6.7.3 Fairbanks International Airport (FAI) Forecasts

The 2014 *Fairbanks International Airport Master Plan* includes aviation activity forecasts for the 2010-2030 period. The Master Plan and the data used to develop the forecasts are now approximately 10 years old. Key forecast conclusions from the report include:

- Based on the historical trends and continued growth of domestic and international passengers, air taxi and transit passengers were also expected to increase over the forecast period.
- Total enplanements were projected to increase at a rate of about 1.2 percent per year between 2010 and 2030 (a 26 percent increase over the 20-year period).
- An increase in local air cargo volume was anticipated.
- Air taxi operations were projected to grow at the same rate as enplaned passengers at 1.4 percent annually.
- General aviation operations had declined over the preceding 10 years, but the average annual growth rate for 2010-2030 was projected to be 1.2 percent.
- Passenger flights within Alaska were conducted principally on three types of aircraft, and these were expected to remain the main types over time: Beech 1900 (increased use), Cessna 208 Caravan (increased use), and Piper PA-31T Cheyenne (decreased use).
- Single engine piston aircraft were expected to dominate the GA forecast.
- An average annual based aircraft growth rate of 0.9 percent was projected.

The IATP aviation activity forecasts do not include forecasts for FAI, but the influence of this airport is significant to the region's other airports, since a large share of the reported activity originates out of FAI. Trends in air taxi operations, general aviation operations, and critical aircraft are most relevant to the IATP activity forecasts.

3.6.7.4 Upper Tanana Planning Study (UTAPS) Forecasts

The *Upper Tanana Airport Planning Study (UTAPS)* developed forecasts for the Tanacross and Tok Junction Airports for the 2019-2045 period. The final report was produced in September 2023. Forecasts from the *UTAPS* report are included in Table 45 and will be used in the IATP aviation forecasts for these two airports. Although the *UTAPS* study considered two additional airports (Northway and Gulkana), forecasts for these airports were not included in the final *UTAPS* report. An ALP update for Gulkana was prepared separately from the *UTAPS* report, and the ALP narrative includes forecasts for Gulkana.

Tanacross enplanements are projected to remain flat and then steadily decrease at 3.0 percent annually after 2028 as the airport deteriorates and activity gravitates toward the better facility of Tok Junction. Scheduled commercial operations are also projected to remain flat and then steadily decrease at 3.0 percent annually for the same reason. Total operations are projected to remain flat and then decrease sharply (-15.0 percent) in 2028 after fire operations relocate to Tok Junction, then continue to decrease by 2.0 percent per year after. There are no based aircraft at Tanacross, and no change is expected.

Tok Junction enplanements are projected to decline at 0.6 percent through 2024 then increase at 0.5 percent annually after 2025 to account for growth in population, visitors, and mining operations. Scheduled commercial operations are projected to decline at 2.6 percent through 2024 then increase at 0.5 percent annually after 2025 for the same reasons. Total operations are projected to increase at 0.5 percent through 2024 then increase at 1.0 percent annually after 2025 to account for population, visitor, and mining growth, as well as increased firefighting and medevac operations. Based aircraft are projected to increase at an annual average rate of 1.0 percent. The current critical aircraft at Tok Junction is the Cessna 207 (ARC A-I), with a standard forecast critical aircraft of the Cessna 207 and a high forecast critical aircraft of the Beech King Air 200, which matches the ultimate design aircraft for the facility.

Table 45. UTAPS Forecasts for Tanacross and Tok Junction Airports, 2019-2045

Airport & Activity	2019	2025	2030	2035	2045	Rates of Change
Tanacross						
Enplanements	47	47	44	37	29	-3.0% after 2028
Scheduled Commercial Operations	16	16	15	13	11	-3.0% after 2028
Total Operations	290	290	247	214	175	-15.0% in 2028, -2.0% after 2028
Based Aircraft	0	0	0	0	0	No change
Tok Junction						
Enplanements	202	195	201	207	2019	+0.6% to 2024, +0.5% after 2024
Scheduled Commercial Operations	488	428	441	452	475	+2.6% to 2024, +0.5% after 2024
Total Operations	11,696	12,051	12,666	13,312	14,703	+0.5% to 2024, +1.0% after 2024
Based Aircraft	30	32	34	37	43	+1.0%

3.6.7.5 Gulkana Airport (GKN) Forecasts

The Airport Layout Plan update for Gulkana Airport (GKN) was prepared concurrently with the development of this IATP technical memo. The draft narrative included forecasts for GKN for the 2019-2045 period (Table 46), indicating that the two main drivers of aviation activity for this airport are population and visitor growth. Population in the Gulkana and Glenallen areas has been declining very slowly, and the slow downward trend is anticipated to continue, according to DOLWD statistics. Conversely, visitor volume is anticipated to show strong growth. Development plans and stakeholder input additionally contributed to an expectation of growing aviation activity for GKN. The existing critical aircraft for GKN is identified as the Cessna 206 (ARC A-I), and the ultimate critical aircraft is the Beechcraft King Air (B-II).

Table 46. Gulkana Airport (GKN) Draft Forecasts, 2019-2045

Activity	2019	2025	2035	2045	Average Annual Rate of Change
Enplanements	481	491	599	731	+2.0%
Commercial Operations	738	743	798	857	+0.7%
Total Operations	10,110	10,192	11,054	11,989	+0.8%
Based Aircraft	24	24	25	25	+0.3%

3.6.7.6 Nenana Municipal Airport (ENN) Forecasts

Nenana Municipal Airport (ENN) forecasts were developed in 2022 as part of the Airport Layout Plan update for this airport. Aviation activity trends and critical aircraft for the 2021-2031 period are included in the report. ENN has ambitious development plans, and aviation activity of all levels is anticipated to grow at this airport. Enplanements and operations are projected to grow at 6.0 percent annually, and based aircraft are projected to increase at 1.2 percent annually. The ultimate critical aircraft for ENN is projected to be in the B-II group (e.g., the Beech King Air).

Table 47. Nenana Municipal Airport (ENN) Forecasts, 2021-2031

Activity	2021	2026	2031	Average Annual Rate of Change
Enplanements	24	32	43	+6.0%
Air Taxi Operations	1000	1338	1791	+6.0%
GA Itinerant Operations	2000	2676	50	+6.0%
GA Local Operations	500	669	895	+6.0%
Military Operations	50	50	50	0%
Total Operations	3550	4733	6318	+5.9%
Based Aircraft	16	17	18	+1.2%

3.6.7.7 Northwest Alaska Transportation Plan (NWATP) Forecasts

The *NWATP* forecasts were developed considering recent (as of their March 2019 development) trends at the study area airports and population forecasts developed for communities in the region developed by Northern Economics in February 2019. A number of characteristics distinguish the DOT&PF's Interior region aviation system from DOT&PF's Northwest region aviation system, and this wide variance in the nature of each region's aviation system makes the *NWATP* aviation activity forecasts less relevant to the IATP forecasts than other, more local studies and factors. Population projections factored heavily in the *NWATP* forecasts, and population trends are distinct between regions (and within subregions of each study area). The Northwest region has a more classic hub-spoke route structure and clear relationships between airports of varying levels of service, and the forecasts were structured on these distinctions. The vast majority of the Northwest region airports are off the road system and provide the only year-round mode of transportation to communities, as opposed to the majority percentage of IATP airports being located on the road system. Oil exploration and development factor in the Northwest region aviation activity but play little role in the Interior region. The Northwest region airports are also far more heavily dependent on Essential Air Service (EAS) and the bypass mail system, which play only minor roles in the Interior region.

The *NWATP* had input from 11 air carriers and one medevac operator, and that input was used in development of *NWATP* forecasts. It was also found to be insightful for the IATP study overall. Many carriers serving the Northwest region also operate in the IATP region. Stakeholder input for the IATP is discussed further in Section 4.0.

3.7 Socioeconomic Trends

Most of the IATP area consists of small communities, and the existing economy (outside of Fairbanks) is based primarily on supporting the resident populations. The majority of jobs in the region are provided by government, mining, and service industries. The economy of the IATP area is heavily influenced by visitors, activity from the state and national parks and preserves, and mining activity. Though analysis of these socioeconomic factors provides a detailed and important snapshot of the IATP area, only population growth, personal consumption expenditure, and per capita personal income are used as definitive factors in development of the forecast. Ultimately employment, tourism, and mining trends were found to be dynamic and difficult to apply to accurately predict aviation activity across the entire region.

3.7.1 Population Growth

The IATP region includes all or portions of six borough/census areas. Not all of the populations lie within the IATP region boundaries. Very little of the Matanuska-Susitna Borough lies within the IATP region boundary, and only the eastern portion of the very expansive Yukon-Koyukuk Census Area (which stretches all the way west and south to Holy Cross, near Norton Sound on Alaska's west coast) falls within the IATP region boundary. Table 48 presents historical population counts from 2011-2022, obtained from the Alaska Division of Community and Regional Affairs (DCRA) Certified Population Counts. Table 49 presents population projections from a base year of 2021 through 2040, obtained from the Alaska Department of Labor and Workforce Development (DOLWD) website, Research and Analysis Section. Slight variations in the 2021 data are due to differences in how each organization determined data for that year.

Table 48. Alaska Division of Community and Regional Affairs Certified Population Counts 2011-2022

Borough/Census Area	2011	2019	2020	2021	2022	Change 2011-2022[3]	Avg Annual Change
Copper River Census Area[1]	No data	No data	2,699	2,644	2,619	-80	-1.5%
Denali Borough	1,820	1,860	1,806	1,655	1,645	-175	-0.9%
Fairbanks North Star Borough	97,615	95,898	97,159	97,515	96,747	-868	-0.1%
Matanuska-Susitna Borough	91,697	106,438	107,305	108,805	111,752	+20,055	+1.8%
Southeast Fairbanks Census Area	7,103	6,937	6,937	6,951	7,046	-57	-0.1%
Yukon-Koyukuk Census Area[2]	No data	5,230	5,044	5,255	5,184	-46	-0.2%

[1] The Copper River Census Area was designated in 2019 when it was split from the Valdez-Cordova Census Area

[2] No data was reported for the Yukon-Koyukuk Census Area prior to 2019

Change for the Copper River and Yukon-Koyukuk Census Areas is between the earliest reporting year for each area (2020 and 2019, respectively) and 2022

The populations of the Fairbanks North Star Borough and the Copper River, Southeast Fairbanks, and Yukon-Koyukuk Census Areas have decreased since 2011. Only the Matanuska-Susitna Borough has shown growth in the 2011-2022 period.

Table 49. Alaska Department of Labor and Workforce Development Population Projections 2021-2040

Borough/Census Area	2021	2025	2030	2035	2040	Change 2021-2040	Avg Annual Change
Copper River Census Area	2,626	2,576	2,484	2,390	2,309	-317	-0.6%
Denali Borough	1,655	1,505	1,420	1,340	1,265	-390	-1.2%
Fairbanks North Star Borough	97,515	98,790	100,278	101,136	101,585	+4,070	+0.2%
Matanuska-Susitna Borough	108,805	114,936	122,830	130,298	137,132	+28,327	+1.4%
Southeast Fairbanks Census Area	6,881	6,837	6,763	6,669	6,557	-324	-0.2%
Yukon-Koyukuk Census Area	5,255	4,976	4,766	4,563	4,379	-876	-0.9%

The populations of the Fairbanks North Star Borough and Matanuska-Susitna Borough are projected to increase over the forecast period. While historical trends show the Fairbanks North Star Borough losing population over the preceding 12 years, projections show a slight growth of 0.2 percent annually over the forecast period. The Matanuska-Susitna Borough is expected to continue its growth, but at a slower pace than it has over the preceding 12 years. The populations of the Copper River, Southeast Fairbanks, and Yukon-Koyukuk Census Areas are projected to decrease. The DOLWD projections indicate that the decrease in population for the Copper River Census Area is expected to slow from historical population loss (decreasing at 0.6 percent annually over the forecast period, as opposed to its historical average annual decrease of 1.5 percent). The populations of the Denali Borough, Southeast Fairbanks Census Area, and Yukon-Koyukuk Census Area are projected to decrease at faster rates over the forecast period than they have historically.

As smaller populations can be influenced by the changes in the region and the state as a whole, a holistic analysis determined trends by the region, Fairbanks (due to its strong presence in the region), and all of Alaska. *Figure 10* illustrates these projected growth rate percentages and the correlation between them.

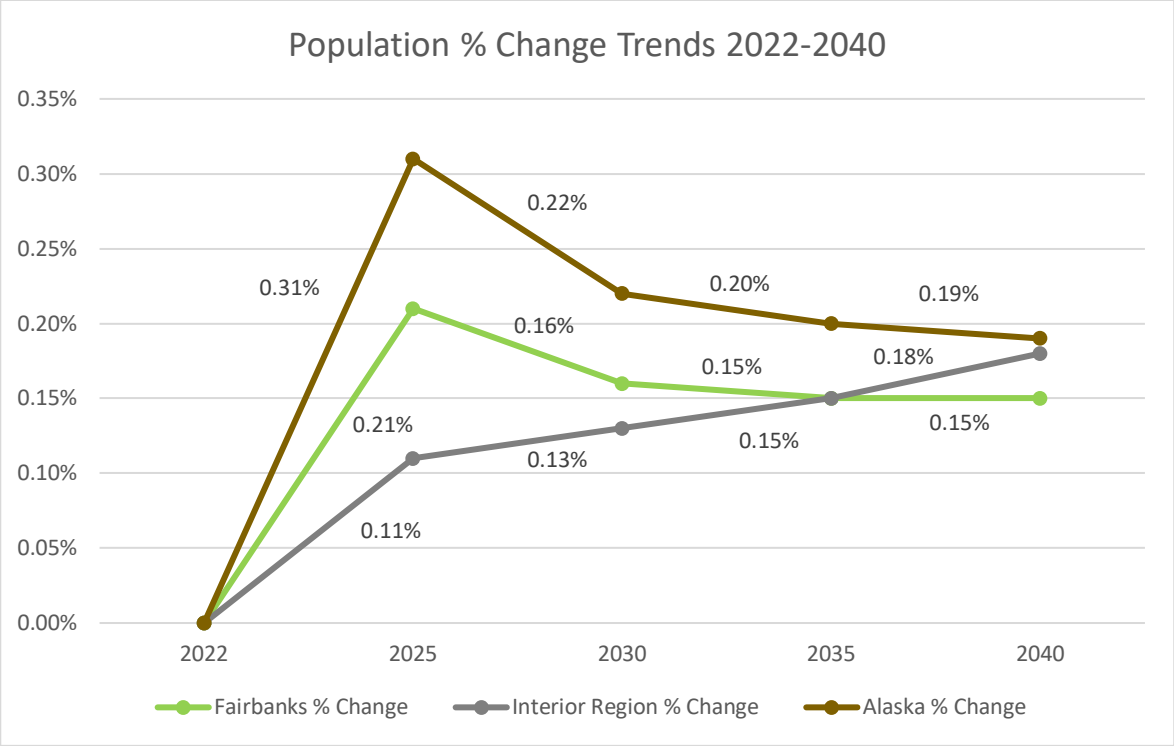


Figure 10. Population Percent Change Trends, 2022-2040, DOLWD

3.7.2 Employment

The DOLWD Research and Analysis division produces monthly and annual employment statistics. The total employment for the Interior Region, as defined by the DOLWD, from 2011-2023 is shown in *Figure 11.* The Interior Region, defined by the DOLWD, includes the Yukon-Koyukuk Census Area, Fairbanks North Star Borough, Denali Borough, and Southeast Fairbanks Census Area. Total annual employment is the sum of all annual averages for each industry reported. Employment in the Interior Region has seen an average annual decline of 0.9 percent since 2011.

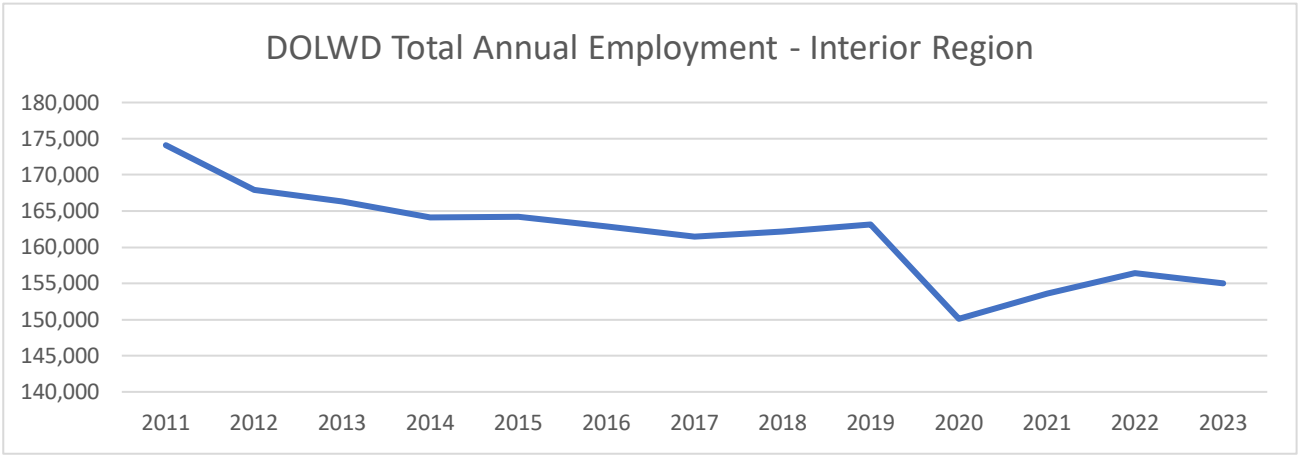


Figure 11. DOLWD Total Annual Employment – Interior Region

3.7.3 Tourism

Tourism is a sizeable factor in the economics of the IATP region. The tourism industry took heavy losses during 2020, but it has rebounded sharply in the years since. The April 2023 *Alaska Economic Trends* report by the DOLWD indicates that a continued return to normal is expected, with some uncertainty due to the possibility of an economic recession and the continued difficulty in meeting employment levels to match demand.

There are three National Parks and Preserves within the IATP region that draw large numbers of tourists to the area (*Figure 12*). The Denali National Park and Preserve and the Wrangell-St. Elias National Park and Preserve draw hundreds of thousands of visitors each year to the region. The National Parks Service (NPS) reports National Park Service Visitor Use Statistics online at: STATS - Welcome to Visitor Use Statistics (nps.gov). Annual visitors and the year-over-year change are presented in *Figures 13-15*. Visitor numbers have been increasing sharply since 2020, with pent up travel demand being realized. Tourism is generally expected to continue to grow statewide, and recovery to pre-pandemic levels with steep increases in activity is anticipated within the near term, with long-term growth more in line with past trends. Air traffic within the Parks and Preserves includes flightseeing, hunting/fishing, and private and agency aviation activity.

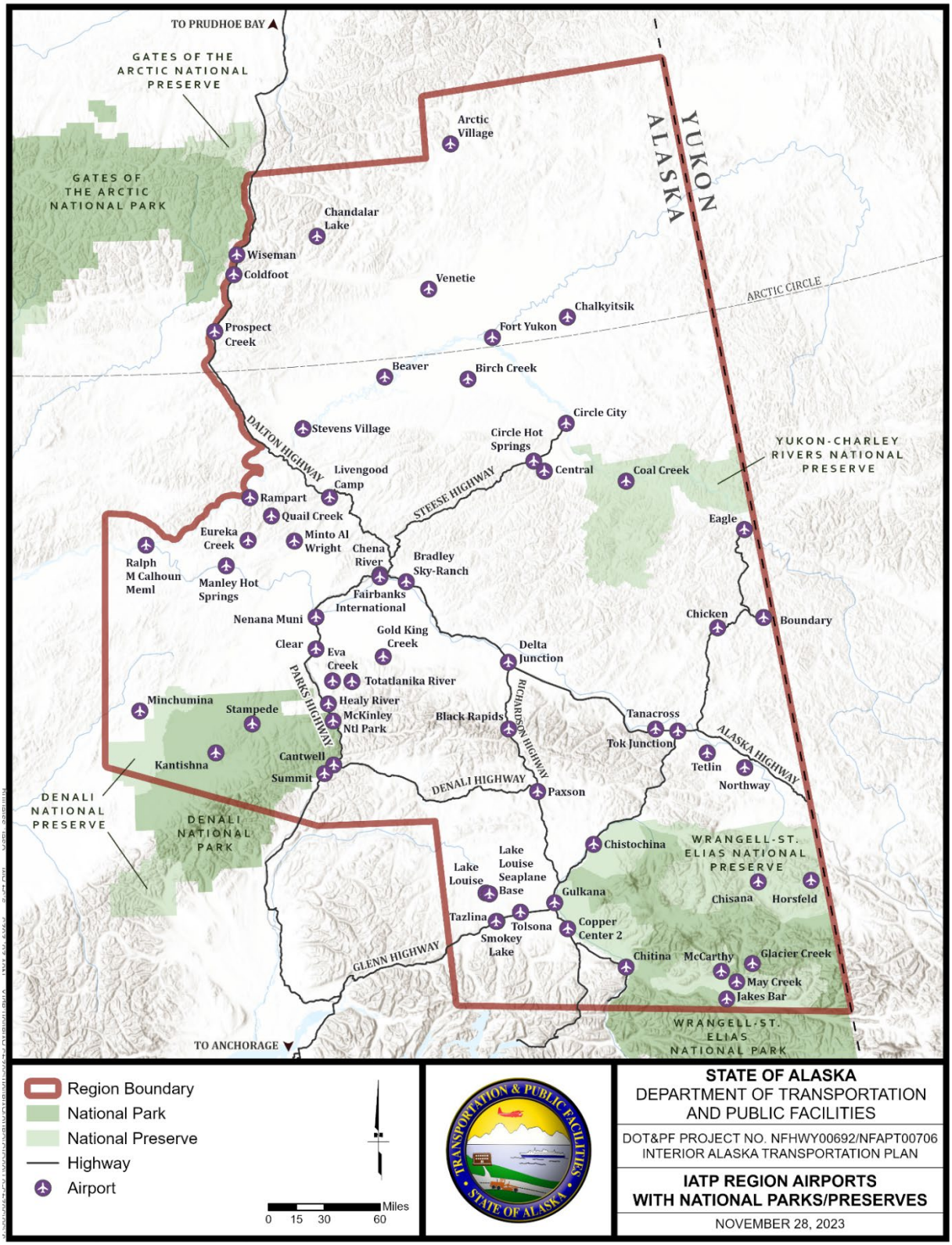


Figure 12. National Parks/Preserves in the IATP Region

Denali National Park & Preserve: Prior to the pandemic (2011-2019), the number of visitors was growing at an annual average of six percent per year. The recovery has been substantial since 2020, and although visitor numbers have not yet returned to pre-pandemic levels, this region expects continued strong growth in tourism for the long term.

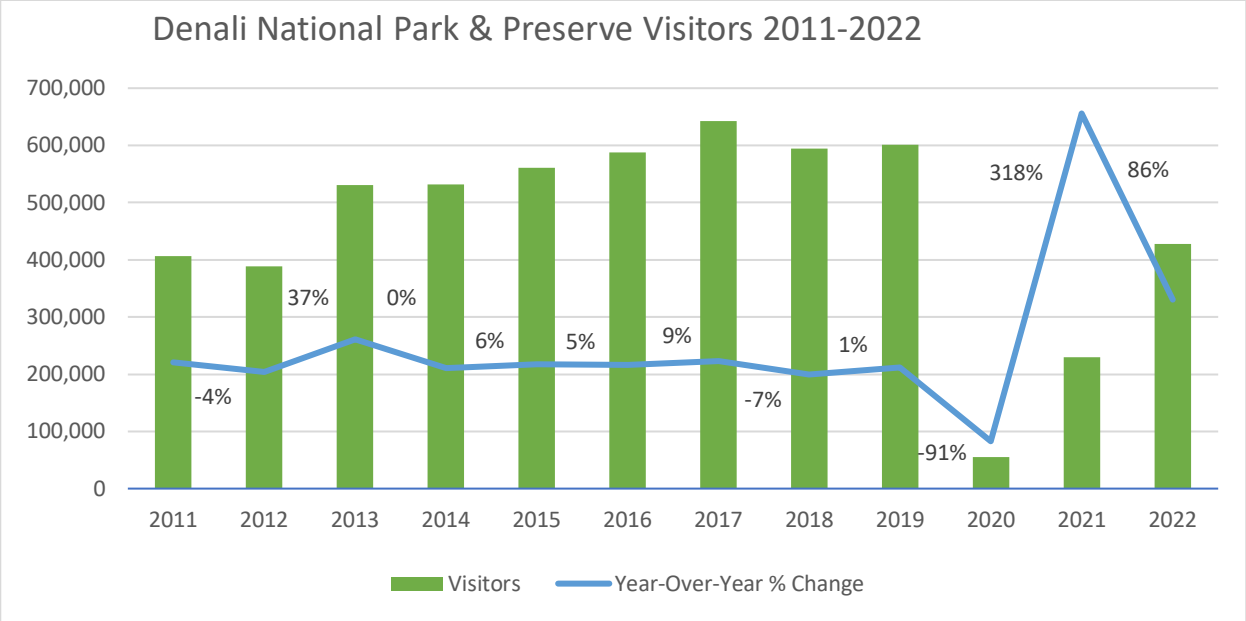


Figure 13. Denali National Park & Preserve Visitors 2011-2022

Wrangell-St. Elias National Park: Prior to the pandemic (2011-2019), the number of visitors was growing at an annual average of one percent per year.

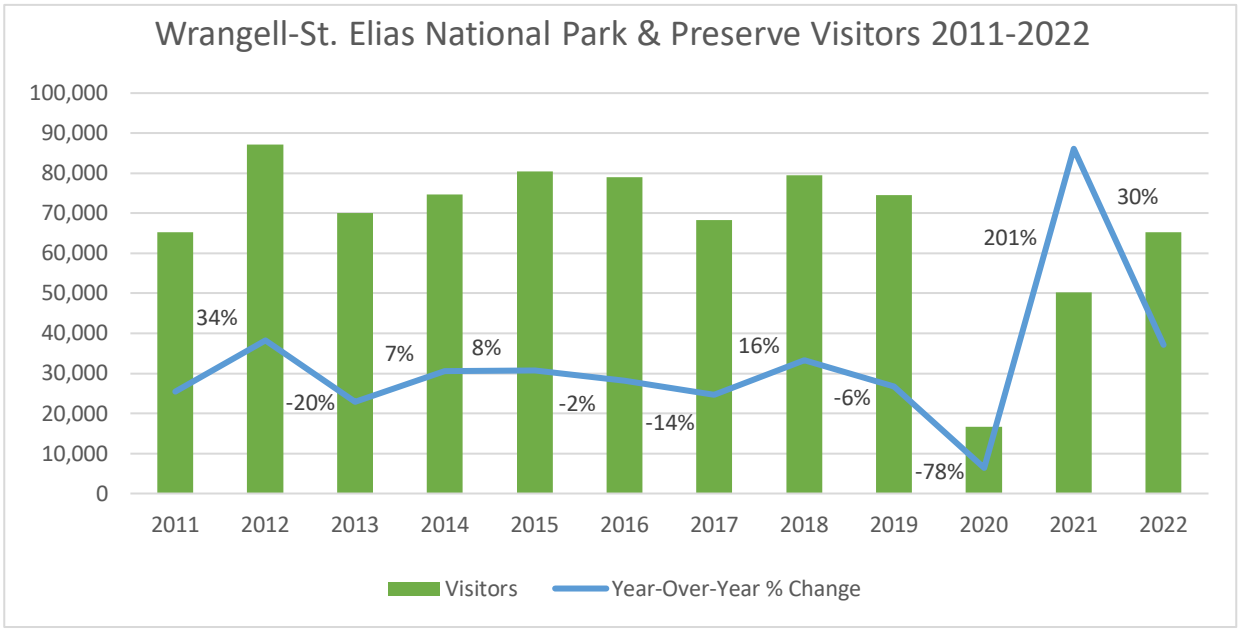


Figure 14. Wrangell-St. Elias National Park & Preserve Visitors 2011-2022

Yukon-Charley National Preserve: Prior to the pandemic (2011-2019), the number of visitors was declining at an annual average of four percent per year. The number of visitors to this Preserve is much smaller than those visiting Denali or Wrangell-St. Elias. The number of visitors was holding fairly steady at an average of 1,100 annual visitors from 2015-2019.

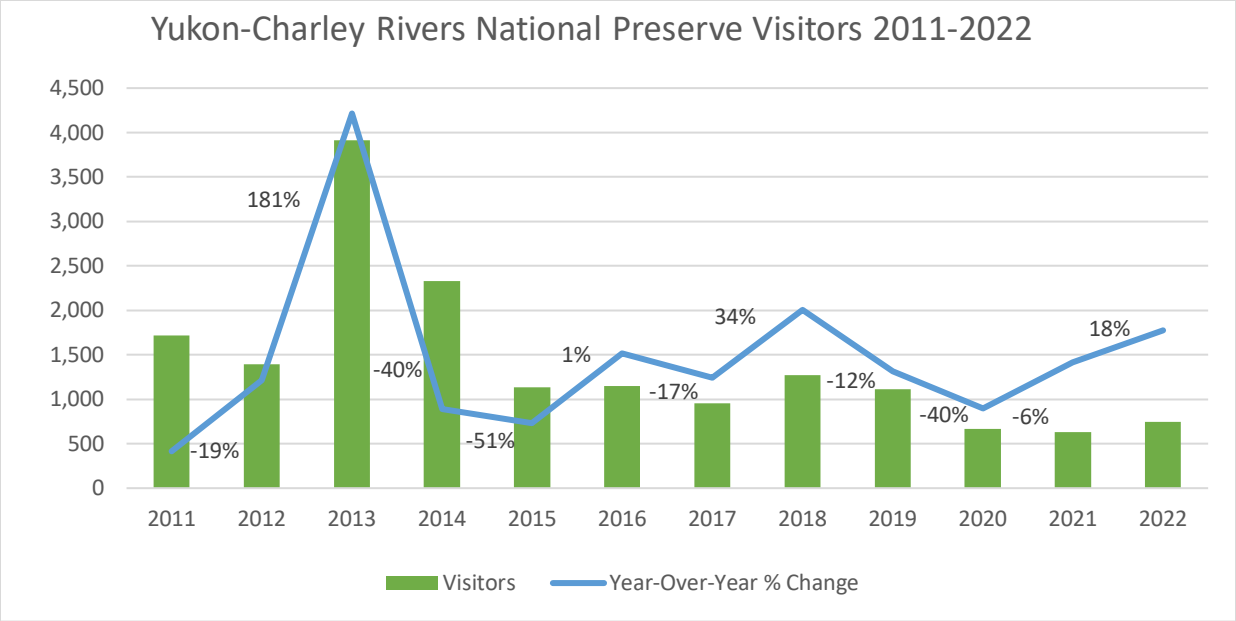


Figure 15. Yukon-Charley Rivers National Preserve Visitors 2011-2022

3.7.4 Mining

There are several mining exploration and development projects within the IATP region. Kinross Gold (Alaska) has plans to develop an open-pit gold mine called Manh Choh in an area near Tok and Tetlin, roughly 250 miles southeast of Fairbanks. Raw materials would be hauled via the highway and other roads to the Fort Knox processing mill just north of Fairbanks. Kinross reports that the mine may generate 400 jobs in the area. If the project is deemed feasible and permits are obtained, production could begin as early as 2024.

Doyon owns millions of acres of land in Alaska, and the Doyon Region includes most of the IATP area, as shown in *Figure 16*. Much of the land has rich and unexplored mineral potential in gold, cobalt, copper, nickel, rare earth elements, and other precious metals. Partnering with Tectonic Metals, Inc. (a Canada-based exploration company), Doyon has begun exploratory work in the IATP region at the Seventymile, Road Metals, Tibbs, and Maple Leaf projects, among others. Seventymile lies roughly 170 miles east of Fairbanks near Eagle. Tibbs and Maple Leaf are located in the Big Delta B1 Quadrangle east of Fairbanks and north of Healy Lake. The Road Metals project is near the community of Northway. These are just some of the mineral properties owned by Doyon – additional sites within the IATP region in earlier stages of exploration include the Sawtooth (65 miles northwest of Fairbanks, just north of the Elliott Highway) and Nenana gold prospects and the Tofty, NW Rampart, and Fortymile District prospects containing precious, base, and critical metals properties.

Mining activity in the region may generate modest increases in aviation activity, from exploration activities at many off-road sites and from the eventual jobs and economic impacts to the region that may increase levels of general and commercial aviation.

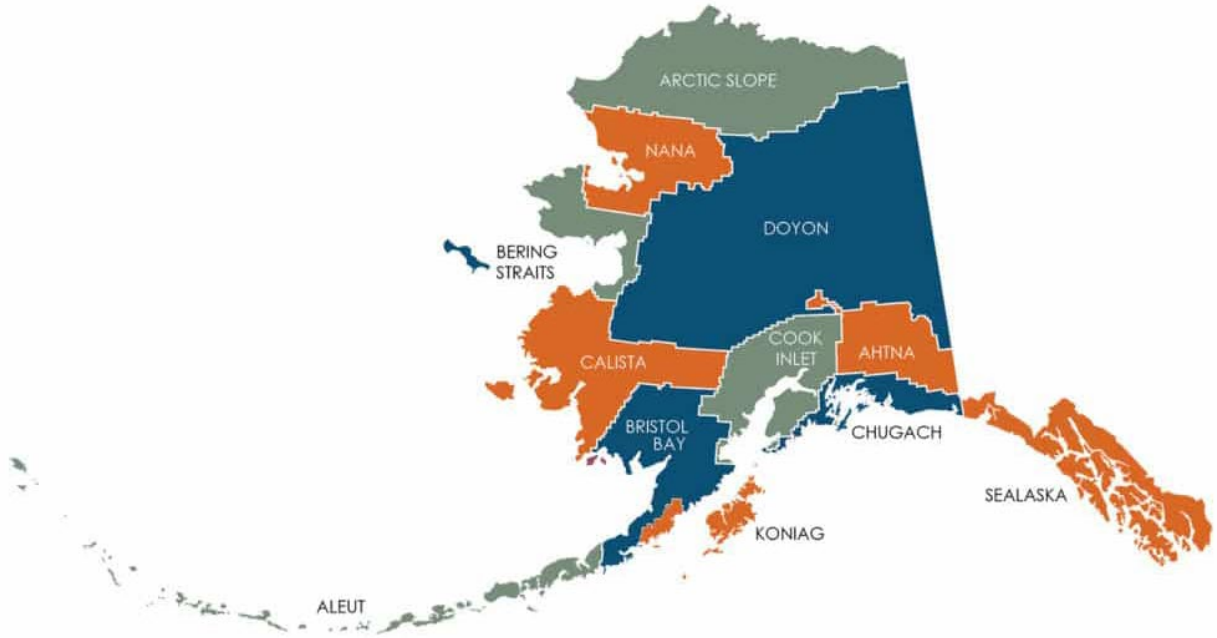


Figure 16. Alaska Native Claims Settlements Act (ANCSA) Regions (Source: ANCSA Regional Association)

3.7.5 Personal Consumption Expenditure Price Index

The personal consumption expenditure (PCE) price index can be a strong indicator of economic activity and expenditure on goods and services within a region. The PCE price index looks at U.S. inflation by measuring changes in the cost of living for households and gives a glimpse in changes in consumer behavior. The PCE price index was examined for the United States and adjusted for Alaska. *Figure 17* shows that the adjusted PCE in Alaska, per billion United States Dollars (USD), is projected to decrease from 11 percent to 2.4 percent from January 2022 to January 2040.

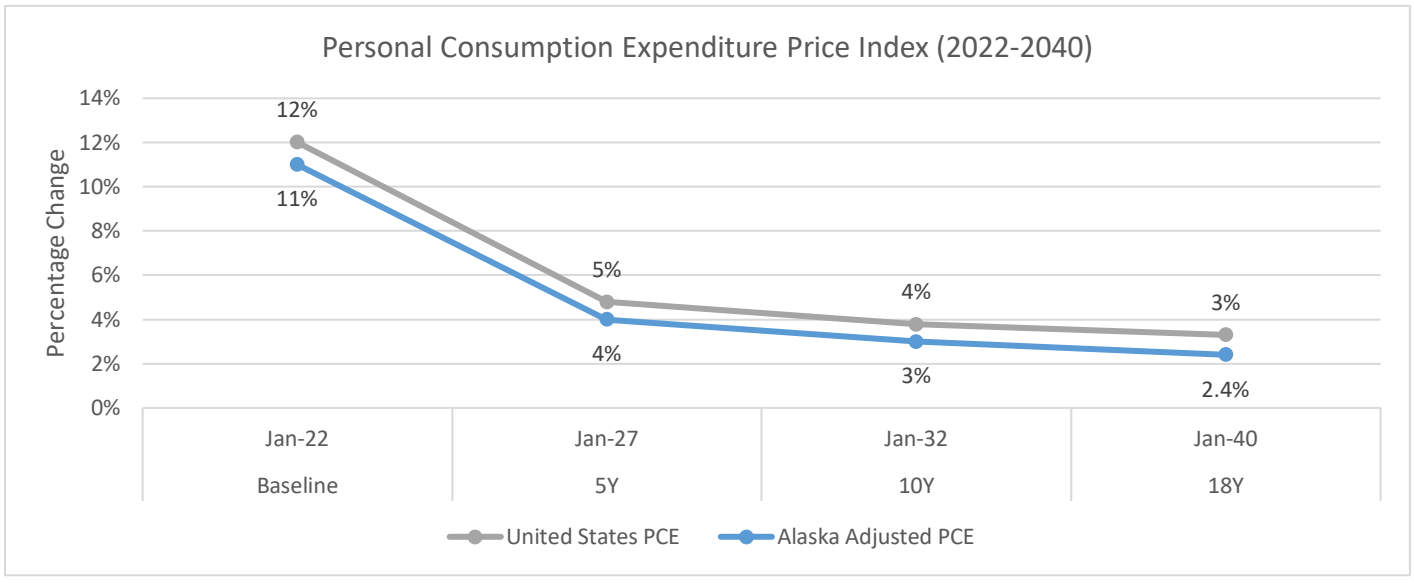


Figure 17. Personal Consumption Expenditure Price Index (2022-2040). Source: U.S. Bureau of Economic Analysis (2023)

3.8 Forecast Development

Factors considered to be most influential in development of forecast activity for the IATP region include population, national and regional economic trends, published historical activity, and interviews with regional air carriers. Forecasts developed for

the IATP region considered the influence of the COVID-19 pandemic on aviation activity and the rebound in activity seen so far in the post-pandemic period. Although many influencing factors were considered and presented in this chapter, the forecasts were ultimately based primarily on economic and population metrics.

3.8.1 COVID-19 Effects

The COVID-19 pandemic has had severe and undetermined effects on the aviation industry. The *FAA Aerospace Forecast Fiscal Years 2022-2042* notes that:

The rapid spread of the novel coronavirus (COVID-19) that began in early 2020 resulted in the largest decline in aviation activity since the jet era began in the late 1950s. Although the FAA forecast is a long-term trend forecast and it has been almost two years since a global pandemic was declared, there is still a good deal of uncertainty about the path of aviation's recovery from the 2020 downturn. This uncertainty arises from a variety of factors including the willingness of consumers to resume air travel as infection rates are reduced, the success of the strategies U.S. and foreign carriers are employing to recover from the downturn in demand, the stability of consumer attitudes and behaviors towards aviation in a post-COVID environment, as well as the breadth and depth of the and the speed and nature of the economic recovery, all of which apply both domestically and globally.

Within Alaska, the COVID-19 pandemic had a significant impact on air travel in Alaska, leading to a period of reduced demand, increased health and safety measures, and changes in travel regulations. Airline activity during the pandemic had the most drastic impact on aviation in 2020, when several airlines suspended service to some remote communities due to reduced demand and safety concerns.

The post-pandemic period has seen rapid growth in enplanements because of returning service by the airlines and a resurgence of tourism travel; however, other factors such as changes in airline routes, mergers, and economic fluctuations have contributed to fluctuations in passenger numbers.

3.8.2 Forecast Methodology

The forecasts were developed using historical air traffic estimates (FAA's Passenger Enplanement data, 5010 Airport Master Records, and U.S. Department of Transportation Air Carrier Statistics data) and population forecasts (population projections through 2040 for the Regional communities from the Alaska Department of Labor and Workforce Development, Research and Analysis Section), the personal consumption expenditure (PCE) index, and per capita personal income for communities in the Interior developed for this evaluation.

Interviews with regional air carriers were also considered in the forecast development. Sources interviewed for this report and stakeholder input from other recent aviation planning efforts provided qualitative information, insightful to aviation expectations and trends A summary of stakeholder input is included in *Appendix 6: Stakeholder Input Used in IATP Update*.

The forecasting method was a time-series trend with smoothing from socioeconomic and interview data. A summary of the chosen forecast percentage metrics used for smoothing in this forecast is illustrated in Table 50.

Table 50. Forecast Percentage Metrics used for Smoothing

Source	Baseline	+1 YR	+2 YR	+3 YR	+4 YR	+5 YR	+10YR	+18 YR
Personal Consumption Expenditure Index (PCE)	11.1%	11.1%	10.1%	9.2%	8.3%	4.0%	3.0%	2.0%
Per Capita Personal Income (PCPI)	5.7%	6.7%	7.6%	8.6%	9.7%	11.0%	13.1%	7.1%
Fairbanks Population	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.15%
Interior Population	1.7%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.2%
Alaska Population	-0.04%	-0.04%	0.0%	0.31%	0.0%	0.0%	0.0%	0.19%

Baseline (2022) data for the IATP region's airports were developed using the sources mentioned above and FAA Airport Master Record information. Historical growth rates for aviation indicators, such as enplaned passengers, commercial flights, and deplaned mail and freight, were developed from historical data. The growth factors of regional aviation indicators were combined with the growth rates of the population estimates for each airport, combined with base year data, and projected out until 2040. The growth estimates for these forecasted indicators are explained below. Rounding errors may be present. The consultant's preferred estimate (CPE) was determined with a high, medium, and low forecast for operations at each airport.

The following is a list of growth rates used to develop the Interior Alaska Aviation Traffic Forecasts for this report.

- **Population Growth** – Population growth rates through 2040 for each regional community were obtained from the Alaska Department of Labor and Workforce Development website, Research and Analysis Section.
- **Personal Consumption Expenditure Index (PCE)** – The PCE baseline was obtained from the U.S. Bureau of Economic Analysis Consumer Spending by State, which was 11 percent for Alaska and represented a part of the U.S. national expenditure. The forecasts were obtained from the Financial Forecast Center for PCE for a short-term forecast and were extrapolated until the end of the IATP period in 2040.
- **Per Capita Personal Income (PCPI)** – Per capita personal income was obtained from the U.S. Bureau of Economic Analysis Interactive Data Tables Regional Data GDP and Personal Income (Alaska Non-Metropolitan Areas) 2020-2021. The per capita personal income was $63,883 and represented a percentage change of 5.7 percent for the state of Alaska. This baseline percentage change of 5.7 percent was applied to this forecast via statistical smoothing and combined with the forecast element's respective metrics as detailed in the bullets below.
- **Enplaned Passengers** – Historical enplanement data sourced from BTS T-100 Market statistics were analyzed and presented in Table 35. Due to the devastating effects of the COVID-19 pandemic on passenger volumes, the historical growth rate of 3.0 percent, measured from 2011 to 2019, was chosen as the historical growth factor in this forecast. The derived historical growth factor was then combined with future population, income, and expenditure growth rates for individual communities and individual years (2023 through 2040) and applied to base year estimates to forecast passenger enplanements. In some specific cases, additional smoothing was applied based on interview data.
- **Consultant's Preferred Estimate (CPE)** – The CPE is the estimate of total operations within the Interior. It was calculated using assumptions from the DOT and FAA 5010 data.
- **Commercial Operations** – Historical commercial operations data sourced from the FAA TAF were analyzed from 2002 to 2022, and though mostly static, showed an average annual rate of decline of 1.9 percent for the Interior Region. The TAF uses FAA 5010 Airport Master Record data, which is not always accurate but is at least consistently available data for many of these non-towered airports. The 5010 Master Record data does not indicate any outlier data points due to the COVID-19 pandemic and for this reason post pandemic data was included. The derived historical growth factor (or loss) was then combined with future population, income, and expenditure growth rates for individual communities and individual years (2023 through 2040) and applied to base year estimates to forecast commercial operations. In some specific cases, additional smoothing was applied based on interview data from Tok, Chisana, Chicken, Healy Lake, Delta Junction, Eagle, and McCarthy air operators.

- **General Aviation** – Similarly to historical commercial operations, historical general aviation data were also sourced from the FAA TAF for years 2002 to 2022. The average regional rate of decline was 1.6 percent. The derived historical growth factor was then combined with future income and expenditure growth rates for individual communities and individual years (2023 through 2040) and applied to base year estimates to forecast general aviation operations.
- **Military** – The baseline of military operations was given a growth factor equivalent to Instrument Flight Rules (IFR) operations in the western region Air Route Traffic Control Center (ARTCC) forecast found within the FAA 2023-2050 Aerospace Forecast tables for the Anchorage, Alaska ARTCC (ZAN). Because the forecasted growth was reported as zero percent in the Aerospace Forecast, the historical military IFR growth was extrapolated, and a cumulative growth rate of 1.2 percent was used for the forecast period.
- **5010 Total Operations** – Forecasts were not calculated for 5010 Total Operations, but the data were used to determine the CPE and percentage shares of commercial, general aviation, and military indicators.
- **BTS Total Operations** – Forecast BTS Total Operations were calculated by adding all BTS operations forecasts previously developed.
- **Based Aircraft** – Historical based aircraft data sourced from the FAA TAF were analyzed, and the derived historical growth rate of -6.0 percent was chosen as the historical growth factor. The historical growth factor was then combined with future income and expenditure growth rates for individual communities and individual years (2023 through 2040) and applied to base year estimates to forecast based aircraft counts.
- **Deplaned Freight** – Deplaned freight (freight unloaded at a community) is a better indicator of aviation activity than freight loaded in the IATP region. The historical average regional difference showed a growth of 6.0 percent. For this growth rate, pounds of freight unloaded per community resident were calculated, and grown annually at the population, income, and expenditure growth rate for each community. These growth rates were smoothed by 10 percent each year, in tons for each community that had favorable projected freight growth.
- **Deplaned Mail** – Deplaned mail (mail unloaded at a community) is a better indicator of aviation activity than mail loaded in the IATP region. The historical average regional difference showed a decline of 1.1 percent. The IATP aviation activity forecasts combine freight and mail, so this declining rate was factored into an overall rate for freight/mail combined and projected as described in the "Deplaned Freight" component.
- **Critical Aircraft** – The critical aircraft forecast was developed (without specifying a type) using base year critical aircraft and considered the fleet mix trends for carriers serving the Interior. The report was not required to analyze and recommend Critical Aircraft type forecasts; however, Critical Aircraft Design Groups and associated requirements were considered.

3.9 IATP Aviation Activity Forecasts

The IATP aviation activity forecasts developed low, medium, and high projections for operations, enplanements, mail and cargo, and based aircraft for target year 2040. Forecasts are for the IATP region overall (excluding Fairbanks International Airport). Forecasts for Fairbanks International Airport are not included, but the influence of FAI is considered regarding impacts on regional aviation. Regional forecasts paint a broad picture of aviation activity across the entire IATP area, but factors influencing aviation activity vary widely within this region. The individual airports and individual boroughs/census areas within the IATP region are diverse. Detailed, focused activity forecasts will need to be developed for any airport or sub-region considering development work.

Table 51 presents forecasts of passenger enplanements; commercial, general aviation, military, and total operations; deplaned cargo (mail and freight combined); and based aircraft through 2040. The data excludes Fairbanks International (FAI) statistics and forecasts. The forecast factors in Table 51 are the "High" scenario, and the high scenario factors were chosen based on several considerations suggesting optimistic aviation growth – the ambitious plans for regional airport developments; growth in UAS testing, development, and use; tourism and mining activity; and the expected continued upward trend in online shopping and delivery. The medium and low scenario forecast rates are included in *Appendix 5: Airport Forecasts Data.*

Passenger enplanements for the IATP area are expected to grow at a positive 1.6 percent average annual rate.

Total operations for the IATP area are expected to grow from 88,975 operations (2022) to 108,340 operations (2040) with a positive 1.1 percent average annual rate.

General aviation operations are expected to grow at a faster average annual rate (1.5 percent) than that of commercial operations (0.2 percent) likely due to the expansion of UAS/UAV, eVTOL/VTOL, and NextGen applications in the state.

Military operations are forecasted to grow ever so slightly at an average annual rate of 0.1 percent, following suit with the FAA Aerospace Forecast.

Air cargo is expected to grow at an average annual rate of 2.0 percent.

Based aircraft growth usually grows in tandem with general aviation activity, give or take, depending on the infrastructure available to accommodate based aircraft. The forecast average annual rate of change for based aircraft is 1.9 percent.

Table 51. IATP Region Airport Forecast Levels and Growth Rates, Base Year 2022

							Average Annual Compound Growth Rates (High Scenario)				
	Base Yr. Level (2022)	Base Yr.+1yr. (2023)	Base Yr.+5yr. (2027)	Base Yr.+10yr. (2032)	Base Yr.+15yr. (2037)	Base Yr.+18yr. (2040)	Base Yr. to +1 (2023)	Base Yr. to +5 (2027)	Base Yr. to +10 (2032)	Base Yr. to +15 (2037)	Base Yr. to +18 (2040)
Passenger Enplanements	**21,968**	**22,891**	**27,507**	**28,674**	**29,134**	**29,233**	**4.2%**	**4.6%**	**2.7%**	**1.9%**	**1.6%**
Operations											
Commercial Operations	33,441	34,979	34,800	34,803	34,458	34,666	4.6%	0.8%	0.4%	0.2%	0.2%
General aviation	54,215	56,438	66,918	69,400	70,849	70,877	4.1%	4.3%	2.5%	1.8%	1.5%
Military	1,319	1,344	1,346	1,346	1,339	1,343	1.9%	0.4%	0.2%	0.1%	0.1%
TOTAL OPERATIONS	**88,975**	**92,445**	**103,648**	**107,401**	**107,996**	**108,340**	**3.9%**	**3.1%**	**1.9%**	**1.3%**	**1.1%**
Cargo/Mail (deplaned lbs)	**5,207,447**	**5,499,064**	**6,870,681**	**7,204,902**	**7,324,186**	**7,437,517**	**5.6%**	**5.7%**	**3.3%**	**2.3%**	**2.0%**
Based Aircraft	**181**	**186**	**233**	**246**	**251**	**254**	**3.0%**	**5.2%**	**3.1%**	**2.2%**	**1.9%**

Sources: AASP (2023); FAA (2023); USDOT (2023 | Statistics exclude Fairbanks International (FAI))

3.10 Critical Aircraft Considerations

The critical aircraft, as stated in AC 150/5000-17, is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is set at 500+ annual operations, including both itinerant and local operations, but excluding touch-and-go operations. Each flight generally accounts for two operations (one takeoff and one landing).

The critical aircraft determination is an important aspect of airport planning and design. It sets dimensional requirements on an airport, such as the separation distance between taxiways and runways, and the size of certain areas protecting the safety of aircraft operations and passengers. An accurate critical aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investments in airport facilities.

The critical aircraft in this forecast are determined on a regional level and not for specific facilities, as this exercise is typically reserved for the development of individual airport master plans or airport layout plans. The identification of critical aircraft for individual facilities, for the purpose of capital fund expenditures using federal funds, must be taken into consideration just prior to individual development projects. Airports with more recent or concurrent studies may have specific critical aircraft called out. This chapter does include consideration of the various aircraft, or influences, which will likely be considered for facilities within the region regarding identification of critical aircraft.

Table 52 presents the base year (2022) critical aircraft for the communities in the Interior. The Airport Reference Code (ARC) considers the approach speed and wingspan/tail height of each aircraft in relation to the length and width of the runway they can operate on safely.

Table 52. Base Year (2022) Critical Aircraft for Interior Alaska Airports

Airport	Critical Aircraft Design Group
Beaver, Birch Creek, Black Rapids, Bradley Sky-Ranch, Cantwell, Central, Chandalar Lake, Chena River, Chisana, Chistochina, Coal Creek, Copper Center 2, Eureka Creek, Eva Creek, Glacier Creek, Gold King Creek, Healy River, Horsfeld, Jakes Bar, Kantishna, Lake Louise, Lake Louise Seaplane Base, Livengood Camp, Manley Hot Springs, May Creek, McCarthy, McKinley Ntl Park, Minchumina, Minto Al Wright, Paxson, Quail Creek, Stampede, Summit, Tazlina, Tazlina/Smokey Lake, Tetlin, Tok Junction, Tolsona Lake, Totatlanika River, Wiseman	ADG-I Small
Arctic Village, Boundary, Chalkyitsik, Chicken, Chitina, Circle City, Circle Hot Springs, Clear, Coldfoot, Delta Junction, Eagle, Fort Yukon, Gulkana, Nenana Muni, Northway, Ralph M. Calhoun Meml, Rampart, Stevens Village, Venetie	ADG-II Small
Tanacross	ADG-II Large
Prospect Creek	ADG-III Large

Source: USDOT (2023)

Table 53 presents the preliminary forecasts of critical aircraft design for IATP region airports. While the based aircraft forecast does not indicate that many airports will need to change their design aircraft in the future, the trend toward integrating larger aircraft into the Interior over time and the trend toward more mail and freight movement into the Interior can lend to the expectation that aircraft such as the Beech-1900 may replace some of the smaller critical aircraft in some communities with expected population growth; those communities will need a runway that will accommodate this aircraft.

Table 53. Critical Aircraft Design Group Forecast, Interior Alaska, 2022-2040

Airport	2040 Forecast Critical Aircraft Design Group
Beaver, Birch Creek, Black Rapids, Boundary, Bradley Sky-Ranch, Cantwell, Central, Chandalar Lake, Chena River, Chicken, Chisana, Chistochina, Circle Hot Springs, Clear, Coal Creek, Copper Center 2, Delta Junction, Eureka Creek, Eva Creek, Glacier Creek, Gold King Creek, Healy River, Horsfeld, Jakes Bar, Kantishna, Lake Louise, Lake Louise Seaplane Base, Livengood Camp, Manley Hot Springs, May Creek, McCarthy, McKinley Ntl Park, Minchumina, Minto Al Wright, Northway, Paxson, Quail Creek, Ralph M. Calhoun Meml, Stampede, Summit, Tazlina, Tazlina/Smokey Lake, Tetlin, Tolsona Lake, Totatlanika River, Wiseman	ADG-I Small
Arctic Village, Chalkyitsik, Chitina, Circle City, Coldfoot, Eagle, Fort Yukon, Gulkana, Nenana Muni, Rampart, Stevens Village, Tok Junction, Venetie	ADG-II Small
Tanacross	ADG-II Large
Prospect Creek	ADG-III Large

Source: USDOT (2023), based on forecast operational data only

As the demand for air cargo in the Interior grows, the critical aircraft at general aviation airports may also become larger and more demanding, especially in the larger Interior communities. This may require airports in the Interior to expand their runways and taxiways and improve their air traffic control systems. In addition to the critical aircraft, other factors that will affect airport infrastructure development in the future include growth of tourism in the Interior, mining activity in the region, development of new oil and gas resources on the North Slope, and increasing use of drones and other unmanned aircraft.

3.11 Potential Impacts on Regional Facilities from Possible Trends of New Technology

3.11.1 UAS/UAV Trends

Unmanned Aircraft Systems (UAS) and Unmanned Aerial Vehicles (UAV) have the potential to revolutionize transportation in Alaska. These technologies could provide new ways to access remote communities, deliver goods and services, and support search and rescue operations. However, the following challenges need to be addressed before UAS and UAV can be safely and effectively deployed in Alaska and the Interior:

- Alaska is a vast, remote, and rugged environment, with extreme weather conditions that can pose a challenge for all flight operations, inclusive of UAS and Advanced Air Mobility (AAM) operations. Many parts of Alaska lack the infrastructure needed to support UAS and UAV operations, such as broadband internet service and weather reporting.
- Maintenance of the existing airport facilities in the Interior has proven to be a challenge to sponsors. Lighting systems – which are a critical component of instrument flight rules and aviation safety – are challenging to maintain or upgrade. Though periodic funding may be available, the availability of skilled aviation electricians willing to go to these remote locations and put themselves in harm's way in a harsh environment provides a challenge.
- The regulatory environment for UAS and UAV is still evolving, and there is a need for clear and consistent regulations that will allow these technologies to be safely and effectively deployed in Alaska. Though the FAA has established an Advanced Aviation Advisory Committee to provide independent advice and recommendations to the FAA on key UAS and AAM integration issues, interests, and policies, has released an Urban Air Mobility (UAM) Concept of Operations, and has published Vertiport Design Standards to support the safe integration of AAM aircraft, widespread implementation within operations have not yet been adopted.
- UAS and UAV operations could generate noise pollution, which could be a nuisance to residents and wildlife.

Despite these challenges, there is a growing interest in UAS and UAV in Alaska and the IATP region. Several companies are working to develop UAS and UAV solutions that are specifically designed for the Alaskan environment. These companies are working with the FAA and other stakeholders to address the regulatory challenges. The following potential benefits of UAS and UAV in Alaska are significant:

- UAS and UAV could be used to deliver goods and services to remote communities that are currently difficult or impossible to reach by road or air and provide new ways to access remote communities. One such example is autonomous cargo flights. The bypass mail service and EAS to the Interior are critical aspects that create recurring costs to the state and the United States Postal Service. Autonomous cargo flight operations could be an efficient option. To capitalize on this, airport sponsors would need to identify the priority of centralized facilities that could serve as preliminary autonomous cargo and mail locations within the Interior. Existing infrastructure, such as roads, for logistic supplies and consumables, power, internet, water, suitable housing, and the development of existing hangar structures would create viable options for short-term demand. UAS and UAV operators will need these in place to quickly build and capitalize on the market.
- UAS and UAV could improve search and rescue operations for missing persons or survivors of accidents in remote areas. The use of UAS could reduce the overhead costs for the search and rescue (SAR) units and allow for multiple concurrent flight operations to locate survivors in a timely manner. This is a proven method adopted by aerial firefighting units that deploy several aircraft to combat bush fires with multiple water bombardments and increased air coverage. Identifying airfields that specialize in SAR operations would be important. Efficient operations may encourage higher profitability, and it may also encourage these operators to invest in faster aircraft and equipment for medical evacuations. This would eventually require future planning for longer runways and larger hangars and not the usual T-hangars.
- UAS and UAV reduce the cost of transportation for goods and people, which could reduce the cost of transportation into the Interior. Eleven of the airports in this report are remote Community On-Road airports and, though road accessibility is available, the commute time can be long, especially during bad weather. The demand for this would be greater in areas of higher population growth to avoid traffic congestion for deliveries. Targeting less populated communities should be something to consider in the long term.

The use of UAS and UAV in Alaska is still in its early stages, but the potential benefits are significant. With careful planning and execution, these technologies have the potential to improve the quality of life for Alaskans and make the state more accessible.

3.11.2 NextGen

NextGen is the FAA's initiative to modernize the National Airspace System (NAS). NextGen will use new technologies to improve safety, efficiency, and capacity in the NAS. One of the key components of NextGen is the use of Satellite-Based Augmentation System (SBAS) Navigation. SBAS will provide more accurate and reliable navigation data for aircraft, which will help improve safety and efficiency. This will reduce the need for older, localized navigational facilities like non-directional beacons (NDBs), very high frequency omni-directional station (VORs), and instrument landing systems (ILSs). However, caution should be used when depending only on satellite-based navigation. Some sort of secondary navigation facilities may still be required during solar flares or meteorological phenomena.

Another key component of NextGen is the use of NextGen air traffic control (ATC). NextGen ATC will use new technologies to manage air traffic more efficiently and safely. The Interior is one of the areas that will benefit most from NextGen. The Interior is home to several remote communities that are currently difficult to reach by air. Challenges to growth caused by continual disruption of service (delays or costly re-routes) and IFR activity because of limitations from high activity within military operating areas (MOAs) and their extensive areas are abundant. For many of these Interior communities, NextGen will make it easier and more efficient to fly to these communities, through increased navigation reliability and traffic management, safety flight following, search and rescue coordination, and increased military flight route separation. New satellite technologies may be used to improve weather forecasting, which will help prevent accidents, incidents, and route-planning reliability. It would also remove the need to have a localized weather facility that is costly to maintain or implement.

NextGen is a major initiative that will have a significant impact on the Interior. By improving safety, efficiency, and capacity in the NAS, NextGen is expected to make it easier and more convenient to fly to the Interior's remote communities.

4.0 AVIATION SYSTEM ISSUES & NEEDS

4.1 Introduction

The *Aviation System Issues & Needs* section analyzes the existing system and identifies the challenges and problems to be resolved over the 20-year life of the plan. The IATP update has benefited from the development of multiple local, regional, and statewide plans conducted or published within the preceding three years. These plans support the IATP by providing current data on aviation conditions, issues, needs, and priorities. The plans that contributed to the IATP aviation analysis include:

- *Statewide Long-Range Transportation Plan – Alaska Moves 2050* (public review draft published September 2022)
- *FAA Flight Plan 21* (published 2021)
- FAA's *Alaska Aviation Safety Initiative FY21 Final Report* (published 2021)
- *Upper Tanana Airport Planning Study (UTAPS)* (published September 2023)
- *AASP Classifications & Performance Measures* update (published May 2022)
- Various other special studies conducted under the AASP, such as the *Lighting Analysis for Rural Airports* (June 2021) and *Alaska Weather Equipment Needs Summary* (November 2017)

Although the IATP has benefited in many ways from the availability of so many other recently conducted studies, one key element of the IATP has suffered for them – the stakeholder involvement. It is believed that the multitude of recent studies – and the surveys and outreach conducted for each – has created a "survey fatigue." Efforts to reach airport managers, air carriers, and other aviation stakeholders were often ignored or declined.

The collective information and stakeholder input from companion studies and information/input gathered specifically for this IATP update has identified strong and consistent support for a number of aviation investment and development goals. A summary of stakeholder input gathered for this study and referenced from other recent studies is included in *Appendix 6: Stakeholder Input Used in IATP Update*.

4.2 Investment & Development Goals

The recommendations of the IATP are intended to address major local transportation needs that have widespread importance across the region. The project and policy recommendations are in line with the state long-range transportation goals of safety, state of good repair, economic development, resiliency, and sustainability. The aviation recommendations additionally align with FAA priorities and goals, identified in recently published FAA plans, with specific support for increased weather reporting at airports and en route, additional weather cameras, and development of new IAPs.

Stakeholder input is also strongly considered, and although very little stakeholder input was provided for the IATP update specifically, a great amount of stakeholder input has been provided for other aviation plans and studies, and much of it is current and relevant to this plan.

A consistent thread through the various studies and stakeholder comments is the priority placed on safety and functionality. Most airport users and operators prioritize an airport system that provides for safe, efficient, and functional air travel by means of keeping infrastructure in serviceable condition, maintaining and expanding the navigation and weather reporting systems, and providing basic amenities at airports such as fuel and wi-fi. In addition to the basic desire for well-maintained existing infrastructure, there are several airports in the region that have ambitious development plans to better serve the needs of airport users, their communities, and surrounding areas.

4.3 Airport Roles & Classifications

The AASP completed a review of Alaska's airport classifications and published the results in the May 2022 *AASP Phase III Chapter 3 Classifications & Performance Measures* report. This IATP update finds the current classifications for airports in the IATP area to be adequate and reasonable. No changes are recommended, at this time.

There are a number of individual work efforts underway that may justify reconsidered classifications in the future for a few specific facilities. The *UTAPS* has recommended Tok Junction (6K8) be considered for development as a regional facility. Gulkana Airport (GKN) is undergoing an Airport Layout Plan update that will consider development goals for this airport, also potentially serving a greater regional role in the future. Nenana Muni (ENN) is also updating its Airport Layout Plan to consider significant development. The results of these studies and the ultimate completed developments may provide justification at a future date to reclassify these airports.

This IATP update pushes forward one legacy recommendation from the *2010 IATP* regarding Healy Lake. Healy Lake is a community located off the road system, north of the Alaska Highway between Delta Junction and Tok. This community receives Essential Air Service (EAS), currently contracted to 40-Mile Air. The runway at Healy Lake is not registered, is not a facility considered by the AASP, and is not part of the NPIAS. This plan recommends that Healy Lake airport be registered so that it is recognized as an official facility. Inclusion of this facility in the NPIAS should also be considered so that the airport may be eligible for AIP funding. One administrative benefit of getting Healy Lake registered would be its assigned designation (its three- or four-character airport ID code). Currently, several airport databases include operations, enplanements, and other statistics for Healy Lake, but they are mis-designated to Healy River (a completely separate community on the George Parks Highway, with its own registered airport) or to unofficial airport codes.

4.4 Airport Service Level Changes

One of the objectives of this plan is to identify any locations where new or improved airports are needed. This IATP echoes and endorses recommendations from other area plans and heard in public outreach efforts, including:

- The need for improved airports at Tok and Gulkana
- The need to study a potential new airport serving the Denali Borough
- The need to preserve and improve backcountry airstrips and landing strips

Additionally, this plan found one airport that, if left unimproved, is recommended to be deactivated (closed).

4.4.1 Tok Junction Airport

The *UTAPS* is a follow-through on the 2003 *Copper Basin and Upper Tanana Valley Regional Airport Plan* and the *2010 IATP*, which both recommended identifying a regionally significant airport at which to concentrate future development and expansion for the benefit of the entire Copper Basin-Upper Tanana Valley region. *UTAPS* (published September 2023) studied Tok Junction, Tanacross, Northway, and Gulkana airports for their potential as a regionally significant airport. The plan recommends Tok Junction Airport be considered for further evaluation as a regionally significant airport and proposes development plans to support that role.

The study determined that the scale of the regionally significant airport would be driven, in large part, by the need to serve Alaska DNR forestry aviation operations. DNR is currently operating from the BLM-owned Tanacross Airport, but this facility is in poor condition, and continued use would require major maintenance and rehabilitation. Tanacross is not in the NPIAS, so is not eligible for AIP funding, and neither the owner (BLM) nor the primary user (DNR) have the financial resources to make the needed improvements. Without improvements to Tanacross, DNR will need a facility with runway dimensions of at least 5,000 ft in length by 75 ft in width.

A regionally significant airport should be located within close proximity of population centers, airport users, and community services accessed by airport users. A regionally significant airport would also need facilities to serve various other aviation activities, including scheduled and charter commercial passenger service, cargo, transient corporate aircraft, military flights, medevac flights, and general aviation. Airport land should be available, or land acquisition should be feasible, without contamination or development constraints. Facilities and services proposed include lease lots and tie down space, helicopter facilities, fuel service, maintenance space, a pilot's lounge, airport maintenance facilities, certified weather reporting, NAVAIDs, and instrument approaches.

The plans to develop Tok Junction into a regional facility include the upgrade of Runway 7-25 to a 5,000 ft by 75 ft B-II runway; construction of an adjacent ski/gravel strip (1,900 ft by 60 ft); phased development of apron, taxiway, road, and NAVAID improvements; and an ultimate crosswind runway. The total cost for all phases of development is estimated at roughly $32.7 million. It is anticipated that this development will need to be funded by more than just AIP funding. The

runway extension is not fully AIP-eligible, and additional funding may need to be secured by for the length not funded by the FAA. The next phase in pursuing development of Tok as a regional airport is preparation of a master plan (with its accompanying airport layout plan) and additional public and user engagement to investigate several considerations more fully. From the *UTAPS* report:

Tok Junction Airport is recommended for further evaluation because it is within the population center of Tok which generates much of the aviation demand expected for the airport and it is near the lodging, food, supplies, and services used by airport employees and users. It is home to the DNR Forestry firefighting headquarters, which would like to relocate to Tok Junction Airport if improvements are made. While many aviation services and improvements are already available at Tok Junction, development of the regional airport would require considerable investment in an extension of the main runway to approximately 5,000 feet, a possible crosswind runway, associated taxiway expansions, and apron expansion. Some of these improvements were already proposed in the current ALP. Some of the improvements can be made on the existing airport, but property acquisition would be needed for the runway extension and crosswind runway. This site would benefit from the large presence of airport maintenance and operations (M&O) staff and equipment at the airport and the nearby Tok Maintenance Station, about 2 miles away.

A summary of why the other airports were not recommended by *UTAPS* for further consideration:

- Tanacross – contamination, non-NPIAS, owner or user agencies not in a position to fund needed improvements, lack of existing amenities and services
- Northway – distance from population centers, at outer border of fire response area, lack of existing amenities and services
- Gulkana – outside the Upper Tanana Valley and serves a geographically separate area, already considered a regionally significant airport by users for the region in which it is located, getting an Airport Layout Plan (ALP) update in 2023.

4.4.2 Gulkana Airport

Gulkana Airport (GKN) is already considered a regionally significant airport by many users, even though it is not officially classified as such. GKN is currently a GA-Local airport in the NPIAS and a Community On-Road airport in the AASP classification system. The update to Gulkana's ALP considers development needs for this airport to become a regional facility. Primary drivers for this work include anticipated growth in visitors to the area, forecasts that indicate the airport may see increasing numbers of operations by larger aircraft, community desires to increase cargo operations, and the potential to support medevac and fire tanker bases.

GKN is primarily used for scheduled and charter flights, military training, medevac services, law enforcement, firefighting, recreation flying, and flight training. Reeve Air Alaska currently has an Essential Air Service (EAS) subsidy for scheduled air service to and from Anchorage, and Copper Valley Air Service currently has an EAS subsidy and a mail contract between Gulkana and May Creek and McCarthy. Much of the air traffic at GKN is generated by flights to the Wrangell-St. Elias National Park and Preserve and other back country areas for tours, hunting, fishing, camping, hiking, and other backcountry activities. During summer and fall hunting season, a large amount of GA traffic by aircraft not based at GKN uses the airport to access fuel and other services.

GKN has two runways – a 5,001 ft by 100 ft paved runway and a 2,300 ft by 60 ft gravel runway. The airport already has most facilities suited to meet the needs of a regionally significant airport, including fuel service, maintenance, and tie downs. The primary needs for developing the airport into a regional facility include an apron and lease lot expansion. Gulkana is the only airport in the IATP region with a documented need for additional lease lots and additional parking area (AASP Performance Measures reporting). Additional consideration is being given to extending the runway, relocating the gravel runway, and development of a float pond. The completed ALP specifies ultimate development goals for GKN.

4.4.3 Denali Area Airport Planning Study

Initiated in mid-2023, the *Denali Area Airport-Planning Study* will study the airport needs of the Denali Borough area to determine the most appropriate airport site or sites for future public investments. The Denali Borough includes the communities of Anderson/Clear, Healy, Denali Park (formerly known as McKinley Park or McKinley Park Village), Cantwell,

and a number of smaller settlements. The communities and Alaska Native Corporation Doyon, Limited have great interest in an airport configuration in the borough that supports local needs, tourism, and industry.

Infrastructure needs in this area are changing, and the study will analyze airports in the Denali Borough to identify and propose alternatives for the most suitable location for future aviation investment in the area. Facilities included in the analysis include Clear, Gold King Creek, Healy River, Kantishna, and Summit, but the analysis may include consideration of a completely new airport location.

4.4.4 Backcountry Airstrips and Landing Strips

Alaskan backcountry airstrips and landings strips are an important aviation resource. They provide access to remote areas and support recreation, hunting and fishing, flight training, state and federal agency access to their lands, and emergency landings. In the remote and largely roadless IATP region, subject to harsh and rapidly changing weather conditions, landing strips (both backcountry strips and strips located along road systems) are especially important. Pilots must often traverse long distances between population centers, and there is a need for safe places to land in between. Comparable to rest stops or pull outs along highways, some runways' most critical role may simply be to remain available and serviceable to aircraft en route to other destinations.

It is the policy of the DOT&PF that these essential facilities be preserved and protected and continue to benefit Alaskans. These facilities are not in the NPIAS and are not eligible for federal funding. Thus, a functional preservation strategy includes efforts to educate the public on the benefits of these facilities, a system for pilots to report conditions of these airstrips, and the coordination of volunteer/stakeholder groups for maintenance efforts. This plan recommends the work of the Backcountry Airstrip Work Group be revived and continued to further explore opportunities for volunteer/stakeholder involvement in the maintenance of landing strips important to the aviation community.

Several backcountry airstrips need critical improvements to remain serviceable. Of these, Eva Creek (2Z3), a DNR-owned facility, is in the most urgent need for maintenance and improvements. Eva Creek (2Z3) is located east of the Parks Highway, between the communities of Healy River and Anderson/Clear. Remarks published through the ADIP indicate that the runway acts as an emergency landing field for light planes only. The last Form 5010 inspection was conducted in 2020, and the inspection report includes the statement that this runway is unusable. This plan recommends DNR make the improvements necessary to restore this airstrip to a safe, usable condition. It is published as a public-use facility, and the expectation should be that published facilities are usable.

Several other airports have been remarked as being unmaintained, in poor condition, and trending toward the unusable conditions found at Eva Creek. Glacier Creek (KGZ), Jakes Bar (AK0), Quail Creek (20K), and Totatlanika River (9AK) are among the most notable. These airports – as well as several other unmaintained facilities – are either in the public domain (no identified owner) or are owned by agencies that do not have the resources or expertise to effectively own and operate airports. If a Backcountry Airstrip Work Group is formed (as this plan recommends), and efforts successfully identify volunteer or stakeholder groups that will maintain airstrips, their work could be vital to keeping these landing strips usable.

4.4.5 Airport Recommended to be Deactivated

There is one airstrip – Eureka Creek (2Z2) – that appears to have fallen into such a state of neglect and deterioration that, without major improvements, should be deactivated (closed and removed from FAA's publications and charting). Eureka Creek (2Z2) is located near the western border of the IATP area, northeast of Manley Hot Springs along the Elliott Highway. Eureka Creek has no identified owner. Documentation as far back as 2005 recommended the airport be decommissioned at that time. The Form 5010 inspection report from 2013 remarks that the airport is dangerous and overgrown. The last Form 5010 inspection was conducted in 2020, and the inspection report includes the statement, "The runway is unusable." Remarks published through the ADIP indicate the runway is hazardous, not maintained nor recommended for emergency use, unsuitable for all aircraft, and to use the Elliott Highway or an alternate airport for emergency landings.

Airports can be deactivated through a process that begins with filing FAA's Form 7480-1 *Notice for Construction, Alteration and Deactivation of Airports.* In the absence of any agency or organization that will improve the airport to a safe and usable condition, this plan recommends that an airport remarked as unusable, hazardous, or unsuitable even for emergency landings should be deactivated.

4.5 Improving Safety

Improving safety is an umbrella term that includes improved airport infrastructure, improved navigation and weather reporting, improved aircraft operations, improved communication, and various other elements that contribute to safer air travel. Many of these elements are identified and addressed specifically as "Needs" of the IATP aviation system. Overall, improving safety is a goal shared by all entities involved in the development and use of the aviation system.

DOT&PF's *Statewide LRTP (Alaska Moves 2050)* includes Safety as one of its goals – to provide for and continuously improve the transportation system's safety for all users. Safety is a pillar of the FAA's FY22-26 strategic plan (*Flight Plan 21*), and aviation safety in Alaska is addressed specifically in the FAA *Alaska Aviation Safety Initiative FY21 Final Report (FAASI FY21)*. One of the cornerstone goals of the AASP is to develop, operate, and maintain an airport system that contributes to aviation safety and meets user needs. Maintaining the IATP region airports at safe and usable standards and developing the system to improve aviation safety are clear goals that this IATP update shares with other guiding plans.

For the traveling public, the expectation is that they will make it safely from Point A to Point B. As the owner and operator of so much of the infrastructure that supports that travel, the DOT&PF has an obligation to ensure that the expectation of safety is met.

4.6 Infrastructure

Infrastructure recommendations in this IATP update will focus on regionally important needs. Each airport in the IATP region has its own detailed list of needs (compiled and available through the AASP internal web-based facilities database) to meet AASP performance measures and development goals, but there are several key components of airport infrastructure that support systemwide health. The two most regionally important components of infrastructure are runway length (and condition) and runway lighting.

Critical infrastructure and desirable amenities are primarily based on classification and performance measures (current performance measure reports are included in *Appendix 4: AASP Performance Measure Report Cards*). There are airports with desire to grow (Tok, Gulkana, and Nenana, most specifically), but for the most part, airport users generally desire reliably usable, well-maintained airports with services like fuel. The airport users generally enjoy operating as they currently do, and while they have the expectation of safe, reliable facilities, they do not wish for major improvements that might bring additional fees, regulations, or changes to airport use that disrupt their operations.

4.6.1 Runways

Most of the airports in the IATP region have runways of sufficient length to satisfy airport infrastructure performance measures. In other words, most runways are a suitable length to accommodate the aircraft using the airport. There are six airports that still need runway extensions to meet the recommended AASP minimum length for the Community classification. Gulkana's recently approved ALP also recommends runway extension to serve the airport's ultimate role in community planning. Table 54 identifies these airports, current runway length, and target minimum runway length. All of these airports are classified as Community On-Road facilities, the type that rarely scores well for funding when in competition with Alaska's many off-road facilities and often do not have the operations, critical aircraft, or demand to justify runway extensions. Only airports in the AASP Hub and Community classifications have minimum specified runway lengths.

Table 54. IATP Airports Needing Longer Runways to Meet AASP Minimums or High-Interest Community Goals

Airport	ID	AASP Classification	Existing Runway Length (ft)	Target Minimum Runway Length (ft)
Central[1]	CEM	Community On-Road	2,782	3,300
Chistochina	CZO	Community On-Road	2,060	3,300
Circle City[1]	CRC	Community On-Road	2,979	3,300
Delta Junction	D66	Community On-Road	2,500	3,300
Gulkana	GKN	Community On-Road	5,001	6,500
Healy River	HRR	Community On-Road	2,910	3,300
Tok Junction	6K8	Community On-Road	2,509	3,300 (5,000 if developed into regional facility)

[1] Central and Circle City are 33 road miles apart, and both would not ultimately qualify to receive AIP funding for longer runways, but the AASP performance measures do not account for this nuance.

Most of the runway conditions throughout the region are satisfactory – gravel runways in good condition or better and paved runways with a Pavement Condition Index (PCI) of 70 or greater are considered to meet AASP performance measures. Approximately 30 percent of the runways do not meet these marks. Runway surface conditions are a performance metric for Hub, Community, and Local class airports. The airports in need of runway surface improvements are identified in Table 55.

Table 55. IATP Airports Needing Runway Surface Improvements

Airport	ID	AASP Classification	Surface Type	Surface Condition
Arctic Village	ARC	Community Off-Road	Gravel	Poor
Bradley Sky-Ranch	95Z	Local Non-NPIAS	Gravel	Fair
Chalkyitsik[1]	CIK	Community Off-Road	Gravel	Fair
Central	CEM	Community On-Road	Gravel	Poor
Chisana	CZN	Local NPIAS-Low	Gravel	Poor
Chistochina	CZO	Community On-Road	Gravel	Fair
Clear	Z84	Local NPIAS-Low	Paved	PCI 61
Copper Center 2	Z93	Local Non-NPIAS	Gravel	Fair
Gold King Creek	AK7	Local Non-NPIAS	Gravel	Fair
Healy River	HRR	Community On-Road	Paved	PCI 48
McCarthy	15Z	Local NPIAS-Low	Gravel	Fair
Northway	ORT	Community On-Road	Paved	PCI 40
Tok Junction	6K8	Community On-Road	Paved	PCI 34
Wiseman	WSM	Local NPIAS-Low	Gravel	Poor

[1] Chalkyitsik Airport Improvements project will be completed with FFY 2023 and 2024 AIP grant funding and will address the need for improved surface condition at this airport.

4.6.2 Lighting

Runway lighting is a critical airport component that enables safe operations at night and when visibility is reduced by fog, blowing snow, wildfire smoke, or combinations of weather and low light. Airport lighting systems help pilots locate runways and identify where to land, supplementing an aircraft's on-board instrumentation and providing a visual ground reference. Airport lighting is required by medevac aircraft landing at night in response to a medical emergency.

The IATP region experiences all of the conditions that make runway lighting especially significant in providing safe and reliable airport use – darkness during much of the year, low light, smoke, snow, and vast stretches of unmarked or featureless terrain by which to navigate. The runway lighting systems at most of the IATP airports are aged and in poor condition. The skill and dedication of DOT&PF's maintenance crews has kept many of the older systems operational well beyond their expected lifespan, considering the harsh environment and limited funding that cause lighting systems to deteriorate.

The AASP produced the *Rural Airport Lighting* fact sheet in April 2023. This fact sheet reports some of the following life cycle considerations for airport lighting systems:

- The FAA designates 10 years for useful life of airfield lighting – this minimum useful life does not indicate expected system failure at 10 years, rather that lighting system replacement or rehabilitation are not eligible for funding until after 10 years.
- The industry average for replacing airport lighting systems is about 15 years. The length of time that runway systems remain operable varies greatly, depending on the quality of the initial installation, environmental factors, and maintenance practices.
- The average age of DOT&PF rural airport lighting systems in Alaska is about 20 years.

In the IATP region, the average age is closer to 24 years, with a number of systems exceeding 30 years. Without repeating everything that the *Rural Airport Lighting* fact sheet presents, it suffices to state that the IATP region faces all the challenges identified with maintaining, preserving, and repairing airport lighting systems – lack of funding, lack of qualified electricians statewide, lack of experience and appropriate equipment for those maintaining runways, harsh climates, freeze and thaw cycles, erosion, settlement, flooding, and difficulty in procuring reliable power sources.

Despite this overwhelming list of challenges, keeping airport lighting systems operational is of paramount importance. As the fact sheet concludes, "Airport lighting is critical to the mission of reliable transportation and access to goods and services. Without it, medevac pilots cannot reach destinations and remote Alaska becomes increasingly more remote."

The *Rural Airport Lighting* fact sheet was developed following a more comprehensive study and report – the *Lighting Analysis for Rural Airports* (June 2021). A primary conclusion from this report was that DOT&PF had made significant progress in adding new systems and improving airport lighting at rural airports during the preceding 12 years; however, reduced maintenance funding and aging systems are creating new challenges statewide. The consensus was that the airports with the greatest need for lighting systems have been addressed or are programmed for lighting projects in the near term. The task for management is to focus on the aging infrastructure with a programmatic approach to replace systems that have reached, or, in many cases, exceeded their economic lives.

Lighting projects alone do not score well in APEB or with FAA, and mobilizing construction to accomplish standalone lighting work is prohibitively expensive, so lighting is often bundled with other airport work. The 2021 report recommends that any major surface rehabilitation project should include upgrading and replacing associated lighting infrastructure. In 2022, DOT&PF developed a statewide 10-year lighting priority assessment which identifies airports in need of lighting projects, identifies which airports have lighting projects programmed, and prioritizes future airport lighting projects by funding year.

Within the IATP region, there are still three airports in need of new or upgraded lighting systems. Two are completely without lighting systems, and one is recommended to receive a lighting system upgrade to meet its performance measure. Runway lighting is a performance measure for AASP Hub, Community, and Local NPIAS High-Activity airports. Numerous IATP airports have lighting projects detailed in the 2022 statewide 10-year lighting priority assessment. Table 56 details IATP airports recommended to receive new (first-time) lighting systems, airports recommended to receive upgraded lighting systems, airports programmed for lighting replacement/rehab, and airports recommended additionally to receive lighting projects.

Table 56. IATP Airport Lighting Improvements Needed

Airport	ID	Lighting System	Age	Lighting Need & Lighting Priority Assessment Programming
NEW (FIRST-TIME) LIGHTING				
Chistochina	CZO	None	--	AASP recommends Community class airport have MIRL system
Delta Junction	D66	None	--	AASP recommends Community class airport have MIRL system
UPGRADE TO NEW LIGHTING SYSTEM				
Fort Yukon	FYU	MIRL	13	AASP recommends Regional class airport have HIRL system; lighting system failure anticipated within 10 yrs; FY33 target grant funding
LIGHTING SYSTEM PROJECTS PROGRAMMED				
Beaver	WBQ	MIRL	34	Lighting system failing; project programming imminent
Birch Creek	Z91	MIRL	28	Lighting system failure anticipated within 5 yrs; FY26 target grant funding
Chalkyitsik	CIK	MIRL	29	Lighting system failure anticipated within 5 yrs; FY23 project programmed with AIP grant awarded September 2023
Eagle	EAA	MIRL	38	Lighting system failure anticipated within 10 yrs; FY27 target grant funding
Gulkana	GKN	MIRL	38	Lighting system failure anticipated within 10 yrs; FY29 target grant funding
Manley Hot Springs	MLY	MIRL	11	Lighting system failure anticipated within 10 yrs; FY33 target grant funding
Minchumina	MHM	MIRL	34	Lighting system failure anticipated within 10 yrs; FY29 target grant funding
Minto Al Wright	51Z	MIRL	16	Lighting system failure anticipated within 10 yrs; FY32 target grant funding
Nenana Muni	ENN	MIRL	27	Lighting system programmed for replacement in FY23
Northway	ORT	MIRL	15	Lighting system failure anticipated within 10 yrs; FY32 target grant funding
Ralph M Calhoun Meml	TAL	MIRL	18	Lighting system failure anticipated within 10 yrs; FY31 target grant funding
Rampart	RMP	MIRL	22	Lighting system failure anticipated within 10 yrs; FY30 target grant funding
Stevens Village	SVS	MIRL	17	Lighting system failure anticipated within 10 yrs; FY32 target grant funding
Tetlin	3T4	MIRL	19	Lighting system failure anticipated within 10 yrs; FY32 target grant funding
ADDITIONAL LIGHTING PROJECTS RECOMMENDED				
Arctic Village	ARC	MIRL	Unk	Age of lighting system unknown, evaluate condition with local sponsor
Central	CEM	MIRL	30	Consider lighting system project with future runway work; not currently programmed
Circle City	CRC	MIRL	35	Lighting system estimated to be 35 yrs old, not currently programmed for replacement
Clear	Z84	MIRL	24	Lighting system estimated to be 24 yrs old, not currently programmed for replacement
Venetie	VEE	MIRL	20	Lighting system estimated to be 20 yrs old, evaluate condition with local sponsor

4.7 Amenities

Airport amenities include features such as public restrooms, passenger waiting shelters, emergency maintenance shelters, fuel service, and broadband internet connection. The two amenities of greatest regional importance are fuel availability and broadband internet connection. Only six of the airports in the IATP region currently have fuel available for aircraft, and only eight airports currently report having broadband connectivity.

4.7.1 Fuel

The availability of fuel is one of the most desired amenities by pilots using the IATP airports. The AASP performance measures specify fuel availability as a target metric for Hub, Community, and Local NPIAS High-Activity airports. Only six of the 20 airports in these classifications currently have fuel available. DOT&PF is not in the business of providing fuel service, but airport improvement and development plans should include suitable locations for fuel service to be provided by private parties.

4.7.2 Broadband Connectivity

One of the AASP performance measures for Community and Hub airports is broadband connectivity – having broadband available through a local fiber connection. Broadband connectivity would support weather reporting, pilot and airport user communications and access to information, and UAS operations. To meet performance measures, broadband connectivity is needed at 10 of the 17 Community airports and at the single Regional Hub airport in the IATP region.

Federal funding was announced in June 2023 to expand high-speed internet access nationwide, with funding distributed over the coming two years. States will be tasked with determining where and how to deploy new high-speed internet. The State of Alaska Governor's Task Force on Broadband released a report in November 2021 that sets forth state goals and actions to expand broadband connectivity in Alaska. Although the AASP performance measure reporting indicates that seven airports have broadband connectivity, the 2021 Broadband report indicates that several of these communities are "unserved" by broadband, which means that these locations either do not have internet connectivity or the internet connectivity has download/upload speeds unsuitable for real-time applications.

This plan recommends that DOT&PF be engaged in the process for implementing high-speed internet access and identify ways to connect airports currently not connected or unserved by broadband service. Additional information on the status and plans for community broadband connectivity is best referenced in the November 2021 *State of Alaska Governor's Task Force on Broadband Final Report*. *Appendix 7: Broadband Connectivity at IATP Airports* includes the list of IATP airports and their broadband status according to the AASP performance measures and according to the 2021 task force report.

4.8 Airspace & Navigation

The FY21 *FAA Alaska Aviation Safety Initiative* includes goals of increasing weather reporting at airports and en route, installation of additional weather cameras, more AWOS coverage, and development of new IAPs. The DOT&PF Statewide LRTP recommends continued support of AWOS and IAPs and continued support of airspace protection and management. DOT&PF is most often *not* the agency responsible for development and management of airspace, navigational aids, weather systems, or instrument approaches, but DOT&PF is deeply involved in planning for all of these components and is often a leading source in identifying locations where issues exist and improvements to airspace and navigation are needed.

4.8.1 Airspace

Military aviation is and will remain a major user of airspace in the IATP area. The number and frequency of military exercises is anticipated to increase, and military operations areas with periodic and permanent restrictions are growing with the multitude of exercises. The two largest exercises, Red Flag and Northern Edge, require over 60,000 square miles of special use airspace when they are active. Northern Edge, which has previously been an exercise conducted every two years, is going to be an annual event.

Clear Space Force Station (Clear SFS), known as Clear Air Force Station until it was renamed in 2021, is a radar station in the community of Clear/Anderson. This station serves to provide missile warning, missile defense, and space domain awareness. A Long-Range Discrimination Radar (LRDR) was installed in late 2021 at Clear SFS, and restricted area airspace over the Clear SFS was modified to provide the protective airspace needed for this system. Airspace restrictions were determined necessary to ensure that aircraft do not encounter high-intensity radiated fields (HIRF) resulting from the LRDR operations that exceed FAA's HIRF certification standards for aircraft electrical and electronic systems. The LRDR is currently in an integration and test phase, and the military is determining the actual HIRF resulting from LRDR operations. It is possible that their determinations may result in additional proposed changes to or expansion of restricted airspace around the Clear SFS in the future.

No other current airspace issues were identified by this evaluation. This plan recommends that DOT&PF, the Alaska Airmen's Association, the Aircraft Owners and Pilots Association (AOPA), and other affected stakeholders remain engaged with the Alaska Civil-Military Aviation Council (ACMAC) as changes to airspace are proposed. These groups have effectively worked with the military on previous occasions to define airspace areas and use that serve both military and civilian needs. Echoing a sentiment from the *2010 IATP*, DOT&PF needs to be diligent in identifying military airspace impacts on the civilian population and economy and participating in ACMAC efforts to find workable compromises.

4.8.2 Instrument Approach Procedures

New and improved instrument approach procedures (IAPs) improve flight safety, and they are a key initiative from the *FAA Alaska Aviation Safety Initiative FY21 Final Report (FAASI FY21)*. Per the report, the FAA plans to publish Wide Area Augmentation System (WAAS) approaches to every qualified runway end in the national airspace. FAA is also considering modifying the design criteria for these approaches to allow more runways to qualify.

Some key acronyms used in the language regarding IAPs include:

- WAAS – Wide Area Augmentation System: an air navigation aid developed by the FAA to augment the GPS with the goal of improving its accuracy, integrity, and availability to enable aircraft to rely on GPS for all phases of flight, including approaches to airports within its coverage area.
- LPV – Localizer Performance with Vertical Guidance: an instrument approach that provides both course and glidepath information; the highest precision GPS/WAAS-enabled aviation instrument approach procedures currently available without specialized training requirements.
- RNAV – Area Navigation: a form of navigation that uses satellites and onboard computers to project a lateral path to help aircraft navigate from point to point without the use of ground-based navigational aids.

Seventeen of the airports in the IATP area have published IAPs. Another three airports have special IAPs, which are not published. These special procedures may be available to certain carriers only or may be in proof-of-concept phase, which means they may not satisfy the general need for an IAP to a given airport. Table 57 lists airports in the IATP region with IAPs, airports without IAPs that have previously been recommended to received them, and the support infrastructure available at each airport.

Table 57. Instrument Approach Procedures (IAPs) at IATP Airports

Airport	ID	IAP	Weather Source	Weather Camera	Remarks
AIRPORTS WITH PUBLISHED IAPS AND WEATHER REPORTING					
Arctic Village	ARC	RNAV	AWOS	Yes	
Coldfoot	CXF	RNAV	AWOS	Yes	
Eagle	EAA	RNAV	ASOS	Yes	
Fairbanks International	FAI	ILS, RNAV, VOR, or TACAN	ASOS	Yes	
Fort Yukon	FYU	RNAV	AWOS	Yes	*2010 IATP* recommended improvement to ¾ mile min.
Gulkana	GKN	RNAV, VOR	ASOS	Yes	*2010 IATP* recommended improvement to ¾ mile min.
Minchumina	MHM	RNAV, NDB	AWOS	Yes	
Nenana Muni	ENN	RNAV, NDB	ASOS	Yes	Aeronautical survey conducted in 2021 in support of LPV approach development
Northway	ORT	RNAV, VOR/DME	ASOS	Yes	
Ralph M Calhoun Meml	TAL	RNAV, VOR/DME	ASOS	Yes	
Tok Junction	6K8	RNAV	AWOS	Yes	*2010 IATP* recommended improved IAP
AIRPORTS WITH PUBLISHED IAPS BUT LACKING WEATHER REPORTING					
Beaver	WBQ	RNAV	NONE	Yes	Lacks weather reporting
Central	CEM	RNAV	NONE	Yes	Lacks weather reporting
Chalkyitsik	CIK	RNAV	NONE	Yes	Lacks weather reporting
Healy River	HRR	RNAV	NONE	No	Lacks weather reporting, weather camera
Manley Hot Springs	MLY	RNAV	NONE	No	Lacks weather reporting, weather camera
Venetie	VEE	RNAV	NONE	No	Lacks weather reporting, weather camera
AIRPORTS WITHOUT IAPS, RECOMMENDED BY *2010 IATP* TO HAVE IAPS DEVELOPED					
Birch Creek	Z91	--	NONE	No	
Circle City	CRC	--	NONE	No	
McCarthy	15Z	Special Only	NONE	No	Proof-of-concept phase
Stevens Village	SVS	--	NONE	No	
Tetlin	3T4	--	NONE	No	WAAS survey conducted
AIRPORTS WITH SPECIAL APPROACH PROCEDURES ONLY					
Prospect Creek	PPC	Special Only	NONE	No	
Rampart	RMP	Special Only	NONE	No	Proof-of-concept phase

According to a Senior Aeronautical Specialist with the Air Traffic Organization, the FAA has no current plans to develop new instrument approach procedures at any of the VFR airports in the IATP region. The DOT&PF Division of Statewide Aviation, at one time, maintained a list of airports at which new or improved approach procedures were desired. This list is no longer maintained or available, but the AASP will undertake a special study of IAPs statewide in an upcoming phase of the plan. This plan recommends that airports in Table 57 without IAPs and with recommendations to receive improved IAPs be considered specifically by the AASP work. The AIP history for Tetlin indicated a WAAS survey was conducted in 2013. It is unclear why this airport did not have an IAP developed after the survey was complete, and it is worth investigating whether the survey determined the airport is unsuitable for an RNAV approach or whether approach development has not yet been requested.

Several of the airports in the above table have IAPs but lack weather reporting sources. Efforts to get weather reporting systems at airports currently without should also continue in earnest. The combination of an on-field certified weather station and a published instrument approach procedure at an airport greatly enhances access to the community the airport serves. The 2017 AASP *Alaska Weather Equipment Needs Summary* indicated that Beaver, Central, and Venetie were high priority sites for AWOS installations. This report additionally named Chalkyitsik, Circle City, Healy River, Manley Hot Springs, and McCarthy as airports that surveyed stakeholders identified as locations where weather reporting was desired. Weather reporting needs for the IATP region are discussed in greater detail in a later section of this report.

4.8.3 Navigational Aids (NAVAIDs)

The nationwide trend for Navigational Aids (NAVAIDs) is the phasing out of ground-based infrastructure and the development and improvement of GPS-enabled navigation. Alaska is seeing the improvements in GPS-enabled navigation, but the ground-based NAVAIDs remain critical in many areas of the state.

The Very High Frequency Omni-directional Range (VOR) network still persists in AK – FAA has excluded Alaska from current efforts to reduce the overall footprint of the VOR network elsewhere and has made it a priority to sustain the VOR infrastructure in Alaska. This is an effort to address the lack of back-up navigation system to address GPS outages, including when the Department of Defense GPS Testing exercises are underway. Fort Yukon is one of the locations at which VOR projects were scheduled to be complete before CY 2022. Several other airports in the IATP region still have VORs – Fairbanks International, Gulkana, Nenana, Northway, and Ralph M Calhoun Meml (Tanana).

Non-directional beacons (NDBs) are radio transmitters used as a navigational aid that transmit non-directional signals whereby the pilot of a properly equipped aircraft can determine bearings and “home” to the station. These NAVAIDs are being phased out. Per a Senior Aeronautical Specialist with the FAA’s Air Traffic Organization, NDBs co-located with VORs – as well as a few non co-located ones – are being decommissioned. The FAA’s plan was to have NDBs phased out by 2030, but that timeline may be extended. The NDB for Chandalar Lake (WCR) is one with an expected decommissioning date in 2025. Additionally, the FAA will probably continue to pursue cancelling NDB approaches if RNAV approaches are published providing IFR services at those locations.

There is strong demand for en route navigational aids. *FY21 FAASI* stakeholders commented on the need for continued development of terminal transition routes (T-routes) for GPS/WAAS-equipped aircraft and alternative procedures where communication capabilities are unavailable along some parts of a route. Airways that use ground-based Non-Directional Beacon (NDB) NAVAIDs are no longer sustainable in Alaska (per *FAASI*). These airways have provided air taxi and GA operators the routes needed to support over 80 percent of the communities throughout Alaska for decades. The low minimum en route altitudes (MEAs) established on such airways are critical to ensure the safest and most efficient way of transporting people and cargo throughout Alaska. With NDBs being decommissioned, a new and safe airway structure is needed to support Alaska aviation. The T-route structure is expected to be a long-term solution to this challenge. T-routes are not limited by ground-based equipment. These routes provide GPS mapping safely around terrain and can be flown on Instrument Flight Rules (IFR) through clouds to avoid aircraft icing.

As a result of the *FY21 FAASI* recommendations, the FAA began action on publishing 54 T-Routes (30 new and 24 amended routes) (*Figure 18*). The FAA currently reports through the FAASI website (https://www.faa.gov/alaska) that it has published all of the 54 planned T-routes in Alaska. The FAA is planning to develop additional T-routes to replace airways that rely on ground-based NAVAIDs through 2025.

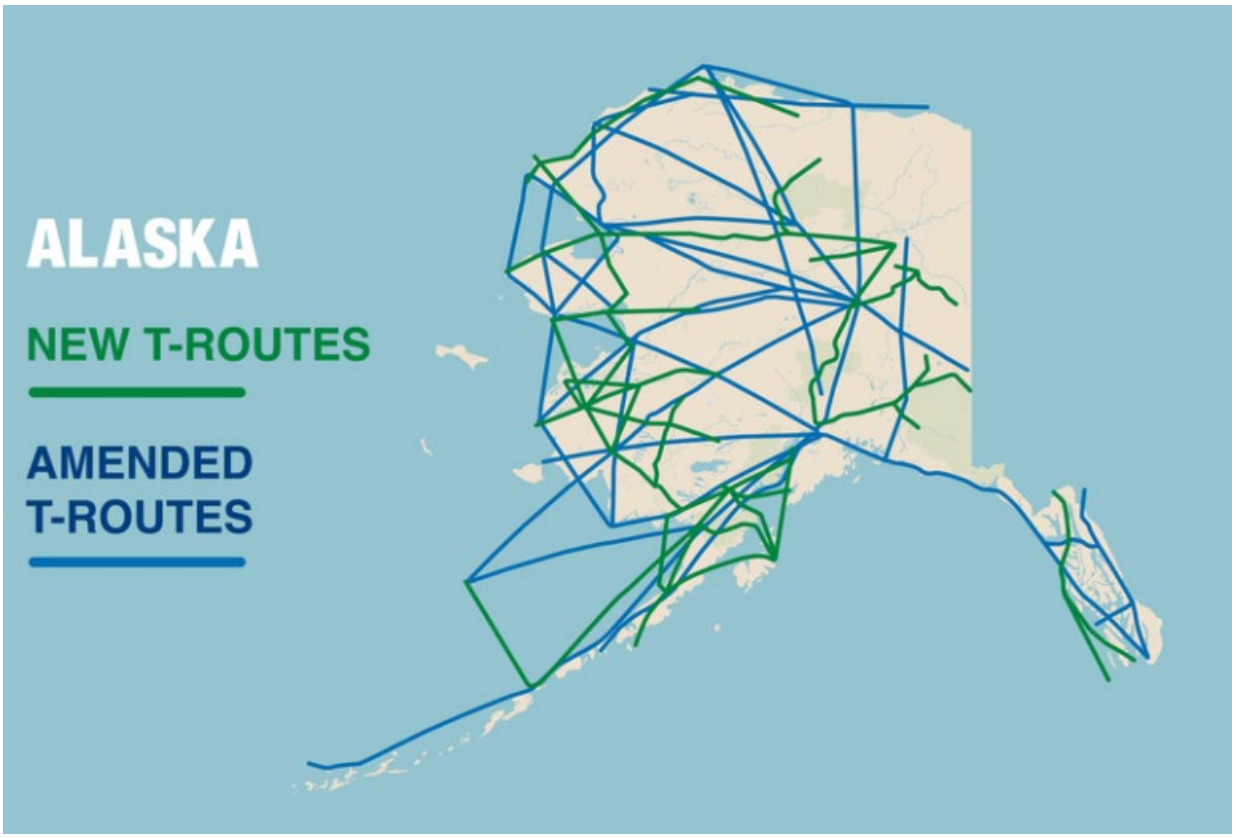


Figure 18. Alaska T-Routes (Source: FAA, https://www.faa.gov/alaska)

4.9 Weather Reporting & Communication

Weather observations are critical to aviation safety and to pilots flying both VFR and IFR. Pilots must check current and forecast weather prior to every flight to make go/no-go decisions and continually monitor updated weather information en route to determine if continued flight to the intended destination is possible. Improved and expanded aviation weather reporting is one of the most significant elements that has improved aviation safety and can continue to improve safety.

A strong and consistent theme through the plans conducted recently by DOT&PF and the FAA is the need for continued improvements in weather reporting and communication. This IATP update echoes and reinforces the DOT&PF and FAA goals regarding weather reporting improvements, as they are just as critical for the IATP region as they are statewide. Expansion of additional weather systems and supporting infrastructure will increase safety, efficiency, and access to numerous locations statewide.

DOT&PF's *Alaska Moves 2050 Long-Range Transportation Plan* identified improved weather reporting as a statewide goal. From the plan:

Key Opportunity:	Continue to support installation of automated weather stations and certified instrument approach procedures to provide access to rural airports during poor weather conditions. Combined, these two efforts will increase the safe and efficient movement of goods and people in rural communities.
Action:	Continue to promote the Federal Aviation Administration (FAA) program to add/upgrade weather reporting, navigation, and communication equipment at rural airports.
Performance Measure:	Increased number of rural airports with weather reporting, navigation, and communication equipment.

Additionally, the FAA *Alaska Safety Initiative Report* stresses the need for reliable weather reporting/forecasts due to the state's terrain and high latitude weather. Most rural airports do not have weather observation systems, and the weather observation systems in existence are often spaced great distances from each other. The sparsity of weather reporting inhibits operations at the airports and inhibits the weather forecasting that supports flight planning and en route flight navigation. In partnership with reliable and adequate coverage of weather reporting, there is a need for the associated communications infrastructure which supports both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) operations.

4.9.1 AWOS / ASOS

The primary source of aviation surface weather observations is from automated weather stations - Automated Weather Observing System (AWOS) and Automated Surface Observing System (ASOS) stations. AWOS and ASOS stations contain a suite of sensors that measure ceiling, visibility, wind, temperature, pressure, and other meteorological elements. The stations operate 24 hours a day, issuing reports via locally broadcast radio transmission, as well as by phone and computer network, to a national distribution system operated by the FAA. These automated weather stations are certified by the FAA and must meet specific siting requirements and maintenance standards. According to FAA's Surface Weather Observation Stations, last updated February 8, 2023, there are currently 137 certified automated weather stations in Alaska (https://www.faa.gov/air_traffic/weather/asos/?state=AK).

Weather information from ASOS and AWOS units is "approved" or "legal" weather data. Both types of systems provide the type of weather information necessary for pilots to make go/no go and en route flight planning decisions, and pilots must use the information from these stations when conducting instrument approach landings at airports. A few distinctions exist between the AWOS and ASOS stations in the type of data collected and how often the data is reported. An AWOS measures the combined barometric pressure, wind speed and gusts, wind direction, temperature and dew point, visibility, sky condition, runway-surface condition, and other parameters, depending on which instrument sensors are present. Weather reports are generally reported in 20-minute intervals, and the weather data are disseminated via a computer-generated voice message and broadcast over radio in the airport vicinity. The FAA Tech Ops is responsible for status monitoring, NOTAM issuances, maintenance, and restoration of all AWOS systems in Alaska.

An ASOS unit reports at hourly intervals, but ASOS stations also report special observations if weather conditions change rapidly and cross aviation operation thresholds. ASOS stations almost always have a basic level comparable to AWOS-III – which means that they can tell barometric pressure, wind speed and direction, density altitude, visibility, sky condition, ceiling height, and precipitation – and they have the additional capabilities of reporting temperature and dew point, present weather, icing, lightning, sea level pressure, and precipitation accumulation. ASOS stations are mostly operated and controlled by the National Weather Service (NWS), Department of Defense (DoD), and sometimes the FAA. The ASOS program was a joint effort between the FAA, the NWS, and the DoD to deploy a network of high-grade weather monitoring stations across the U.S. ASOS units were installed across Alaska between 1994 and 2004. The ASOS development program no longer exists, and no new ASOS units are currently planned. ASOS sensors were 100 percent paid for by the federal agencies that installed them, and they are maintained by those same agencies today. The NWS is responsible for all ASOS systems in Alaska, although FAA Tech Ops supports the modem and telecommunications lines that connect these units to the FAA weather database via the internet.

There are both AWOS and ASOS weather reporting units in the IATP region. Several of the IATP region's AWOS/ASOS units are reported out of service (as of December 2023). The AWOS at Fort Yukon has been out of service since flooding earlier in 2023. Although the IATP region's weather reporting systems avoided the massive damage caused by Typhoon Merbok (September 2022) that rendered dozens of AWOS/ASOS out of service in the western portion of the state, the sheer number of sites statewide that are in need of repair has affected FAA's ability to repair the systems statewide and has impacted plans to fully certify and install new systems.

Alaska has significantly less weather reporting coverage than the contiguous United States. The FAA Surface Weather Observation Stations database lists 137 weather reporting stations (AWOS or ASOS) in Alaska, compared to approximately 2,300 in the contiguous 48 states. To achieve the density of weather reporting stations in the continental U.S., Alaska would need approximately 350 *additional* weather stations throughout the state. *Figure 19* shows the locations of automated weather reporting stations statewide, and it can be seen in the figure that the IATP region has less weather reporting coverage than much of the state. The density of AWOS/ASOS stations of the IATP region is half that as the rest of Alaska (averaged).

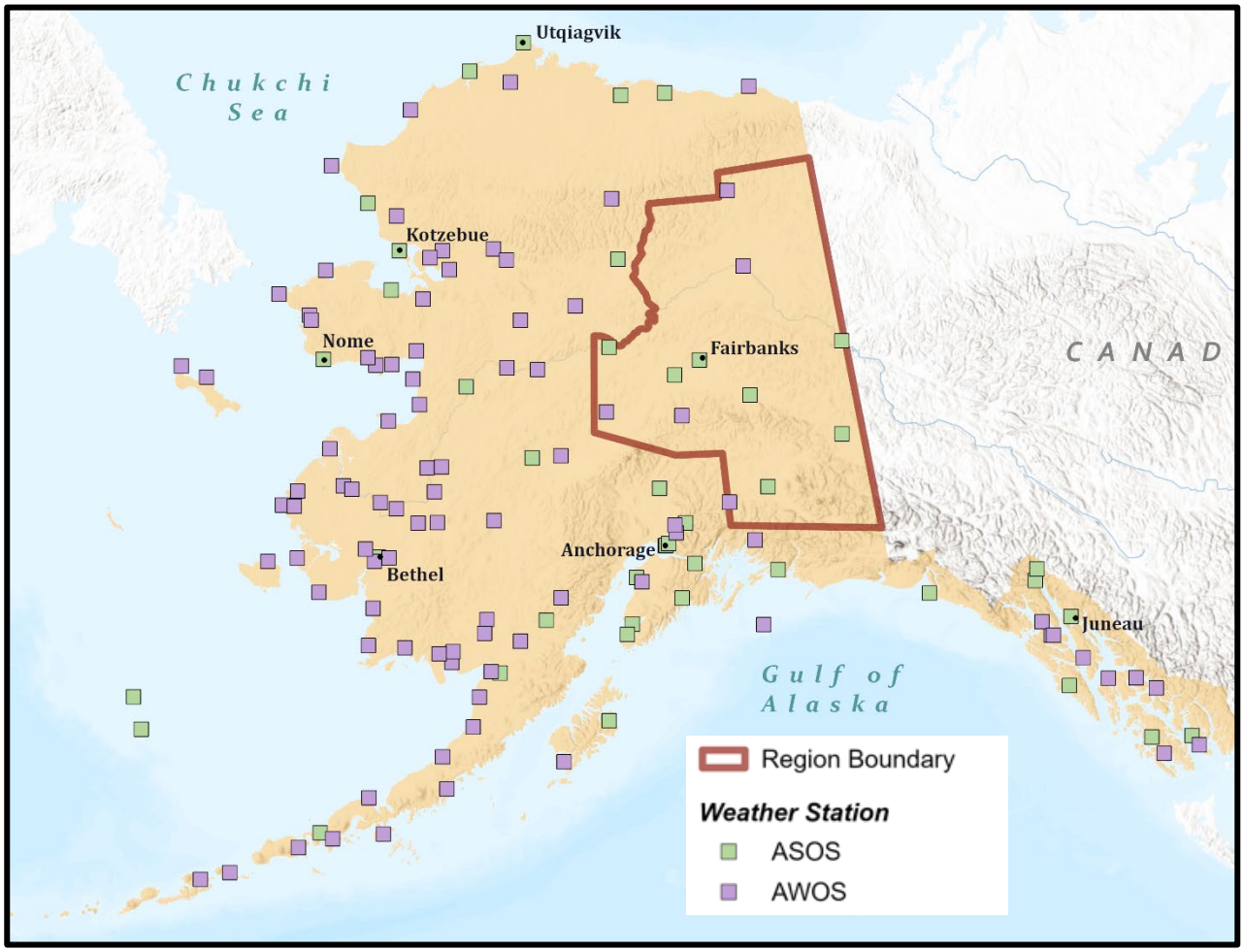


Figure 19. Alaska Locations of Automated Weather Reporting Stations

One of the primary focuses of the *FAASI FY21* report is "the requirement for additional and enhanced weather reporting capability via ground-based systems such as AWOS and VWOS." The report recommends the FAA continue focusing on new-installation AWOS units (at airport sponsor request) and optimizing the transfer process and timeline. The *FAASI FY21* Final Report details how valuable and necessary the AWOS stations are to flight planning. More AWOS coverage is desired, and stakeholders would like to see a more reliably operational system of weather reporting – the maintenance and timely repair of broken systems is critical to flight planning and safety.

According to the Statewide Aviation System Planner, the total cost to design, purchase, and install a basic AWOS unit in remote Alaska is estimated at $2 million. Eight systems statewide were purchased and installed in 2022, with complete certification and ownership transferal to the FAA anticipated by Sep/Oct 2022 (FAA's FAASI website now specifies 2023). The FAA no longer procures and installs systems, but language in the 2018 FAA Reauthorization Act provided the ability for airport sponsors to purchase and install AWOS units and for the FAA to assume ownership and maintenance of the systems once installed. As of the writing of this report (December 2023), the certification and ownership transfer has been formally completed for at least four of the eight AWOS systems (those in DOT&PF's Northern Region). DOT&PF will consider

purchasing and installing additional units once the initial eight have successfully made it through the full process. Additionally, DOT&PF is awaiting final language in the upcoming FAA reauthorization bill that continues support for the program allowing the State to turn over AWOS units to the FAA after purchase and installation. FAA's reauthorization was originally anticipated in October 2023, but at the time this report was developed, the FAA's authorities had been extended through December 31, 2023 as part of a continuing resolution to fund the federal government.

This plan recommends continuing to support the FAA AWOS/ASOS program by identifying airports in need of new systems, supporting the work of repairing systems, and continuing to make use of the program which allows DOT&PF to install systems then turn them over to the FAA for maintenance. The 2017 Alaska Weather Equipment Needs Summary identified and prioritized airports in need of weather reporting. The highest priority for new weather station development was assigned to the airports that had FAA approved instrument approaches but no certified on-site weather station. Airports in the IATP region identified as the highest priority were Beaver, Central, Coldfoot, Tok Junction, and Venetie. Since that time, Coldfoot and Tok Junction have had AWOS-3PT units installed. The other three sites remain in need of weather stations.

Additionally, pilots and air carriers were provided surveys in 2016 as part of the weather needs study, and from the responses, several other airports were named as places at which weather reporting would be especially valuable. In the IATP region, airports named in the open-ended request to "List the top 5 airports in order of priority (airports that were not included in the list of airports with IAPs but no weather reporting) where you would like to see a weather station installed" were McCarthy, Healy River, Cantwell, Manley Hot Springs, Circle City, and Chalkyitsik. If IAPs are developed for Birch Creek, Stevens Village, and Tetlin, these airports would also require weather reporting. Table 58 identifies locations of 14 existing aviation weather reporting systems in the IATP region and 12 locations at which weather reporting stations are desired. *Figure 20* shows the weather station coverage with existing locations (on the left) compared with the possible weather station coverage if all additional 12 locations received AWOS units (on the right). Installing the additional units would fill in several of the "blank spaces" on the map, improving flight safety within the region.

Table 58. Aviation Weather Reporting Systems in IATP Region

EXISTING LOCATIONS	REQUESTED LOCATIONS
Allen AAF – ASOS	Beaver
Arctic Village – AWOS	Birch Creek
Coldfoot - AWOS	Cantwell
Eagle - ASOS	Central
Fairbanks – ASOS	Chalkyitsik
Fort Yukon - AWOS	Circle City
Gulkana - ASOS	Healy River
McKinley Ntl Park – AWOS	Manley Hot Springs
Minchumina - AWOS	McCarthy
Nenana Muni – ASOS	Stevens Village
Northway – ASOS	Tetlin
Ralph M Calhoun Meml - ASOS	Venetie
Tok Junction - AWOS	
Eureka (near privately owned, private-use airport Skelton airport (3AK1)) -AWOS	

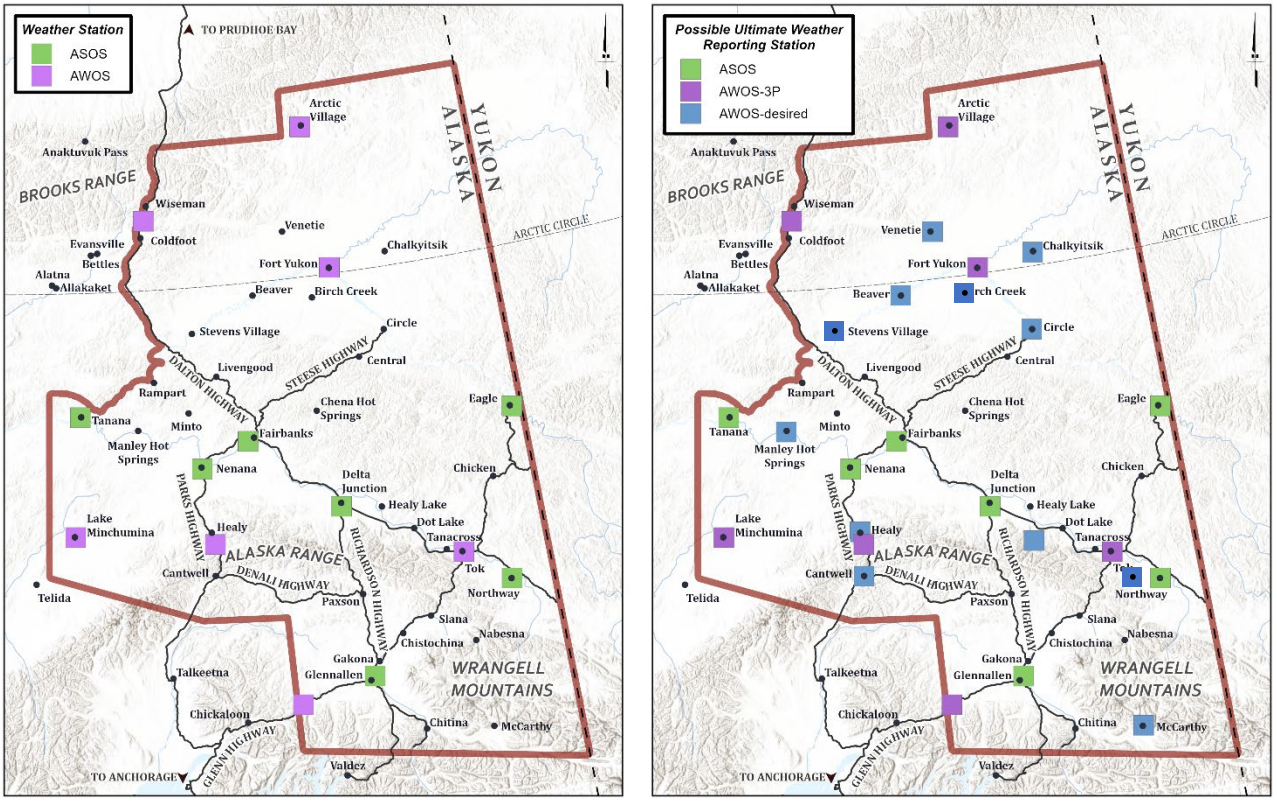


Figure 20. Existing and Proposed Weather Station Coverage in IATP Region

4.9.2 Weather Cameras

The FAA owns and operates a network of internet linked cameras across Alaska. At each location, between two and four cameras record views in different directions once every ten minutes. These images are then uploaded and made available over the internet. Many are at locations near existing AWOS or ASOS stations, allowing a fuller characterization of the weather at a given location. The weather camera program's network provides benefits in aviation access, safety, and efficiency. They exist to improve pilot situational awareness and flight decision-making, resulting in the reduction of weather-related aviation accidents and flight interruptions.

Weather cameras alone do not allow operators to conduct IFR flights. They provide "advisory' as opposed to "approved" weather information. While they provide very valuable flight planning information at a low cost, they do not act as a reliable enough mechanism to gauge ceilings and visibility, which would be necessary to be used as a legal/approved weather reporting source. Weather cameras also only provide weather information during daylight hours. Regardless of their limitations, a stakeholder quoted in *FAASI FY21* described the Weather Camera Program as "one of the best things FAA has done." There is considerable support and demand for additional weather camera installations and increasing information provided plus access to information by airmen while in flight.

When the *2010 IATP* was published, only eight facilities in the IATP area had weather cameras. The 5010 records reflect that 23 facilities currently have weather cameras (*Figure 21*). Another seven facilities have weather cameras nearby, according to the FAA weather camera website, and these camera locations deserve to be evaluated for whether they should be remarked as weather information sources.

The *2010 IATP* identified 14 locations scheduled to receive weather cameras and identified an additional seven locations at which weather cameras were recommended. Of the 14 locations listed in the *2010 IATP* that were scheduled to receive weather cameras (Nenana, Delta Junction Airport, Mentasta, Murphy Dome, Tok, Beaver, Gulkana, Livengood, Manley Hot Springs, Tazlina, Central, Chalkyitsik, Chistochina Airport, and Prospect Creek), only two of those locations remain without. Manley Hot Springs and Prospect Creek still need weather cameras. The weather camera proposed for Murphy Dome appears to have ultimately been installed at Esther Dome, nearer to Fairbanks. Of the seven additionally recommended locations (Birch Creek, Circle City, McCarthy, Minto, Stevens Village, Tetlin, and Venetie), only Minto *has* had a weather camera installed since the 2010 plan.

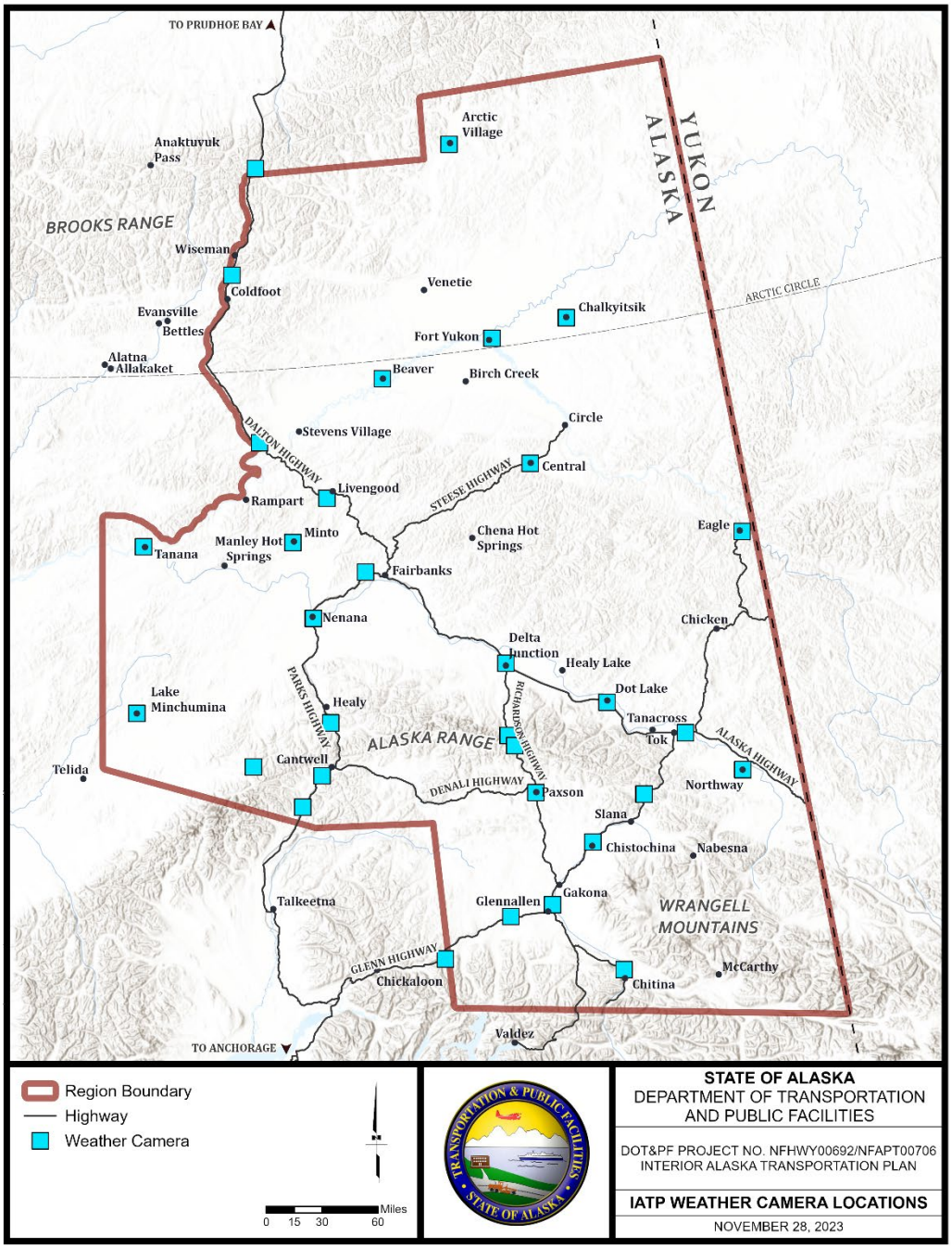


Figure 21. IATP Weather Camera Locations

At the time the *FAASI FY21* report was published, the Weather Camera Program was conducting a business case analysis, expected to be completed in early FY23, to fund up to 160 new camera facilities at locations throughout Alaska. Since that time, funding expectations have decreased dramatically, and the current (June 2023) plan is for the installation of up to 160 new camera facilities at locations across the Continental U.S. and Alaska. A list of the Alaska sites included in the weather camera expansion was provided on request for this study by FAA's Weather Camera Program Implementation Lead. Of the twenty sites on the expansion list, two fall within the IATP area – both located near Eielson Air Force Base. Implementation of the new sites is anticipated to roll out over seven years, beginning in September 2023.

This plan advocates for continuing to identify the airports and air route sites in need of weather cameras and working on a continuing basis with the FAA Weather Camera Program to get them installed. The list of Alaska sites included in the expansion does not include any of the airports already identified as needing cameras in the IATP region. Further coordination is needed to secure weather camera installation at Manley Hot Springs, Prospect Creek, Birch Creek, Circle City, McCarthy, Stevens Village, Tetlin, and Venetie.

4.9.3 Visual Weather Observation System (VWOS)

The FAA Weather Camera Program has conducted analysis of its new Visual Weather Observation System (VWOS) – an advanced low-cost, advisory weather station that combines 360-degree camera images with quality weather sensors to provide pilots and users with both visual and textual weather observations. The system provides winds, temperatures, ceiling, visibility, pressure, cloud, and other important weather information necessary to support aviation operations. The system has undergone over a year of testing and analysis at four Alaska airports, one of which (Healy River) is in the IATP region. According to the FAA Weather Camera Program manager, the VWOS systems have proven to be viable weather sources, providing accurate weather information. The next steps for this system involve the FAA seeking funding for the investment analysis – the phase in which the VWOS system undergoes the FAA process to become an approved weather source and in which FAA pursues funding for development and installation of additional systems. The earliest FAA expects to receive such funding is FY25. VWOS units may be a viable and less expensive alternative to AWOS systems in the future.

4.9.4 Remote Automated Weather Stations (RAWS)

There is a considerable network of Remote Automatic Weather Stations (RAWS) in Alaska (*Figure 2*2). RAWS are self-contained, battery and solar powered weather stations that provide timely local weather data used primarily in fire management. The type of data collected includes relative humidity, wind speed, wind direction, air temperature, and fuel moisture. RAWS stations lack measurements for ceiling and visibility. These stations monitor the weather and provide weather data that assists land management agencies with a variety of functions such as monitoring air quality, rating fire danger, and providing information for research applications. RAWS units collect, store, and forward data to a computer system at the National Interagency Fire Center (NIFC) in Boise, ID. These stations are typically affiliated with the USFS or the BLM, monitored by the NIFC, and data is shared with several other weather agencies. These weather stations are not FAA certified and are not connected to the FAA weather network. They are considered only an advisory weather source. Some weather information is better than none, but RAWS do not provide the critical ceiling and visibility data that pilots need for flight operations. However, allowing the information generated by RAWS to be easily available to pilots would enhance safety, particularly considering the density of these units in the IATP region, which is underserved by approved/legal weather reporting systems.

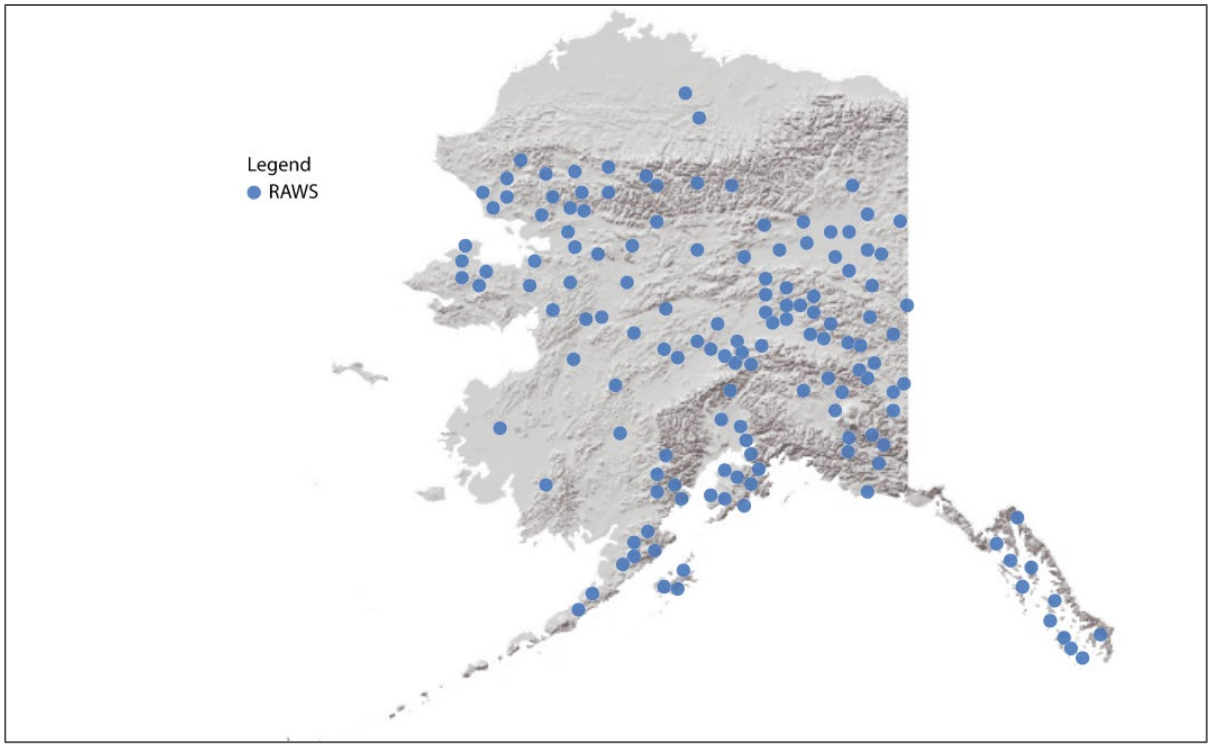


Figure 22. Remote Automatic Weather Stations. Source: 2016 AASP Weather Fact Sheet

4.9.5 Communications Infrastructure

Reliable, operative surface communications are an essential component of the weather reporting function. Weather reporting stations cannot be used for preflight planning or forecasting if the surface communication link is not operating. Automated weather systems must be connected to a reliable power source, and two lines of reliable data connectivity (phone or internet) are also required for connection of the units to the FAA weather network.

This is one primary reason why broadband connectivity is an important metric for the IATP region's airports. Broadband connectivity would help ensure that surface communications infrastructure is robust and able to support real-time weather reporting and pilot/flight service communications and data transmission. This reinforces the earlier recommendation that DOT&PF be engaged in the process for implementing high-speed internet access and identify ways to connect airports currently not connected or unserved by broadband service.

4.9.6 Flight Service Two-Way Texting Service

FAA's Flight Service Two-Way Texting Service is a service offered to pilots to improve communications between pilots and FSS. The goal of the service is to make it possible for pilots to fly to remote locations and close out flight plans, activate flight plans prior to remote departure, amend flight plans, and activate emergency/search-and-rescue response. Pilots enroll for this service through Alaska FSS.

Many of the communication options are initiated by the pilot – the pilot can send flight plan information and intentionally activate emergency response, if needed. The two-way texting system offers *additional* emergency response capability by establishing a regular communications check-in with the pilot, and if the check-in goes unanswered, emergency response can be launched. The concept is that text messages are sent to a pilot's cell phone or satellite-based device at a pre-set regularity (every five or ten minutes), and if contact is lost (i.e., the pilot does not respond), search and rescue is launched, and the search effort knows precisely where to look using the device's location.

The DOT&PF has no authority or influence over this two-way texting service, but it can promote the service through the AASP website, through newsletters, and through involvement with aviation stakeholders, and through communications shared at airports across the state.

4.9.7 Enhanced Special Reporting Service (eSRS)

Another communication service offered by FSS is the enhanced Special Reporting Service (eSRS), which is a satellite assisted flight plan tracking service. Similar to two-way texting, the service provides registered pilots with a means to communicate with Flight Service and enable them to activate, close, or amend their flight plans. Aircraft equipped with certain models of satellite/GPS tracking devices can transmit tracking or alert information to FSS. The concept is to be able to launch Search and Rescue at the earliest possible opportunity when it is believed that an aircraft is in distress. Quoted from the eSRS brochure, "Rapid responses save lives!"

The difference between the eSRS and two-way texting services are primarily in the types of devices compatible with each service. As with the two-way texting service, the DOT&PF has no authority in the program, but it can share program information with stakeholders and promote pilot enrollment.

4.10 Bypass Mail Program

The United States Postal Service (USPS) is required by law to perform its mail delivery mission of "providing universal service at universal rates" to all persons in the United States. In order to meet its mission to deliver mail to all persons in Alaska, the USPS must use air transportation to deliver mail to many of the communities statewide. Bypass mail is a type of mail that falls within the non-priority mail category. Customers pay a non-priority shipping rate, and the items - which would typically (elsewhere in the U.S.) be transported and delivered by ground service – are delivered by air because that is the only way to reach many communities. The non-priority mail rate is significantly lower than the air delivery rate, and it is much less expensive than air freight rates.

Several airports in the IATP region receive mail service by air under the USPS Bypass Mail program. This program is critical to providing fresh food and basic supplies to communities that could not otherwise afford to receive these goods if they were transported at the much higher air freight rates. Fairbanks and Fort Yukon are listed in *Appendix A* of the *USPS Handbook PO-508* (March 2012) as "hub points." Table 59 presents IATP communities designated as "bush points" served out of each hub.

Table 59. IATP Mail Hub & Bush Points

Fairbanks		Fort Yukon (off)	
Beaver (off)	Stevens Village (off)	Arctic Village (off)	Venetie (off)
Eagle (on)	Tanana (off)	Chalkyitsik (off)	

(off) indicates that the community lies off the road system | (on) indicates that the community lies on the road system.

One of the actions specified by the 2022 DOT&PF *Statewide LRTP* is to "monitor and take all available actions for the continuation of the U.S. Postal Service Bypass Mail program." Victoria O-Hara, the USPS Network Analyst, reported to the Aviation Advisory Board (AAB) in May 2021 that the USPS 10-year plan included no mention of Alaska's bypass mail program, and no changes to the program are anticipated in the near term. This plan recommends the continued monitoring of the Bypass Mail program and continued communications with USPS officials to ensure the Alaska's rural communities are adequately considered by USPS actions.

4.11 Wildland Firefighting Support

Wildland firefighting relies heavily on aircraft support in Alaska. Responsibilities for wildland firefighting are coordinated among the Bureau of Land Management Alaska Fire Service (BLM AFS), State of Alaska Department of Natural Resources Division of Forestry and Fire Protection (DOF), and the U.S. Forest Service (USFS). BLM AFS and DOF are the agencies primarily operating in the IATP region. Each of these agencies depends on airports and landing strips to access fire locations and provide fire protection and suppressions services to communities statewide. The interior region of the state is especially prone to wildfires, as can be seen by the orange shading in *Figure 23.* This area also has limited road connections to areas off the major highways, making aircraft an even more significant component of the wildfire management and response efforts.

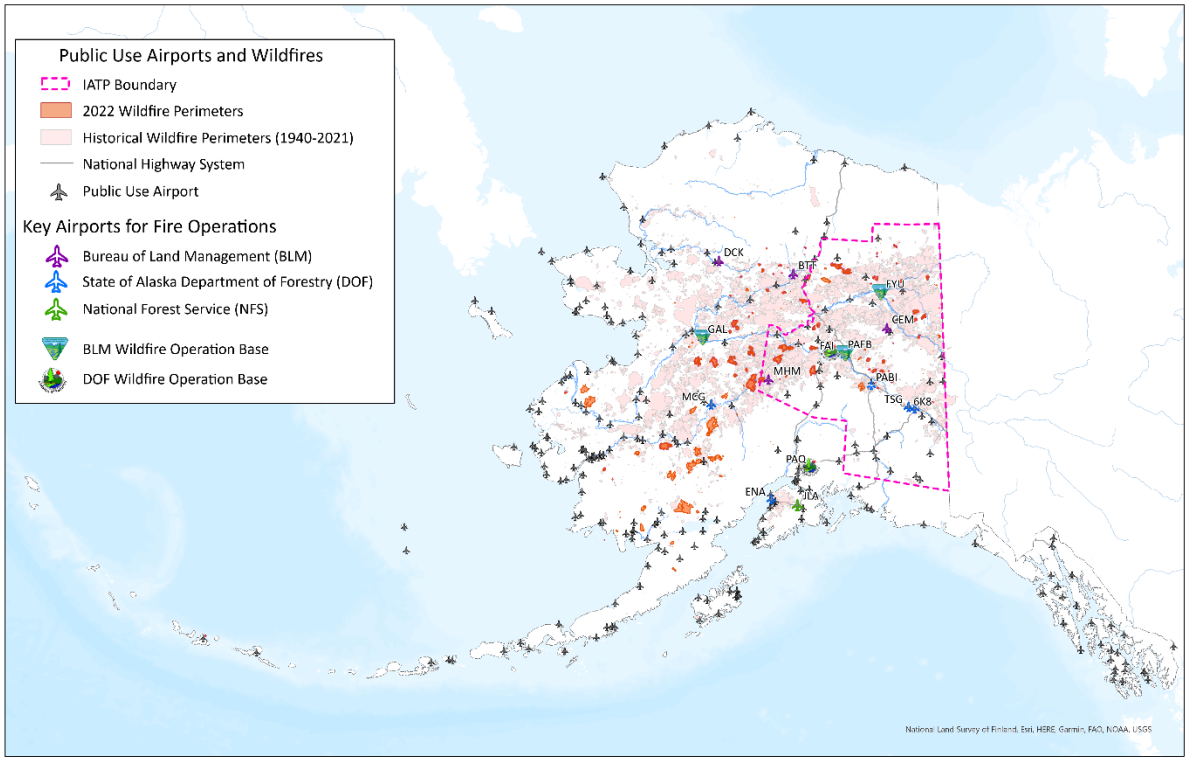


Figure 23. State of Alaska Public-Use Airports and Wildfires[1]

The BLM Alaska State Aviation Office is currently located on Fort Wainwright, but the operations may be moved to Fairbanks International to facilitate efficient wildland fire management efforts in Interior Alaska. This office is responsible for providing safe, cost-effective aviation support to BLM Alaska and its interagency partners, including fire response. BLM AFS maintains a seasonal fire base at the Fort Yukon airport (FYU). Central and Lake Minchumina are other airports in the IATP region that BLM AFS uses often for fire response. BLM owns four aircraft nationwide, and four of those aircraft are based in Alaska, including a PC-12 Pilatus and a Quest Kodiak that serve wildfire response, habitat survey, and personnel transport needs. The BLM additionally contracts aircraft annually for Alaska's wildland season, including four water-scooping Fire Boss Single Engine Air Tractor aircraft.

DOF uses both fixed and rotary wing aircraft, as well as ground-based fire apparatus in its firefighting operations. DOF owns four aircraft for logistics and aerial supervision and coordination of the contracted tankers. These aircraft are a de Haviland Beaver, two Aero Commanders, and a Cessna Caravan. The agency also has two exclusive use contracts for air tankers, a Convair 580 turboprop air tanker based out of Fairbanks and a Bombardier Q-400 twin turboprop air tanker based in Palmer. The DOF also contracts additional aircraft, as needed. DOF has a permanent fire base headquartered at the Palmer airport, and it operates a seasonal aviation tanker fire base at Fairbanks International (FAI). The FAI seasonal base includes space for tanker staging and refilling and a small lawn area to temporarily house personnel during the season. DOF has intentions of upgrading the seasonal FAI base to a more permanent site. Tanacross airport is also used by DOF during fire operations.

This plan recommends that DOT&PF keep all its facilities used for wildland firefighting support serviceable – that it maintains safe airports out of which to operate and at which to land. The DOT&PF should continue to pursue consideration of Tok as a regional facility so that DNR can relocate its Tanacross operations to that airport and continue to conduct aircraft activities effectively in the region. DNR DOF commented that, if Tanacross becomes unusable and no other facility nearby were available for relocation, pulling back operations to Fairbanks would greatly reduce firefighting response times and thus increase costs and damage from wildland fires in the region.

[1] Alaska Department of Transportation & Public Facilities, Alaska Aviation System Plan Newsletter, Fall 2022.

4.12 UAS

The Interior region is a hotbed for UAS use, testing, and development. Fairbanks International is considered the center of UAS activity, and rapid growth in UAS operations and applications is anticipated throughout the region. The DOT&PF Division of Statewide Aviation UAS/Drone Program Coordinator reports that Nenana and Clear are UAS integrated with plans to expand UAS capabilities.

In June of 2023, Merlin Labs, in partnership with ACUASI and Everts Air Cargo, completed 25 test flights of a fully autonomous Cessna 208 Caravan from Fairbanks International to Fort Yukon, Galena, Huslia, Tanana, and Prudhoe Bay.

The AASP Performance Measures for Hubs, Community, and Local NPIAS High-Activity airports include a metric for UAS Integration. Presently, only Fairbanks International reports meeting this criterion, although Nenana has recently achieved UAS integration. Clear is a Local NPIAS Low-Activity facility, and UAS integration is not a tracked metric for facilities in this classification.

To achieve UAS integration at an airport, there are two primary requirements to make it possible:

1. Communications
2. Real-time weather reporting

These two requirements are already high priorities in this region, and this plan includes recommendations for both – in the DOT&PF being engaged and proactive in broadband deployment throughout the state and in aggressively pursuing the further development of weather reporting stations throughout the region. If broadband and real-time weather reporting are available at an airport, that airport is positioned well to take advantage of UAS and Advanced Air Mobility.

4.13 Funding Landscape

The airports in the IATP region have not seen significant investment in the last 13 years. The state has justifiably prioritized projects statewide at airports that provide the only reliable year-round access to communities. However, as other regional plans suggest, much of the direly needed work at these other airports has been accomplished. This plan recommends that long-deferred capital needs in the IATP region be pushed forward for consideration in future AIP funding and other grant opportunities.

The *2010 IATP* history of AIP work included $124.5 million in project funding, spent at 34 facilities (excluding FAI) in the region between FY 1986 and FY 2009. Since that report, AIP work has totaled $62.5 million in projects at 24 facilities (excluding FAI) between FY 2011 and FY 2022. There is only $23 million in project work at twelve facilities (excluding FAI) in the IATP region included in DOT&PF's 2020-2027 Airport Capital Improvement Program (ACIP). The ACIP includes projects planned by the DOT&PF, but these projects have not necessarily received AIP grant funding yet. For the twelve IATP facilities included in the 2020-2027 ACIP, only two major improvement projects are planned (at Chalkyitsik, which went to grant in September 2023, and at Eagle); four airports are planned to receive new equipment only; four airports are planned for resurfacing work only; one airport is planned for resurfacing work and new equipment; and one airport is planned to receive a new electric bank and resurfacing work. No facilities from the IATP region were scored in the most recent Aviation Project Evaluation Board (APEB) meeting. The needs of this region – particularly the runway improvements, lighting projects, and weather reporting stations – need to be brought forward for project evaluation, programming, and funding.

The Airport Improvement Program (AIP) remains the primary source of capital funding to accomplish airport development. AIP funding includes both apportioned (entitlement) grants and discretionary (competitive) grants. Apportioned funds must be used on an airport's highest-priority projects. Discretionary funding is determined after entitlement funding has been determined, and its purpose is to fund needs that exceed an airport's available apportioned funds. AIP funding for the state of Alaska averaged approximately $220 million annually over the 2010-2019 time period (the time period ending just prior to the COVID-19 pandemic and the many supplemental appropriations made since 2020). Funding has been significantly higher in the most recent years - $274 million in 2020, $338 million in 2021, and $383 million in 2022. These higher levels of funding have unfortunately not translated into a significant number of additional projects. A major portion of the additional funding has simply served to cover the inflated costs of construction.

The limitations and constraints on AIP funding and the FAA reauthorization language can hinder Alaskan airport priorities – federal priorities focus on safety and FAA objectives and do not account for the other needs/priorities of Alaska such as

economic development support. The DOT&PF Division of Statewide Aviation has been dedicated to working with decision-makers and the FAA to advocate for Alaska's priorities and needs and to get appropriate funding and authorization language included in future appropriations.

There have been supplemental appropriations made to AIP funds annually since 2018, each year with a 3-year window in which to be awarded the funding and sometimes with specific priorities identified by the Secretary of Transportation or Congress. The FAA issues a Notice of Funding Opportunity for airports in the NPIAS to apply for these discretionary grants. Alaska has pursued this funding, and over the years has received approximately $33 million each year for projects. Alaska airports that have been awarded these supplemental grants include Ted Stevens Anchorage International, Bethel, Bettles, Juneau International, Kaltag, Kasigluk, Kongiganak, Lake Hood, Merrill Field, Napaskiak, Newtok, Nome, Palmer, and Soldotna. The eight AWOS units currently awaiting final certification and turnover to the FAA were funded in the first round of these supplemental appropriations. Northern Region is pursuing a grant for Manley Hot Springs airport from the latest appropriations and funding opportunity.

The State match program for local airport owners/sponsors has ceased to be in practice over recent years. This program previously helped local sponsors meet their match funding for AIP grants by providing half of the required sponsor match. The State is considering reinstating this program, but no official determination has yet been made.

Funding to accomplish broadband build-out comes from the BIL, separate from the AIP, and will not likely be managed by the DOT&PF. The funds will be overseen by the U.S. Department of Commerce and are slated to be divvied up over the next two years through the Broadband Equity, Access, and Deployment program.

A relatively new source of prospective funding may be the funding that is supporting UAS research, development, and build-out. This funding is separate from the AIP and is sourced from a variety of public and private entities, including federal USDOT and FAA grants, private investments, partnerships, and funding from State of Alaska agencies. The funding has potential to address some aviation needs that support both UAS and classic aircraft, outside of the AIP. Coordination with the DOT&PF Division of Statewide Aviation UAS/Drone Program may identify possibilities to fund various airport needs in the IATP region.

A side note regarding funding is that the FAA faces funding shortfalls/limitations, just like DOT&PF, and this has impacts to their goals of weather reporting, weather cameras, instrument approach procedure developments, and all other work they would do to improve aviation. The DOT&PF (and other airport sponsors) would be well-served to be looking for opportunities to creatively fund needs outside of conventional funding streams. – opportunities such as UAS funding, in particular.

4.14 Other

4.14.1 Resiliency

Resiliency was a key area of interest identified by the Interior region during the *Alaska Moves 2050* public engagement efforts. One of the "Key Opportunities" for the rural aviation system is listed in the plan as, *"Continue to improve the resiliency of rural airports with innovations in technology and seasonal solutions, like ice roads."* The AASP is presently conducting the *Western Alaska Airport Resiliency Study*, which is intended to provide valuable insights on factors and decisions contributing to the long-term stability and resiliency of airports. Work began on this study in December 2022 and is expected to be complete in June 2024. Although none of the 29 airports being considered in the study are within the IATP region, information developed by this study will likely be of interest and application to airport development and maintenance in the IATP region.

4.14.2 U.S. Customs and Border Protection

There are three ports of entry in the IATP region for surface traffic – Alcan just inside the Alaskan side of the border, along the Alcan Highway, Eagle, and Poker Creek (seasonal). There is only one port of entry for aircraft – Northway. Northway is approximately 50 miles northwest of the Alcan Port of Entry, and pilots must meet U.S. Customs and Border Protection (CBP) agents there at specified times. The most recently published hours of operation for CBP at the Northway Airport are 9:00 AM and 5:00 PM, seven days a week, which means there are only two times each day that aircraft have as options to clear customs when crossing into Alaska from Canada (referenced from CPB, last updated January 26, 2023). Floatplanes clear customs at Yarger Lake, an unregistered (but charted) waterway eight miles east of Northway on the Alaska Highway.

A U.S. Customs Agent must travel to meet and clear the aircraft at Yarger Lake. Although Eagle is a surface port of entry, the CPB website states that aircraft arriving from foreign must be inspected by CPB *prior* to landing at Eagle and directs contact to the Alcan port of entry.

The BIL included funding for a new port of entry on the Alaska Highway – a replacement for the current Alcan facility. Proposed elements include infrastructure to support larger vehicle inspections and additional staff. The new station will be constructed in close proximity to the existing station. Although there has been speculation that a new station could be located closer to an existing population center (Tok, most notably), ports of entry must be located as near borders as possible. There are no anticipated changes for aircraft clearance once the new facility is built. Aircraft will still be cleared at Northway Airport or Yarger Lake. The project is currently in the environmental study phase.

5.0 KEY ISSUES & RECOMMENDATIONS

Throughout this memorandum, key issues and recommendations for projects, plans, studies, administrative actions, and on-going policy engagement has been noted. This section provides a summary reference for all recommendations. Recommendations are not exclusive to the DOT&PF – they are intended to support an improved aviation system in the IATP region overall, and some recommendations would fall under the responsibility of agencies or groups other than the DOT&PF.

5.1 Administrative Recommendations

AIRPORT/LOCATION	RECOMMENDATION
Healy Lake Airport	Register airport with FAA and consider adding to NPIAS.
Eureka Creek (2Z2)	Deactivate.
Eva Creek (2Z3)	Work with facility owner (DNR) to have critical improvements made that will restore this facility to a safely usable condition.
Tetlin (3T4)	Investigate why Tetlin (3T4) did not have an IAP developed after the 2013 WAAS survey was completed, to determine whether the airport was deemed to be unsuitable for an RNAV approach or the approach procedure development has not yet been requested.

5.2 Programmatic & Funding Recommendations

PROGRAM	RECOMMENDATION	AIRPORTS/LOCATION
DOT&PF Statewide 10-year Lighting Priority Assessment	Continue to program and pursue funding.	Beaver (WBQ) Birch Creek (Z91) Chalkyitsik (CIK) *[FY24/FY25]* Eagle (EAA) Gulkana (GKN) Manley Hot Springs (MLY) Minchumina (MHM) Minto Al Wright (51Z) Nenana Muni (ENN) Northway (ORT) Ralph M Calhoun Meml (TAL) Rampart (RMP) Stevens Village (SVS) Tetlin (3T4)
Backcountry Airstrip Work Group	In partnership with aviation interest groups, encourage the development and further work of a Backcountry Airstrip Work Group to explore volunteer/stakeholder maintenance of critical landing strips.	Areawide
Wildland Firefighting	Ensure there are plans in place to maintain wildland firefighting operations in the region at a safe and serviceable level.	Areawide

5.3 Policy & Planning Engagement

PLAN/POLICY TOPIC	RECOMMENDATION	LOCATION/AIRPORT
Raise AIP Entitlement Funding for Nonprimary NPIAS Airports	Engage with policy makers and the FAA to elevate the entitlement funding for nonprimary NPIAS airports.	Areawide
Aviation Master Plans & Airport Layout Plans	Consider space for and facilitation of fuel being made available at airports.	Areawide
UAS, Broadband	Remain active in broadband roll-out, especially in support of UAS integration.	Areawide
Airspace Changes	Continue participation in ACMAC and engagement in airspace issues, proposed changes.	Areawide
IAPs	Pursue development of IAPs in coordination with installing weather source systems at these airports.	Birch Creek (Z91) Circle City (CRC) McCarthy (15Z) Stevens Village (SVS)
AASP	Include IAP needs and requests from this study in the upcoming AASP special study (IAPs Statewide).	Areawide
Weather Reporting	Monitor status of AWOS, VWOS, and other weather reporting systems; pursue opportunities to install these systems.	Areawide
Flight Service Two-Way Texting Service & eSRS	Share information with stakeholders about Flight Service Two-Way Texting Service and eSRS.	Areawide

5.4 Recommended Plans & Studies

PLAN/STUDY TOPIC	RECOMMENDATION	LOCATION/AIRPORT
Regionally Significant Airports	Further study (Master Plans or expanded Airport Layout Plan updates) of specific airports as regionally significant facilities.	Tok Junction (6K8) Gulkana (GKN)
Denali Area Airport Planning Study	Continue and complete on-going planning study.	Denali Area
Lighting System Evaluation & Replacement Plan	Evaluate aging lighting systems that are not currently included in DOT&PF's 10-year priority list or other sponsor's needs lists and evaluate need for replacement.	Arctic Village (ARC) Central (CEM) Circle City (CRC) Clear (Z84) Venetie (VEE)
Relocation of Wildland Firefighting Seasonal Tanker Base	Evaluation needed for Division of Forestry to relocate its seasonal tanker base for Wildland Firefighting.	Tok (6K8)

5.5 Recommended Capital Projects

PROJECT	LOCATION/AIRPORT	
Runway Extensions	Central (CEM) Chistochina (CZO) Circle City (CRC) Delta Junction (D66)	Gulkana (GKN) Healy River (HRR) Tok Junction (6K8)
Runway Surface Improvements	Arctic Village (ARC) Bradley Sky-Ranch (95Z) Chalkyitsik (CIK) [*Pending FY24/FY25]* Central (CEM) Chisana (CZN) Chistochina (CZO) Clear (Z84)	Copper Center 2 (Z93) Gold King Creek (AK7) Healy River (HRR) McCarthy (15Z) Northway (ORT) Tok Junction (6K8) Wiseman (WSM)
Install MIRL Lighting Systems	Chistochina (CZO)	Delta Junction (D66)
Upgrade to HIRL Lighting System	Fort Yukon (FYU)	
Lighting Projects Identified in DOT&PF Statewide 10-year Lighting Priority Assessment	Beaver (WBQ) Birch Creek (Z91) Chalkyitsik (CIK) *[FY24/FY25]* Eagle (EAA) Gulkana (GKN) Manley Hot Springs (MLY) Minchumina (MHM)	Minto Al Wright (51Z) Nenana Muni (ENN) Northway (ORT) Ralph M Calhoun Meml (TAL) Rampart (RMP) Stevens Village (SVS) Tetlin (3T4)
Install Weather Reporting Stations	Beaver (WBQ) Cantwell (TTW) Central (CEM) Chalkyitsik (CIK) Circle City (CRC)	Healy River (HRR) Manley Hot Springs (MLY) McCarthy (15Z) Venetie (VEE)
Install Weather Cameras	Birch Creek (Z91) Circle City (CRC) Manley Hot Springs (MLY) McCarthy (15Z)	Prospect Creek (PPC) Stevens Village (SVS) Tetlin (3T4) Venetie (VEE)
	Refer to Table 4 to identify owner/sponsor of each airport listed above.	

APPENDICES

6.0 APPENDICES

- Appendix 1: Airport Improvements Recommended by *2010 IATP*
- Appendix 2: AASP & NPIAS Classifications
- Appendix 3: Summary of IATP Airports by Ownership, AASP Classification, On/Off Road Status, and Seaplane Base Status
- Appendix 4: AASP Performance Measure Report Cards
- Appendix 5: Airport Forecasts Data
- Appendix 6: Stakeholder Input Used in IATP Update
- Appendix 7: Broadband Connectivity at IATP Airports
- Appendix 8: Aerial Photo Log of IATP Airports by AASP Classification
- Appendix 9: References

Appendix 1: Airport Improvements Recommended by *2010 IATP*

Table 60 shows recommendations from the *2010 IATP* and the current disposition of those recommendations. The projects have historically not scored well when competing for funds with so many airports statewide serving off-road communities. Many projects identified in the *2010 IATP* have been dropped. Many of the projects were in some stage of design, but when they did not score well and receive funding, all that design time went un-reimbursed, and Alaska State OMB/Legislature started curbing the process of having DOT spend significant time on projects not likely to be funded. Very little significant work has been done since 2010.

Table 60. 2010 IATP Airport Capital Improvement Recommendations

Airport	Description	Estimated Cost	Priority	Current Disposition
Beaver	Resurfacing, grading, drainage.	$5,000,000	Medium	Obstruction removal and runway rehab in 2019
Birch Creek	Instrument approach (1 mile min.), SRE Building, resurfacing.	$3,000,000	Medium	None of the recommended work has been accomplished
Central	700' runway extension, instrument approach (1 mile min.), AWOS, obstruction removal, resurfacing.	$2,500,000	Medium, Long	RNAV published, runway rehab; all else still needed
Chalkyitsik	Reconstruction, apron, road relocation, lighting rehab, drainage, SRE Building.	$10,500,000	Short, Medium	Much of this work appears to be in 2023 grant project
Chistochina	Airport relocation.	$10,000,000	Long	No relocation yet
Chitina	SRE Building upgrade.	$150,000	Medium	Not constructed
Circle City	400' runway extension, instrument approach (1 mile min.), taxiway and apron rehab, resurfacing.	$5,000,000	Long	Runway resurfaced in 2014
Coldfoot	Erosion control, lighting replacement, obstruction clearance, resurfacing.	$6,500,000	Medium, Long	Runway, taxiway, apron rehab work done twice since 2010; lighting rehab in 2015
Dalton-5 Mile	Airport Reconnaissance for gas pipeline support	$1,000,000	Long	No records
Delta Junction/Allen Army Airfield	Joint civilian/military use or better, NPIAS airport recommended. Cost could be $2 - $20 million.	$11,000,000	Short, Medium	No longer registered as a Public Use facility
Eagle	Instrument approach (1 mile min.), resurfacing.	$3,500,000	Long	RNAV published, runway rehab
Fort Yukon	Instrument approach Improvement to 3/4 mile min., resurfacing, safety area improvements, drainage, and SRE building.	$15,550,250	Short (FFY 2009)	IAPs published with 1 mi. min; all other work appears to have been accomplished with ARRA economic stimulus funding
Gold King Creek	Modest Safety Improvements	$50,000	Short, Medium	No work done
Gulkana	Instrument approach improvement to 3/4 mile min. requiring approach lights, parallel taxiway, airfield repaving, floatplane basin.	$15,000,000	Medium, Long	IAPs published with 1 mi. min; runway has had a couple rehabs; float basin and parallel taxiway not constructed
Lake Louise	2nd stage of runway rehab.	$2,300,000	Short (FFY 2009/ FFY 2010)	Accomplished

Airport	Description	Estimated Cost	Priority	Current Disposition
Livengood Camp	Improvements for gas pipeline support TBD.	$3,000,000	Medium	Major improvement work, including runway extension, completed with State of Alaska Deferred Maintenance funding sometime between 2012 and 2014
Manley Hot Springs	Airport relocation.	$13,800,000	Short (FFY 2010)	Accomplished in 2016/2017 grant projects
McCarthy	Instrument approach (1 mile min.), MIRL, AWOS, resurfacing.	$3,500,000	Long	All improvements still needed, except runway rehab
Minchumina	Resurfacing, apron reconstruction	$8,000,000	Long	Runway rehab done; no apron work
Nenana Municipal	Airfield pavement rehab, fencing, other improvements	$12,000,000	Medium, Long	Runway rehab, fencing, fuel farm in 2011-2013; airport currently making plans for further improvements
Pippin Lake/Tonsina New Airport	New Local-Major airport, turf runway, visual approaches, serving small A-I aircraft	$2,000,000	Long	No records
Prospect Creek	Runway Safety Area Improvement, resurfacing, improvements for gas pipeline support.	$5,600,000	Medium, Long	No work done – unobligated airport, State does not want to obligate
Rampart	SRE Building upgrade, resurfacing.	$3,500,000	Medium, Long	No work done
Stevens Village	Instrument approach (1 mile min.), resurfacing.	$3,500,000	Long	No work done
Summit	Tiedown, access road improvements.	$100,000	Medium	No work done
Tetlin	Instrument approach (1 mile min.)	$450,000	Medium, Long	Aeronautical survey conducted for WAAS approach, but no IAP published
Tok Junction/ Tanacross	More runway length and better instrument approach. Recommend upgrades for Tok Junction, Tanacross, or another site for Regional Airport to serve Tok population. Improvements to support gas pipeline TBD. Tok Junction has $7 mil runway & crosswind runway project programmed after FFY2012.	$35,000,000	Medium, Long	No major work done – runway remains the same length, a couple runway rehab projects, but no major improvement projects; runway extension a tough hurdle with FAA regs, land status UTAPS study (2022-2023) to consider regional airport.
Venetie	Instrument approach (1 mile min.), AWOS, resurfacing.	$3,000,000	Medium	RNAV published; no other work done

Appendix 2: AASP & NPIAS Classifications

Airport classification and performance measures are part of the foundation of aviation system planning and provide essential metrics to track system health (*AASP Classifications & Performance Measures*, May 2022). Although the FAA classifies airports through the NPIAS, the designations primarily relate to federal funding considerations. The AASP airport classification system provides more clarity on the roles and needs of Alaska's 700+ registered facilities. The FAA recognizes the value and purpose of state classification systems, and the NPIAS and state classifications are both considered when planning airport developments.

NPIAS classifications broadly divide airports into two categories – Primary and Nonprimary – which are then further qualified by designations of hub type or airport role. The distinction between categories of Primary airports in the NPIAS is based on the number of annual enplanements at an airport. Nonprimary airport categories are based on existing activity (number and types of based aircraft and volume and types of flights), geographic factors, and public interest functions.

The graphic below summarizes the NPIAS and AASP classification definitions. The content was adapted from the 2022 *AASP Classifications and Performance Measures Final Report*.

Full definitions of NPIAS classifications can be found in the FAA's *NPIAS Narrative*, published every two years and available at https://www.faa.gov/airports/planning_capacity/npias.

Full definitions of AASP classifications can be found in the 2011 *AASP Mission, Goals, Measures, and Classifications* available at https://www.alaskaasp.com/documents/phase-i-documents.aspx.

NPIAS and AASP Classifications Summarized Definitions

NPIAS Classification Summarized Definitions

Primary Commercial Service Medium and Small Hub: A medium hub airport has at least 0.25 percent, but less than 1 percent of the total annual passenger boardings in the U.S., and a small hub airport has at least 0.05 percent, but less than 0.25 percent, of the total annual passenger boardings in the U.S.

Primary Commercial Service Nonhub: A nonhub airport receives more than 10,000 passenger boardings but less than 0.05 percent of the total annual passenger boardings in the U.S.

Nonprimary, Commercial Service, Nonhubs: Also referred to as nonhub nonprimary, these airports have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

Nonprimary, General Aviation, Local: A public airport that does not have scheduled service or has scheduled service with less than 2,500 passenger boardings each year and provides access to markets within a state or immediate region.

Nonprimary, General Aviation, Basic: A public airport that does not have scheduled service or has scheduled service with less than 2,500 passenger boardings each year, provides a means for general aviation flying, and links the community to the national airport system. These airports support general aviation activities (e.g., emergency response, air ambulance service, flight training, and personal flying).

Nonprimary, General Aviation, Unclassified: These airports are currently in the NPIAS but with limited activity.

Non-NPIAS: These airports are registered and tracked by the FAA but are not included in the NPIAS and are not eligible for AIP funding.

AASP Classification Summarized Definitions

Medium and Small Hubs: A medium hub airport has at least 0.25 percent, but less than 1 percent, of the total annual passenger boardings in the U.S., and a small hub airport has at least 0.05 percent, but less than 0.25 percent, of the total annual passenger boardings in the U.S.

Regional Hubs: Regional hubs meet three or more of the following criteria: (1) are designated primary airports, as defined by the FAA, with at least 10,000 annual passenger boardings; (2) are air carrier hubs, as defined by the FAA; (3) are Federal Aviation Regulation (FAR) Part 139 certificated; (4) are USPS hubs; (5) serve communities with health facilities that serve two or more communities; (6) are DNR-designated fire tanker bases; or (7) serve communities with U.S. Coast Guard facilities.

Community Class: Community class airports are a community's primary airport that service basic needs (e.g., passenger travel to regional hubs, mail service, local aviation-related business, and emergency needs). This classification includes communities with a year round population of at least 25 people, has a public school, and is located more than 1 hour by road from an internal, regional hub, or other community class airport.

- **Off-Road**: Not connect to then National Highway System (NHS)
- **On-Road**: Connected to the NHS

Local Class – NPIAS High Activity: These airports accommodate mostly general aviation activity. They either supplement hub and community airports by providing additional general aviation capacity in the more densely populated portions of the state or serve low-population areas where a community airport is not warranted. High activity airports must have at least 20 based aircraft.

Local Class – NPIAS Low Activity: These airports accommodate mostly general aviation activity. They either supplement international, regional hub, and community airports by providing additional general aviation capacity in the more densely populated portions of the state or serve low population areas where a community airport is not warranted. Low activity airports have fewer than 20 based aircraft.

Local Class – Non-NPIAS: These public-use airports, heliports, or seaplane bases are documented in the FAA Alaska Chart Supplement but are not included in the NPIAS and are not eligible for federal grant funding.

Landing Strips: Landing Strips are the remaining public and privately owned, non-NPIAS facilities that are registered with the FAA, not owned by DOT&PF, and not included in previously defined classifications.

Appendix 3: Summary of IATP Airports by Ownership, AASP Classification, On/Off Road Status, and Seaplane Base Status

Ownership	Small Hub	Regional Hub	Community Off-Road	Community On-Road	Local NPIAS High-Activity	Local NPIAS Low-Activity	Local Non-NPIAS	Landing Strips
DOT&PF	Fairbanks International (FAI)	Fort Yukon (FYU)	Beaver (WBQ) Chalkyitsik (CIK) Ralph M Calhoun Meml [Tanana] (TAL) Stevens Village (SVS)	Central (CEM) Chistochina (CZO) Circle City (CRC) Eagle (EAA) Gulkana (GKN) Healy River (HRR) Manley Hot Springs (MLY) Minto Al Wright (51Z) Northway (ORT) Tok Junction (6K8)		Birch Creek (Z91) Boundary (BYA) Chandalar Lake (WCR) Chicken (CKX) Chisana (CZN) Chitina (CXC) Circle Hot Springs (CHP) Clear (Z84) Coldfoot (CXF) Kantishna (5Z5) Lake Louise (Z55) May Creek (MYK) McCarthy (15Z) Minchumina (MHM) Prospect Creek (PPC) Rampart (RMP) Tetlin (3T4) Wiseman (WSM)	Copper Center 2 (Z93) Gold King Creek (AK7) Livengood Camp (4AK) Summit (UMM) Tazlina (Z14)	
Local Government			Arctic Village (ARC) Venetie (VEE)	Delta Junction (D66)	Nenana Muni (ENN)			
Federal Agency								Black Rapids (5BK) Coal Creek (L20) Glacier Creek (KGZ) Jakes Bar (AK0) McKinley Ntl Park (INR) Paxson (PXK) Stampede (Z90) Tanacross (TSG)
State Agency								Eva Creek (2Z3) Quail Creek (20K) Tolsona Lake (58A) **SPB**
Private							Bradley Sky-Ranch (95Z)	Cantwell (TTW) Lake Louise Seaplane Base (13S) **SPB** Tazlina/Smokey Lake (5AK) **SPB**
Public Domain								Chena River (2Z5) **SPB** Eureka Creek (2Z2) Horsfeld (4Z5) Totatlanika River (9AK)

Off the road system
On the road system

SPB: Seaplane Base

Appendix 4: AASP Performance Measure Report Cards

IATP Small Hub Airport AASP Performance Measures Score Card				
	Performance Measure	**Metric Definition**	**Target Metric**	**Fairbanks Intl (FAI)**
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	No
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No
	Parallel Taxiway	Metric only applicable to facilities with more than 20,000 annual operations	Full	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	Yes
Airport Safety Measures	Primary Runway Length	5,000 ft or longer for Hub classes	≥ 5,000	11,800
	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	PCI 71
	Primary Runway Lighting	HIRL for Hubs and Regionals	HIRL	HIRL
	Primary Runway ALS or REIL	Approach Lighting System or Runway End Indicator Lights	Not UNK or NSTD	Not UNK or NSTD
	Wind Coverage > 95% and/or Crosswi	Wind coverage of 95% or higher or existing crosswind runway	Yes or Wind Coverage > 95%	> 95%
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	ASOS
	Weather Camera	FAA weather camera onsite	Yes	Yes
Airport Planning Measures	Airport Layout Plan (ALP)	Less than 5 years for Med/Small Hubs	< 5 Yrs	>5 yrs (2013)
	Airport Master Plan (AMP)	5 years for Med/Small Hubs	< 5 Yrs	> 5 yrs (2016)
	Part 139 Compliant	No FAA letter of correction indicating capital project is needed to resolve Part 139 annual inspection deficiency/violation	Yes	Yes
	FAA Compliant GIS Data	Approved AGIS compliant with AC 150/5300-18B	Yes	Yes
Community: Quality of Life	Public Restrooms	Public restrooms available	Yes	Yes
	Passenger Waiting Shelter	Passenger waiting shelter available	Yes	Yes
Community: Economic Development	Fuel Available	Fuel available for purchase - type of fuel	Yes	Yes
	Documented Need for Additional Lea	Documented need for additional lease lots	No	No
	Documented Need for Aircraft or Veh	Documented need for vehicle or aircraft parking	No	No
	Unmanned Aerial System (UAS) Integ	Airport connected to UAS corridor	Yes	Yes
	Broadband Connectivity Available	Broadband available through local fiber connection	Yes	Yes

Remarks on Score Card:

Airport Design: FAI does not meet any of the 4 Measures, however Current Deisgn A/C might be an error in report generation for all facilities

Airport Safety: FAI meets all Safety measures

Airport Planning: FAI's ALP is 10 years old in 2023; FAI's AMP is 7 years old in 2023

Community: FAI meets all Community measures

IATP Regional Hub Airport AASP Performance Measures Score Card				
	Performance Measure	**Metric Definition**	**Target Metric**	**Fort Yukon (FYU)**
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	No
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No
	Parallel Taxiway	Metric only applicable to facilities with more than 20,000 annual operations	Full or Partial	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	Yes
Airport Safety Measures	Primary Runway Length	5,000 ft or longer for Hub classes	≥ 5,000	5,000
	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	Good
	Primary Runway Lighting	HIRL for Hubs and Regionals	HIRL	MIRL
	Primary Runway ALS or REIL	Approach Lighting System or Runway End Indicator Lights	Not UNK or NSTD	Not UNK or NSTD
	Wind Coverage > 95% and/or Crosswi	Wind coverage of 95% or higher or existing crosswind runway	Yes or Wind Coverage > 95%	> 95%
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	AWOS
	Weather Camera	FAA weather camera onsite	Yes	Yes
Airport Planning Measures	Airport Layout Plan (ALP)	Less than 10 years for Regional Hubs	< 10 Yrs	< 10 yrs(2013)
	Airport Master Plan (AMP)	10 years for Regionals	< 10 Yrs	> 10 Yrs
	Current CIIMP Inspection	3 years for Regional	< 2 Yrs	> 2 yrs
	Part 139 Compliant	No FAA letter of correction indicating capital project is needed to resolve Part 139 annual inspection deficiency/violation	Yes	N/A
	FAA Compliant GIS Data	Approved AGIS compliant with AC 150/5300-18B	Yes	Yes
Community: Quality of Life	Public Restrooms	Public restrooms available	Yes	No
	Passenger Waiting Shelter	Passenger waiting shelter available	Yes	Yes
Community: Economic Development	Fuel Available	Fuel available for purchase - type of fuel	Yes	No
	Documented Need for Additional Lea	Documented need for additional lease lots	No	No
	Documented Need for Aircraft or Veh	Documented need for vehicle or aircraft parking	No	No
	Unmanned Aerial System (UAS) Integ	Airport connected to UAS corridor	Yes	No
	Broadband Connectivity Available	Broadband available through local fiber connection	Yes	No

Remarks on Score Card:

Airport Design: FYU does not meet any of the 4 Measures, however Current Deisgn A/C might be an error in report generation for all facilities, and FYU does not have > 20,000 ops so parallel twy should be N/A

Airport Safety: FYU should improve lighting to HIRL, although MIRL are acceptable for its existing NPI approach; MALSF Rwy End 22 satisfies the runway end lighting criteria

Airport Planning: FYU's ALP will be 10 years old in 2023; FYU needs an AMP (no AMP in document files); FYU has not received a CIMP to date

Community: There are no public restrooms available; there is no fuel available; FYU is not connected to UAS corridor; there is no broadband through local fiber connection

IATP Community Off-Road Airports AASP Performance Measures Score Card									
	Performance Measure	Metric Definition	Target Metric	Arctic Village (ARC)	Beaver (WBQ)	Chalkyitsik (CIK)	Ralph M Calhoun Meml (TAL)	Stevens Village (SVS)	Venetie (VEE)
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	Yes	Yes	Yes	No	Yes	Yes
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No	No	No	No	No	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	No	Yes	Yes	Yes	No	No
Airport Safety Measures	Primary Runway Length	3,300 ft or longer for Community classes	≥ 3,300	4,500	3,934	4,000	4,400	4,000	4,000
	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	Poor	Good	Fair	Good	Good	Good
	Primary Runway Lighting	MIRL for Community	MIRL	MIRL	MIRL	MIRL	MIRL	MIRL	MIRL
	Primary Runway ALS or REIL	Approach Lighting System or Runway End Indicator Lights	Not UNK or NSTD	Not UNK or NSTD	UNK	UNK	UNK	Not UNK or NSTD	UNK
	Wind Coverage > 95% and/or Crosswi	Wind coverage of 95% or higher or existing crosswind runway	Yes or Wind Coverage > 95%	> 95%	No	No	> 95%	> 95%	> 95%
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	AWOS	No	No	ASOS	No	No
	Weather Camera	FAA weather camera onsite	Yes	Yes	Yes	Yes	Yes	No	No
	Seasonal Closures	Closed more than 48 hours in multiple years	None	None	None	None	None	None	None
Airport Planning Measures	Current CIIMP Inspection	3 years for Community	< 3 Yrs	> 3 Yrs	> 3 Yrs	> 3 Yrs (2017)	> 3 Yrs (2014)	> 3 Yrs (2017)	> 3 Yrs
	FAA Compliant GIS Data	Approved AGIS compliant with AC 150/5300-18B	Yes	No	Yes	Yes	Yes	Yes	No
Community: Quality of Life	Public Restrooms	Public restrooms available	Yes	No	No	No	Yes	No	No
	Passenger Waiting Shelter	Passenger waiting shelter available	Yes	Yes	No	No	No	No	Yes
	Emergency Maintenance Shelter	Emergency maintenance shelter onsite	Yes	No	Yes	Yes	Yes	Yes	No
Community: Economic Development	Fuel Available	Fuel available for purchase - type of fuel	Yes	No	No	No	No	No	No
	Documented Need for Additional Leas	Documented need for additional lease lots	No	No	No	No	No	No	No
	Documented Need for Aircraft or Vehi	Documented need for vehicle or aircraft parking	No	No	No	No	No	No	No
	Unmanned Aerial System (UAS) Integr	Airport connected to UAS corridor	Yes	No	No	No	No	No	No
	Broadband Connectivity Available	Broadband available through local fiber connection	Yes	No	Yes	No	No	No	No

Remarks on Score Card:

Airport Design: TAL, WBQ, and CIK have work needed to meet Design measures; Current Deisgn A/C might be an error in report generation for all facilities

Airport Safety: a couple gravel runways need improvement; most Community Off-Road in need of weather stations and/or weather camera

Airport Planning: all 6 need CIMP inspections; AGIS data desired at ARC & VEE

Community: Public restrooms needed at 5 of 6; PAX shelter needed at 4 of 6; emergency Mx shelter needed at 2 of 6; no fuel available at any; UAS integration needed; broadband needed at 5 of 6

IATP Community Off-Road Airports AASP Performance Measures Score Card														
	Performance Measure	Metric Definition	Target Metric	Central (CEM)	Chistochina (CZO)	Circle City (CRC)	Delta Junction (D66)	Eagle (EAA)	Gulkana (GKN)	Healy River (HRR)	Manley Hot Springs (MLY)	Minto Al Wright (51Z)	Northway (ORT)	Tok Junction (6K8)
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No	No	No	No	No	No	No	No	No	No	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	No	No	Yes	No	No	Yes	No	No	Yes	No	Yes
Airport Safety Measures	Primary Runway Length	3,300 ft or longer for Community classes	≥ 3,300	2,782	2,060	2,979	2,500	3,600	5,001	2,910	3,400	3,400	5,100	2,509
	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	Poor	Fair	Good	Good	Good	PCI 85	PCI 48	Good	Good	PCI 40	PCI 34
	Primary Runway Lighting	MIRL for Community	MIRL	MIRL		MIRL		MIRL	MIRL	MIRL	MIRL	MIRL	MIRL	MIRL
	Primary Runway ALS or REIL	Approach Lighting System or Runway End Indicator Lights	Not UNK or NSTD	UNK	UNK	UNK	UNK	UNK	UNK	UNK	UNK	Not UNK or NSTD	Not UNK or NSTD	UNK
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	No	No	No	No	ASOS	ASOS	No	No	No	ASOS	No**
	Weather Camera	FAA weather camera onsite	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes
	Seasonal Closures	Closed more than 48 hours in multiple years	None	None	None	None	None	None	None	None	None	None	None	None
Airport Planning Measures	Current CIIMP Inspection	3 years for Community	< 3 Yrs	> 3 Yrs	> 3 Yrs	> 3 Yrs	> 3 Yrs	> 3 Yrs (2017)	< 3 Yrs (2021)	> 3 Yrs (2016)	> 3 Yrs (2017)	> 3 Yrs	< 3 Yrs (2021)	< 3 Yrs (2021)
	FAA Compliant GIS Data	Approved AGIS compliant with AC 150/5300-18B	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Community: Quality	Public Restrooms	Public restrooms available	Yes	No	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes
Community: Economic Development	Fuel Available	Fuel available for purchase - type of fuel	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes
	Documented Need for Additional Lea	Documented need for additional lease lots	No	No	No	No	No	No	Yes	No	No	No	No	No
	Documented Need for Aircraft or Veh	Documented need for vehicle or aircraft parking	No	No	No	No	No	No	Yes	No	No	No	No	No
	Unmanned Aerial System (UAS) Integ	Airport connected to UAS corridor	Yes	No	No	No	No	No	No	No	No	No	No	No
	Broadband Connectivity Available	Broadband available through local fiber connection	Yes	No	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes

Remarks on Score Card:

Airport Design: 3of 11 have noncompliant RPZ; 4 of 11 have non-standard condition on ALP; Current Deisgn A/C might be an error in report generation for all facilities

Airport Safety: 6 of 11 do not meet minimum desired rwy length; surface conditions have been neglected at 5 of 11; 2 need MIRL; most need REIL/ALS; certified wx needed at 7; wx cams needed at 4

Airport Planning: 8 need CIMP inspections; AGIS data desired at 5

Community: Public restrooms needed at 6 of 11; fuel needed at 7; GKN has need for lease lots and parking; UAS integration needed at all; broadband needed at 5 of 11

** Tok has a recently installed AWOS that is not yet published and does not reflect in the AASP data

IATP Local NPIAS High-Activity Airport AASP Performance Measures Score Card				
	Performance Measure	Metric Definition	Target Metric	Nenana Muni (ENN)
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	No
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	Yes
Airport Safety Measures	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	PCI 80
	Primary Runway Lighting	MIRL for Local High Activity	MIRL	MIRL
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	ASOS
	Weather Camera	FAA weather camera onsite	Yes	Yes
	Seasonal Closures	Closed more than 48 hours in multiple years	None	None
Airport Planning Measures	Current CIMP Inspection	5 years for Local	< 5 Yrs	> 3 Yrs (2014)
	FAA Compliant GIS Data	Approved AGIS compliant with AC 150/5300-18B	Yes	No
Community: Economic Development	Fuel Available	Fuel available for purchase - type of fuel	Yes	Yes
	Documented Need for Additional Lea	Documented need for additional lease lots	No	No
	Documented Need for Aircraft or Veh	Documented need for vehicle or aircraft parking	No	No
	Unmanned Aerial System (UAS) Integ	Airport connected to UAS corridor	Yes	No

Remarks on Score Card:

Airport Design: ENN does not currently meet any Design measures; Current Deisgn A/C might be an error in report generation for all facilities

Airport Safety: ENN meets all Safety measures

Airport Planning: ENN needs a current CIMP inspection; AGIS data collected for ENN in 2021 not yet reflected in AASP database

Community: UAS integration needed; ENN has fuel available, and this may be a significant contributing factor to the airport's success and planned developments

IATP Local NPIAS Low-Activity Airports AASP Performance Measures Score Card																				
	Performance Measure	Metric Definition	Target Metric	Birch Creek (Z91)	Boundary (BYA)	Chandalar Lake (WCR)	Chicken (CKX)	Chisana (CZN)	Chitina (CXC)	Circle Hot Springs (CHP)	Clear (Z84)	Coldfoot (CXF)	Kantishna (5Z5)	Lake Louise (Z55)	May Creek (MYK)	McCarthy (15Z)	Minchumina (MHM)	Prospect Creek (PPC)	Rampart (RMP)	Tetlin (3T4)	Wiseman (WSM)
Airport Design Measures	RPZ Control/Compliance	RPZ in compliance and property control or easement established	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes	No
	Current Design Aircraft Met	Design aircraft on last approved ALP or Master Plan	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Non-Standard Condition	Non-standard condition documented on current ALP	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	No
Airport Safety Measures	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	Good	Good	Good	Good	Poor	Good	Good	PCI 61	Good	Good	Excellent	Good	Fair	Good	Good	Good	Good	Poor
	Certified Weather Reporting	Certified weather reporting onsite	ASOS, AWSS, or AWOS	No	No	No	No	No	No	No	No	No**	No	No	No	No	AWOS	No	No	No	No
	Weather Camera	FAA weather camera onsite	Yes	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
	Seasonal Closures	Closed more than 48 hours in multiple years	None	None	No Details	No Details	None	No Details	None	None	None	No Details	None	No Details	None	No Details	None	No Details	None	None	No Details
Airport Planning	Current CIIMP Inspection	5 years for Local	< 5 Yrs	> 5 Yrs	> 5 Yrs (2016)	> 5 Yrs	> 5 Yrs (2016)	> 5 Yrs	> 5 Yrs	> 5 Yrs	> 5 Yrs	> 5 Yrs	> 5 Yrs	> 5 Yrs (2015)	> 5 Yrs	> 5 Yrs	> 5 Yrs (2014)	> 5 Yrs	> 5 Yrs	> 5 Yrs (2016)	> 5 Yrs
Community: Economic Development	Documented Need for Additional Lea	Documented need for additional lease lots	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Documented Need for Aircraft or Veh	Documented need for vehicle or aircraft parking	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Remarks on Score Card:

Airport Design: 9 facilities have noncompliant RPZs; Current Deisgn A/C might be an error in report generation for all facilities; 9 facilities have non-standard conditions on ALP

Airport Safety: 4 of 18 facilites need surface improvements; 16 need weather reporting; 14 need weather cams; seasonal closure status needs to be determined at 8 facilities

Airport Planning: all 18 facilities need a current CIMP inspection

Community: there are no documented needs for additional lease lots or parking

** Coldfoot has a recently installed AWOS that is not yet published and does not reflect in the AASP data

IATP Local Non-NPIAS Airports AASP Performance Measures Score Card									
	Performance Measure	Metric Definition	Target Metric	Bradley Sky-Ranch (95Z)	Copper Center 2 (Z93)	Gold King Creek (AK7)	Livengood Camp (4AK)	Summit (UMM)	Tazlina (Z14)
Airport Safety Measures	Primary Runway Condition	Good for gravel, PCI rated 70 or better for paved	70+ PCI or Good+	Fair	Fair	Fair	Good	Good	Good
	Seasonal Closures	Closed more than 48 hours in multiple years	None	None	None	None	None	None	None

Remarks on Score Card:

Local Non-NPIAS facilities only have two performance measures, both in the Airport Safety category

Airport Safety: 95Z, Z93, & AK7 runway surfaces are in fair condition, need improvement to meet measure

Appendix 5: Airport Forecasts Data

Table 61. IATP Region Airport Forecast Average Annual Compound Growth Rates – High, Medium, & Low Scenarios

Forecast Category	Base Yr. Level (2022)	Base Yr. to +1 (2023)	Base Yr. to +5 (2027)	Base Yr. to +10 (2032)	Base Yr. to +15 (2037)	Base Yr. to +18 (2040)
Passenger Enplanements	HIGH MEDIUM LOW	4.2% 2.5% 0.6%	4.6% 3.0% 0.3%	2.7% 1.9% 0.1%	1.9% 1.4% 0.1%	1.6% 1.2% 0.1%
Total Operations	HIGH MEDIUM LOW	3.9% 2.5% 0.6%	3.1% 3.0% 0.3%	1.9% 1.9% 0.1%	1.3% 1.0% 0.1%	1.1% 1.0% 0.1%
Cargo/Mail (deplaned lbs)	HIGH MEDIUM LOW	5.6% 2.5% 0.6%	5.7% 2.9% 0.3%	3.3% 1.9% 0.1%	2.3% 1.3% 0.1%	2.0% 1.2% 0.1%
Based Aircraft	HIGH MEDIUM LOW	3.0% 2.5% 0.6%	5.2% 3.0% 0.3%	3.1% 1.9% 0.1%	2.2% 1.4% 0.1%	1.9% 1.2% 0.1%

Appendix 6: Stakeholder Input Used in IATP Update

Several air carriers, aviation interest groups, and airport management entities were interviewed in early 2023 to determine issues and needs of the IATP aviation system. There was a low level of participation by stakeholders contacted specifically for this IATP update, so this study also made use of stakeholder input provided for other studies conducted recently for specific airports within the IATP region, subregions within the IATP area, and neighboring regions. Interviews were conducted for UTAPS between late 2021 and through 2023 and input relevant to the greater IATP region was evaluated for this study. Additionally, input from other recent studies (the NWATP, Nenana ALP update, Gulkana ALP update, etc.) of significance to the IATP study was incorporated. Input provided by air carriers and airport managers was also considered in the aviation activity forecasts when that input related to current and future aviation trends in the region. A summary of comments provided is presented below by broad topic, in no particular order of priority, and without specifying which individual provided the comment.

Summary of Aviation Issues Identified through Stakeholder Input

- Airports in this region are important for medevac operations, medical travel, delivery of essential goods, supplies, and medicine, firefighting support, recreation and remote access, hunting/guiding/fishing, and mineral exploration and development.
- Rural and emergency landing strips are important due to long distances and poor weather between airports; Paxson and Tazlina provided as specific useful strips.
- A good regional airport, along with several smaller community airports at intervals along major flight routes, is essential to provide access and flight safety for those traveling by aircraft.
- Customs at Northway – limited availability of staff to clear aircraft, interest in alternative way or location to deal with customs.
- Airports provide access to the large expanses of roadless areas of the state – unmaintained airstrips that become unusable lead to less and less of the state being accessible.
- Unmanaged brush/vegetation encroachment has been cutting off access to many sites in the state – Eureka Creek given as an example.
- More of the state is becoming accessible by helicopter only – very expensive, very limited pool of people who could use this mode.
- Aviation interest groups often prioritize issues at airports where major carriers operate and EAS/Bypass Mail programs are in effect – hoping this plan will elevate issues of importance to smaller operators and private pilots.
- Demand for fuel across the region; limited availability currently.
- Several airports serve as alternate landing areas for FAI in inclement weather (Bradley Sky-Ranch, Nenana Muni named).
- Better approaches, new approaches desired. RNAV approach at McCarthy, lower minimums at Tok specified.
- Medevac providers would likely make greater use of their Learjets if runways were 5,000 ft or longer.
- The large sections and use of military airspace in the region is a major concern to some operators – can cause extensive delays or costly re-routes.
- Desire for IFR corridors through military airspace to create fewer civilian flight disruptions.
- Firefighting operations will continue at Tanacross until it becomes unusable – hoping that Tok gets improved to accommodate a relocation of firefighting services (wildland would like a minimum length of 5,000 ft, another carrier recommended 4,000 ft).
- Concerns that wildland firefighting operations, if moved to new location(s), may negatively impact carrier and private pilot activity.
- Gravel/turf runways at several airports can see more activity than the paved runway during hunting season.
- 3,000 ft minimum runway length desired by several carriers.

- 4,000 ft minimum runway length with an instrument approach and fuel services would be ideal at regionally important facilities.
- Beyond emergency medical needs, airports support transporting medical services and supplies in a timely manner.
- DOT&PF leasing practices and prices are prohibitive to some operators.

Summary of Future Aviation Trends Identified through Stakeholder Input

- Carriers seeing increased aviation recreational and tourism demand, expect the trend to stay positive.
- One medevac carrier intends to retire Lear 35s from fleet.
- Most carrier fleets remaining largely stable, a few upgrades and fleet additions expected, most within operational demands of existing fleet.
- Consolidation of larger operators followed by new influx of smaller operators (NWATP).
- Hopes that the government does not start changing things. Keep programs the same (NWATP).
- Pilot (qualified pilot) shortage (NWATP).
- Oil price fluctuations and increases in costs for fuel, parts, insurance, etc. (NWATP).
- Less traffic in the bush, village residents may be traveling less (NWATP).
- Anticipated increase in freight movement due to rise of Amazon and other online retailers (NWATP).
- Expectation that air traffic will remain robust (NWATP).

Interviews Conducted for IATP – Air Carriers/Air Taxis/Medevac Companies/Aviation Organizations

- Aircraft Owners and Pilots Association, Tom George, Alaska Regional Manager, 907.388.9955
- Aviation Risk Solutions, Dave Wilson, Chief Pilot/Owner, 907.841.1340
- Copper Valley Air Service, Martin Boniek, Chief Pilot/Owner, 907.822.4200
- Reeve Air, Mike Reeve, Owner, 907.250.4766
- Wrangell Mountain Air, Austin Robel, Director of Operations, 907.302.6230
- Interviews Conducted for IATP – Airport Sponsors/Managers/Owners
- Alyeska Pipeline Company, Renier Swart, Airport Manager, 907.787.8959
- Bradley Sky-Ranch, James Bradley, Airport Manager, 907.488.9792
- Bureau of Land Management, Rhonda Williams, Airport Manager (Black Rapids & Paxson), 907.822.3217
- City of Delta Junction, Jimmy Wayne Musgrove, Airport Manager, 907.460.6688
- Tazlina/Smokey Lake Seaplane Base, Bonny Wikle, Airport Manager, 907.822.3061

Interviews Conducted for IATP – DOT&PF

- DOT&PF Maintenance & Operations, Jason Ludington, Jeff Russell, Chad Heller, Sam Jennings, & Daniel Schacher
- DOT&PF Northern Region Planning, Judy Chapman & Sara Lucey
- DOT&PF Statewide Aviation, Troy LaRue, Rebecca Douglas, Andrew Warner, & Ryan Marlow

Other Organizations Contacted for IATP

- FAA Air Traffic Organization, Kyle Christiansen, Senior Aeronautical Specialist, 907.841.6764
- U.S. Customs and Border Protection, Leopoldo Reyez, Assistant Area Port Director, 907.271.2681

Interviews Conducted for Upper Tanana Airport Planning Study (2021-2023), Used to Support IATP

- 40-Mile Air, Leif Wilson, Owner
- Aircraft Owners and Pilots Association, Tom George, Alaska Regional Manager

- Alaska Airman's Association, Adam White, Government & Legislative Affairs Advocate
- Doyon Limited, Jamie Marunde, VP of Lands
- DNR Division of Forestry and Fire Protection, Jason Jordet, Fixed Wing Aviation Manager
- LifeMed Alaska, Ricci Coon, Aviation Program Manager
- Reeve Air, Mike Reeve, Owner
- Tok Air Service, Zack Knaebel, Chief Pilot/Owner
- Tok Ambulance/EMS, Jack Rutledge
- Warbelow's Air Ventures. Daryn Young, Director of Operations

Organizations Attempted to Contact for IATP Who Did Not Participate or Were Unreachable

- Alaska Department of Fish and Game, Bruce & Michelle Heaton, Airport Management (Tolsona Lake)
- Alaska Land Exploration, LLC, Alex Shapiro, Owner/Director of Operations
- Birchwood Aircraft Services, Eric Fox, Owner
- Bureau of Land Management, Lanore Heppler, Airport Management (Tanacross)
- Bushwacker Air Service
- Cantwell Airport, Ray Atkins, Airport Manager
- City of Nenana, Dan Smith, Airport Manager (did provide input for Nenana ALP Update)
- Coyote Air, Dirk Nickish
- Department of Natural Resources, Diana Leinberger, Airport Management (Eva Creek)
- Department of Natural Resources, Jacqueline Cheek, Airport Management (Quail Creek)
- Ellis Air Taxi
- Everts Air, Mike Allen & Matt Stone (did provide input for 2020 NWATP Tech Memo)
- Fly Denali, Eric Rovey, Chief Pilot
- Golden Eagle Outfitters, Jim, Jesse, & Jared Cummins, Owners/Operators
- Guardian Flight, Riley Little (did provide input for 2020 NWATP Tech Memo)
- Kantishna Air Taxi, Greg LaHaie, Owner/Chief Pilot
- Lake Louise SPB, Dennis Oakland, Airport Manager
- Mt. Hayes Air, Gary Hall, Owner/Operator
- National Park Service, Coal Creek/Yukon-Charley Rivers, Superintendent
- National Park Service, Stephanie Ford, McKinley/Stampede, Superintendent
- National Park Service, Nyssa Landers, Glacier Creek & Jakes Bar, Superintendent
- Native Village of Venetie Tribal Government, Eddie Frank, Venetie Airport Manager
- Native Village of Venetie Tribal Government, Jonathan Johns, Arctic Village Airport Manager
- Quicksilver Air, Inc., Rick Swisher, Owner/Director of Operations
- Shadow Aviation
- Suburban Air Express, Inc., Mark Meyer
- Swift Fork Air
- Temsco Helicopters, Inc.
- Trinity Air, Inc., Kristy & Karl Braun, Owners/Pilots
- U.S. Army HQ 172 Infantry Brigade, Allen AAF Management
- Wright Air Service, Everett Leaf (did provide input for 2020 NWATP Tech Memo)
- Yukon Air Service, Kirk Sweetsir, Owner/Pilot

Appendix 7: Broadband Connectivity at IATP Airports

Table 62 shows the broadband connectivity, as reported by the AASP Performance Measures and compared with how the airport's associated community is reported in the 2021 *Governor's Task Force on Broadband Final Report*. AASP Performance Measures do not capture the broadband status for all airports, and it is unknown what the AASP uses as a data source. The status does not always match between the AASP and the broadband task force report.

Broadband connectivity per AASP performance measures is reported as:

- **Yes:** Broadband connectivity is a performance measure for this airport classification, and the airport does have broadband connectivity
- **No:** Broadband connectivity is a performance measure for this airport classification, and the airport does not have broadband connectivity
- **Not a PM:** Broadband connectivity is not a performance measure for this airport classification and is not reported through the AASP
- **N/A:** The AASP has no performance measures for this airport classification

Broadband connectivity per the 2021 *Governor's Task Force on Broadband Final Report* is reported as:

- **25/3 Service:** The community is a Census-Designated Place (CDP) in Alaska's Division of Community and Regional Affairs (DCRA) community database, and it has internet connectivity of at least 25 Mbps download and 3 Mbps upload speeds with latency suitable for real-time applications
- **Unserved:** The community is a CDP in Alaska's DCRA community database, and it lacks internet connectivity of at least 25 Mbps download and 3 Mbps upload speeds with latency suitable for real-time applications
- **Not a CDP:** The community is not a CDP listed in Alaska's DCRA community database
- **No Pop:** The community is a CDP listed in Alaska's DCRA community database, but it has no population and is not included in the 2021 broadband task force report

Table 62. Broadband Connectivity at IATP Airports

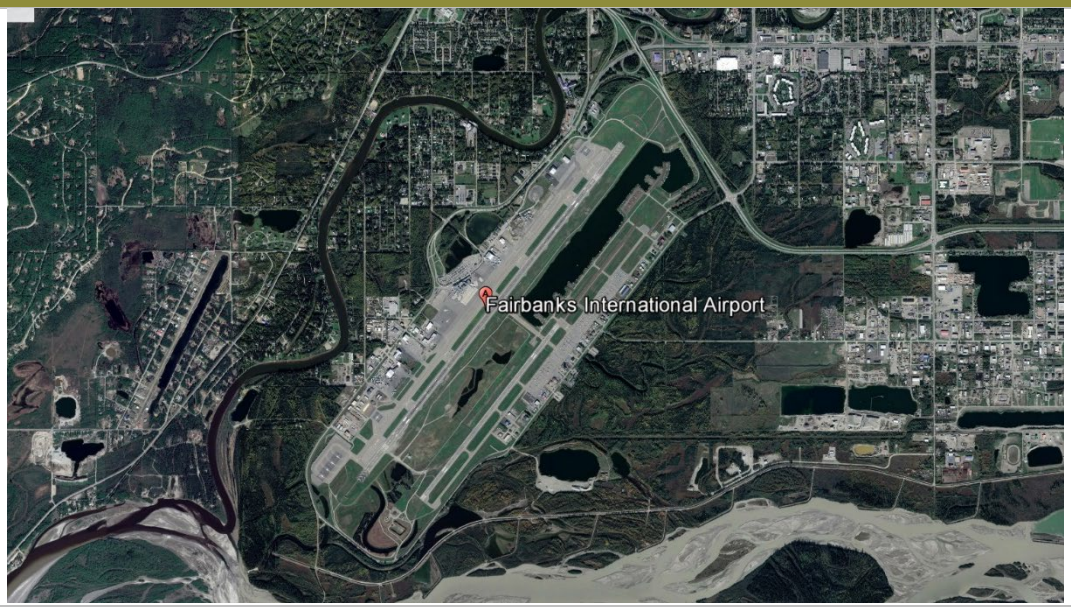
Community	Airport	AASP Classification	Broadband Connectivity per AASP Performance Measures	Broadband Connectivity per 2021 Task Force on Broadband Report
Arctic Village	Arctic Village	Community Off-Road	No	Unserved
Beaver	Beaver	Community Off-Road	Yes	Unserved
Birch Creek	Birch Creek	Local NPIAS - Low	Not a PM	Unserved
Black Rapids	Black Rapids	Landing Strip	N/A	Not a CDP
Boundary	Boundary	Local NPIAS - Low	Not a PM	No Pop
Cantwell	Cantwell	Landing Strip	N/A	25/3 Service
Central	Central	Community On-Road	No	Unserved
Chalkyitsik	Chalkyitsik	Community Off-Road	No	Unserved
Chandalar Lake	Chandalar Lake	Local NPIAS - Low	Not a PM	Not a CDP
Chicken	Chicken	Local NPIAS - Low	Not a PM	Unserved
Chisana	Chisana	Local NPIAS - Low	Not a PM	Unserved
Chistochina	Chistochina	Community On-Road	Yes	25/3 Service
Chitina	Chitina	Local NPIAS - Low	Not a PM	25/3 Service
Circle	Circle City	Community On-Road	No	Unserved
Circle Hot Springs	Circle Hot Springs	Local NPIAS - Low	Not a PM	No Pop
Clear (Anderson)	Clear	Local NPIAS - Low	Not a PM	25/3 Service
Coldfoot	Coldfoot	Local NPIAS - Low	Not a PM	Unserved
Copper Center	Copper Center 2	Local Non-NPIAS	Not a PM	25/3 Service
Delta Junction	Delta Junction	Community On-Road	No	Unserved

Community	Airport	AASP Classification	Broadband Connectivity per AASP Performance Measures	Broadband Connectivity per 2021 Task Force on Broadband Report
Eagle	Eagle	Community On-Road	Yes	Unserved
Eureka Creek	Eureka Creek	Landing Strip	N/A	Not a CDP
Eva Creek	Eva Creek	Landing Strip	N/A	Not a CDP
Fairbanks	Chena River	Landing Strip	N/A	25/3 Service
Fairbanks	Gold King Creek	Local Non-NPIAS	Not a PM	Not a CDP (airport loc)
Fairbanks	Fairbanks Intl	Small Hub	Yes	25/3 Service
Fort Yukon	Fort Yukon	Regional Hub	No	Unserved
Glacier Creek	Glacier Creek	Landing Strip	N/A	Not a CDP
Gulkana	Gulkana	Community On-Road	Yes	25/3 Service
Healy	Healy River	Community On-Road	Yes	25/3 Service
Horsfeld	Horsfeld	Landing Strip	N/A	Not a CDP
Kantishna	Stampede	Landing Strip	N/A	Not a CDP
Kantishna	Kantishna	Local NPIAS - Low	Not a PM	Not a CDP
Lake Louise	Lake Louise SPB	Landing Strip	N/A	25/3 Service
Lake Louise	Lake Louise	Local NPIAS - Low	Not a PM	25/3 Service
Lake Minchumina	Minchumina	Local NPIAS - Low	Not a PM	Unserved
Livengood Camp	Livengood Camp	Local Non-NPIAS	Not a PM	Unserved
Manley Hot Springs	Manley Hot Springs	Community On-Road	No	Unserved
May Creek	May Creek	Local NPIAS - Low	Not a PM	Not a CDP
McCarthy	Jakes Bar	Landing Strip	N/A	Not a CDP (airport loc)
McCarthy	McCarthy	Local NPIAS - Low	Not a PM	25/3 Service
McKinley Park	McKinley Ntl Park	Landing Strip	N/A	Not a CDP
Minto	Minto Al Wright	Community On-Road	No	Unserved
Nenana	Nenana Muni	Local NPIAS - High	Not a PM	Unserved
North Pole	Bradley Sky-Ranch	Local Non-NPIAS	Not a PM	25/3 Service
Northway	Northway	Community On-Road	Yes	Unserved
Paxson	Paxson	Landing Strip	N/A	Unserved
Prospect Creek	Prospect Creek	Local NPIAS - Low	Not a PM	Not a CDP
Quail Creek	Quail Creek	Landing Strip	N/A	Not a CDP
Rampart	Rampart	Local NPIAS - Low	Not a PM	Unserved
Stevens Village	Stevens Village	Community Off-Road	No	Unserved
Summit	Summit	Local Non-NPIAS	Not a PM	Not a CDP
Tanacross	Tanacross	Landing Strip	N/A	25/3 Service
Tanana	Ralph M Calhoun Meml	Community Off-Road	No	Unserved
Tazlina	Tazlina/Smokey Lake	Landing Strip	N/A	25/3 Service
Tazlina	Tazlina	Local Non-NPIAS	Not a PM	25/3 Service
Tetlin	Tetlin	Local NPIAS - Low	Not a PM	25/3 Service
Tok	Tok Junction	Community On-Road	Yes	25/3 Service
Tolsona Lake	Tolsona	Landing Strip	N/A	25/3 Service
Totatlanika River	Totatlanika River	Landing Strip	N/A	Not a CDP
Venetie	Venetie	Community Off-Road	No	Unserved
Wiseman	Wiseman	Local NPIAS - Low	Not a PM	Unserved
Yukon Charley Rivers	Coal Creek	Landing Strip	N/A	Not a CDP

Appendix 8: Aerial Photo Log of IATP Airports by AASP Classification

Aerial photos sourced primarily from Form 5010 Airport Master Record safety data inspections, available through the AASP facilities database (https://internal.alaskaasp.com/Facilities/Default.aspx).

SMALL HUB FACILITIES

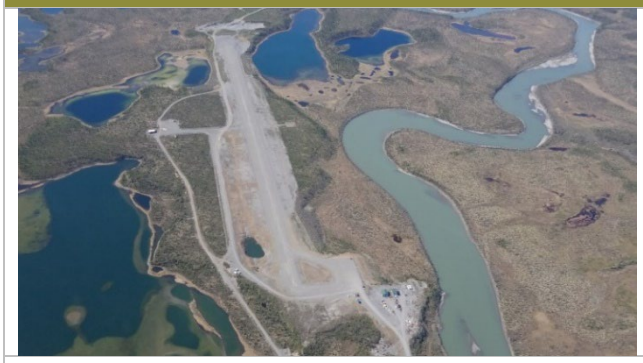


Fairbanks International (FAI) 2018

REGIONAL HUB FACILITIES

Fort Yukon (FYU) 2021

COMMUNITY OFF-ROAD FACILITIES



Arctic Village (ARC) 2020

Beaver (WBQ) 2020

Chalkyitsik (CIK) 2021

Ralph M Calhoun (TAL) 2023

Stevens Village (SVS) 2020

Venetie (VEE) 2023

COMMUNITY ON-ROAD FACILITIES

Central (CEM) 2016

Chistochina (CZO) 2019

Circle City (CRC) 2022

Delta Junction (D66) 2020

Eagle (EAA) 2019

Gulkana (GKN) 2019

Healy River (HRR) 2020

Manley Hot Springs (MLY) 2015

COMMUNITY ON-ROAD FACILITIES

Minto Al Wright (51Z) 2020

Northway (ORT) 2020

Tok Junction (6K8) 2020

LOCAL NPIAS HIGH-ACTIVITY FACILITIES

Nenana Muni (ENN) 2020

LOCAL NPIAS LOW-ACTIVITY FACILITIES

Birch Creek (Z91) 2021

Boundary (BYA) 2022

Chandalar Lake (WCR) 2020

Chicken (CKX) 2022

Chisana (CZN) 2022

Chitina (CXC) 2020

Circle Hot Springs (CHC) 2022

Clear (Z84) 2020

LOCAL NPIAS LOW-ACTIVITY FACILITIES

Coldfoot (CXF) 2017

Kantishna (5Z5) 2021

Lake Louise (Z55) 2019

May Creek (MYK) 2015

McCarthy (15Z) 2015

Minchumina (MHM) 2021

Prospect Creek (PPC) 2023

Rampart (RMP) 2020

LOCAL NPIAS LOW-ACTIVITY FACILITIES

Tetlin (3T4) 2015

Wiseman (WSM)

LOCAL NON-NPIAS FACILITIES

Bradley Sky-Ranch (95Z) 2020

Copper Center 2 (Z93) 2020

Gold King Creek (AK7) 2020

Livengood Camp (4AK) 2020

Summit (UMM) 2020

Tazlina (Z14) 2019

LANDING STRIPS

Black Rapids (5BK) 2020

Cantwell (TTW) 2020

Chena River SPB (2Z5) 2020

Coal Creek (L20) 2022

Eureka Creek (2Z2) 2020

Eva Creek (2Z2) 2020

Glacier Creek (KGZ) 2022

Horsfeld (4Z5) 2022

LANDING STRIPS

Jakes Bar (AK0) 2022

Lake Louise Seaplane Base (2020)

McKinley Ntl Park (INR) 2020

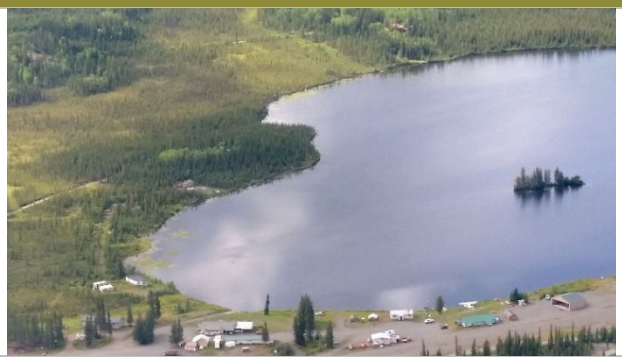
Paxson (PXK) 2022

Quail Creek (20K)

Stampede (Z90) 2013

Tanacross (TSG) 2020

Tazlina/Smokey Lake (5AK) 2020

LANDING STRIPS	
	
Tolsona Lake (58A) 2020	*Totatlanika River (9AK) 2006*

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1.0 AVIATION COST ESTIMATES & FUNDING

The *IATP Technical Memorandum 2 - Aviation Transportation: Conditions, Issues, and Trends* concluded by identifying recommendations for aviation projects, plans, studies, administrative actions, and on-going policy engagement. The recommendations of the IATP are intended to address major local transportation needs that have widespread importance across the region. The project and policy recommendations are in line with the state long-range transportation goals of safety, state of good repair, economic development, resiliency, and sustainability. The aviation recommendations additionally align with FAA priorities and goals, identified in recently published FAA plans, with specific support for increased weather reporting at airports and en route, additional weather cameras, and development of new IAPs.

This section provides an overview of the cost considerations, level of effort, responsible agencies/parties, and expected funding sources for each of the recommendations. Many of the recommendations are administrative in nature and thus have no capital cost associated with the work – these are not no-cost action items, as personnel time is still required, but they are more appropriately recommended for inclusion in work practices and responsibilities rather than a capital improvement plan. The various recommendations that do belong in a capital improvement plan (CIP) are discussed in the sections below and summarized in the final IATP Aviation CIP at the conclusion of this chapter.

1.1 Administrative Recommendations

The Administrative Recommendations consist of administrative actions the DOT&PF is advised to take, possibly in coordination with other agencies or parties, to improve the IATP area's aviation system. There are no capital costs associated with these recommendations, but personnel time is needed to accomplish them. A brief description of the level of effort needed and the agency (or agencies) responsible for each recommendation is included below.

AIRPORT/LOCATION	RECOMMENDATION & LEVEL OF EFFORT	AGENCY	ESTIMATED COST
Healy Lake Airport	**Register airport with FAA and consider adding to NPIAS**. In coordination with Healy Lake Village, register the airport with the FAA through the ADIP 7480 form so the facility gets its own unique FAA Loc ID and appears in official charts and publications.	DOT&PF - Statewide Aviation & Healy Lake Village	Administrative Only
Eureka Creek (2Z2)	**Deactivate**. Deactivate the facility through the ADIP 7480 process. The facility is in the Public Domain so there is no other responsible agency to take action on this facility.	DOT&PF - Statewide Aviation	Administrative Only
Eva Creek (2Z3)	**Work with facility owner (DNR) to have critical improvements made that will restore this facility to a safely usable condition.** In coordination, DOT&PF and DNR will establish a plan and identify the responsible party to rehabilitate the runway.	DOT&PF - Statewide Aviation & DNR	Administrative Only
Tetlin (3T4)	**Investigate why Tetlin (3T4) did not have an IAP developed after the 2013 WAAS survey was completed, to determine whether the airport was deemed to be unsuitable for an RNAV approach or the approach procedure development has not yet been requested.** Determine eligibility for Tetlin to request development of an RNAV approach from 2013 WAAS survey results.	DOT&PF - Northern Region	Administrative Only

1.2 Programmatic & Funding Recommendations

The Programmatic and Funding recommendations are broad actions to be taken at the planning level to ensure that critical capital needs are identified and incorporated into project planning. The IATP recommends that lighting and wildland firefighting support needs be added to master "Needs" lists (ideally, on the AASP internal website) and considered when developing project packages for airports. Backcountry airstrip preservation needs of the region are a distinct programming and funding effort. This work would not be part of DOT&PF and FAA planning, but the process of backcountry airstrip project development would be similar – the work group would identify airports at which improvements are desired, capital and maintenance needs of that airport, funding sources for accomplishing the work, and parties to conduct to the work.

PROGRAM	RECOMMENDATION, LEVEL OF EFFORT, & FUNDING CONSIDERATIONS	AIRPORTS/LOCATION	AGENCY	ESTIMATED COST
DOT&PF Statewide 10-year Lighting Priority Assessment	**Continue to program and pursue funding for lighting projects already identified in DOT&PF's 10-year assessment and in Nenana's ALP Update**. Keeping lighting systems operational is of paramount importance. Lighting projects are rarely standalone projects and are typically bundled with other airport improvements to maximize the use of construction equipment, materials, and personnel that must mobilize to remote, mostly off-road airport sites for any project. Standalone lighting projects may be economical and justified at on-road airports, such as Eagle and Nenana, where the effort to bring in equipment, materials, and people is much more economical. Chalkyitsik and Nenana Muni lighting needs are anticipated to be accomplished with FY24/FY25 grant work. The lighting cost estimate is for airport lighting, inclusive of runway, taxiway, and apron.	Beaver (WBQ) Birch Creek (Z91) Chalkyitsik (CIK) Eagle (EAA) Gulkana (GKN) Manley Hot Springs (MLY) Minchumina (MHM) Minto Al Wright (51Z) Nenana Muni (ENN) Northway (ORT) Ralph M Calhoun Meml (TAL) Rampart (RMP) Stevens Village (SVS) Tetlin (3T4)	DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg City of Nenana DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg	$ 1,250,000 $ 1,200,000 $ 1,162,890 $ 721,000 $ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,431,260 $ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,250,000
Backcountry Airstrip Work Group	**In partnership with aviation interest groups, encourage the development and further work of a Backcountry Airstrip Work Group to explore volunteer/stakeholder maintenance of critical landing strips**. The initial work group, formed under the AASP, partnered with the FAA, Alaska Airmen's Association (AAA), Aircraft Owners and Pilots Association (AOPA), Recreational Aviation Foundation (RAF), and Alaska Air Carriers Association (AACA) to identify issues impacting backcountry airstrips to help guide future preservation decisions. The follow-on work would include establishing how a voluntary work force would be formed, identifying and developing the authorities and agreements needed with airport owner agencies, developing cost and work effort estimates, and identifying potential funding	Areawide Airports with greatest needs: Eva Creek (2Z3) Glacier Creek (KGZ) Jakes Bar (AK0) Quail Creek (20K) Totatlanika River (9AK)	DOT&PF - Statewide Aviation & Volunteer Group	Administrative Only (for DOT&PF) Costs of improvement efforts would be determined and borne by the Volunteer Group & its funding source(s)

	sources for preservation work at backcountry airstrips. It is unlikely that this effort would be funded with AIP money. DOT&PF's involvement would be part of Statewide Aviation Policy Planning functions. The bulk of the work would fall to a volunteer group, yet to be formed, that would carry out the improvements needed at backcountry airstrips. The Recreational Aviation Foundation (RAF) may be an ideal group to work with, as their mission is to preserve, improve, and create airstrips for recreational access, and their website indicates they have previously done work at Jakes Bar (AK0).			
Wildland Firefighting	**Ensure there are plans in place to maintain wildland firefighting operations in the region at a safe and serviceable level.** When making programming & funding decisions, DOT&PF should keep in mind the importance and high priority of maintaining in good condition the facilities used in wildland firefighting support. Capital improvements needed for each of the DOT&PF Northern Region facilities used to support wildland firefighting are included elsewhere in these recommendations.	Areawide Specifically: Central (CEM) Fort Yukon (FYU) Minchumina (MHM) Tok Junction (6K8)	DOT&PF - N Reg	Administrative Only

1.3 Policy & Planning Engagement

Policy and Planning Engagement recommendations include actions to be taken – primarily by DOT&PF – on state or federal legislation, long-range plans, and other policy that impacts airport development and use of the aviation system.

PLAN/POLICY TOPIC	RECOMMENDATION & LEVEL OF EFFORT	AGENCY	ESTIMATED COST
Raise AIP Entitlement Funding for Nonprimary NPIAS Airports	**Engage with policy makers and the FAA to elevate the entitlement funding for nonprimary NPIAS airports**. As part of its dedicated work with decision-makers to advocate for Alaska's priorities and needs and to get appropriate funding and authorization language included in future appropriations and legislation, the DOT&PF Division of Statewide Aviation will continue to engage with policy makers and the FAA to elevate the entitlement funding for nonprimary NPIAS airports.	DOT&PF - Statewide Aviation	Administrative Only
Aviation Master Plans & Airport Layout Plans	**Consider space for and facilitation of fuel being made available at airports**. The AASP performance measures specify fuel availability as a target metric for Hub, Community, and Local NPIAS High-Activity airports. Only six of the 20 airports in these classifications currently have fuel available. When developing Aviation Master Plans and Airport Layout Plans, consider space for and facilitation of fuel being made available at	DOT&PF - N Reg	Administrative Only

	airports. DOT&PF has a role in ensuring adequate and appropriate space for fuel and working with private businesses to establish fuel supply. Private industry holds the role of providing fuel.		
UAS, Broadband	**Remain active in broadband roll-out, especially in support of UAS integration.** Follow and work with the Governor's Task Force on Broadband to encourage broadband at all 17 Community and Regional Hub airports in the region. Broadband supports communication and weather reporting, which improve aviation safety and support UAS/Advanced Air Mobility. Development and installation of broadband is not a DOT&PF responsibility; funding comes from the BIL, separate from AIP, and funds are overseen by the U.S. Department of Commerce. Additionally, Statewide Aviation and Regional Planners will coordinate and communicate needs of UAS/Advanced Air Mobility to ensure the weather reporting and communications infrastructure that support this use are adequately considered in airport project planning and programming.	DOT&PF - Statewide Aviation	Administrative Only
Airspace Changes	**Continue participation in ACMAC and engagement in airspace issues, proposed changes.** Echoing a sentiment from the 2010 IATP, DOT&PF needs to be diligent in identifying military airspace impacts on the civilian population and economy and participating in ACMAC efforts to find workable compromises.	DOT&PF - Statewide Aviation	Administrative Only
IAPs	**Pursue development of IAPs in coordination with installing weather source systems at Birch Creek (Z91), Circle City (CRC), McCarthy (15Z), and Stevens Village (SVS).** Requesting IAP development is an airport sponsor's role, but the development of IAPs is a function of FAA's Air Traffic Organization (ATO). DOT&PF would need to request IAP development for each airport at which an IAP is desired. Prior to making the request, DOT&PF must have conducted a WAAS or aeronautical survey at the requested airport. IAP development may also hinge on availability of a weather reporting system at the airport. DOT&PF's capital and survey responsibilities are captured in other recommendations and in the CIP at the conclusion of this chapter. This recommendation is the action needed to formally request of FAA's ATO the development of IAPs to get them in FAA's work pipeline. IAP development is reported to take three to five years to accomplish once a request is received by FAA.	DOT&PF - N Reg & FAA ATO	Administrative Only
AASP	**Include IAP needs and requests from this study in the upcoming AASP special study (IAPs Statewide).** The upcoming special study, to be conducted under the AASP, will specifically consider IAPs statewide and create recommendations and processes by which new and improved IAPs may be requested and developed.	DOT&PF - N Reg & DOT&PF - Statewide Aviation	Administrative Only
Weather Reporting	**Monitor status of AWOS, VWOS, and other weather reporting systems; pursue opportunities to install these systems**. The primary action for this recommendation is to monitor the FAA reauthorization (on extension through May 10, 2024 as of the writing of this chapter) for language regarding AWOS and VWOS. The language ultimately included in FAA reauthorization will dictate what secondary actions can be taken to pursue opportunities to install these weather reporting systems.	DOT&PF - Statewide Aviation & FAA	Administrative Only

	One of DOT&PF's LRTP Performance Measure is "Increased number of rural airports with weather reporting, navigation, and communication equipment." One of the primary focuses of the FAASI FY21 report is "the requirement for additional and enhanced weather reporting capability via ground-based systems such as AWOS and VWOS." The report recommends the FAA continue focusing on new-installation AWOS units (at airport sponsor request) and optimizing the transfer process and timeline. The purchase, installation, and turnover to the FAA of the first set of eight AWOS units in Alaska was successfully accomplished. The purchase and installation of additional AWOS units hinges on appropriate language in the FAA reauthorization bill that allows continuation of the practice of the airport sponsor purchasing AWOS units with AIP funding then turning the unit over to the FAA after installation. VWOS units may become a more cost-effective alternative to AWOS units, pending successful testing and development by the FAA. Healy River (HRR) is a test site in the IATP region. VWOS are still in FAA's business plan phase (a 5-year period), after which they will move into the 3-year budgeting process. FAA reports that VWOS testing and development continues to show promising results. The next steps for this system involve the FAA seeking funding for the investment analysis – the phase in which the VWOS system undergoes the FAA process to become an approved weather source and in which FAA pursues funding for development and installation of additional systems. The earliest FAA expects to receive such funding is FY25.		
Flight Service Two-Way Texting Service & eSRS	**Share information with stakeholders about Flight Service Two-Way Texting Service and eSRS.** DOT&PF can support an FAA flight safety initiative by promoting these services provided by FSS through the AASP website, newsletters, and stakeholder engagement and outreach. Both the Two-Way Texting and eSRS services provide improved flight tracking and emergency response.	DOT&PF - Statewide Aviation & DOT&PF - N Reg	Administrative Only

1.4 Recommended Plans & Studies

Recommended Plans and Studies are the specific, near-term planning efforts recommended to further define airport development needs at specific airports or sub-areas. Many of these plans and studies are already underway, and it will be important for the results of those efforts to consider regional priorities identified by the IATP and to integrate the ultimate recommendations of these additional plans into the regional aviation system inventory and characterization.

PLAN/STUDY TOPIC	RECOMMENDATION	LOCATION/AIRPORT	AGENCY	ESTIMATED COST
Regionally Significant Airports	**Further study (Master Plans or expanded Airport Layout Plan updates) of specific airports as regionally significant facilities.**	Tok Junction (6K8) Gulkana (GKN)	DOT&PF – Northern Region DOT&PF – Northern Region	$ 750,000 N/A – Study Complete

	Tok Junction is the airport recommended by DOT&PF's *Upper Tanana Airport Planning Study* to be developed into a regional facility. The next phase in pursuing development of Tok as a regional airport is preparation of a Master Plan and additional public and user engagement to investigate several development considerations more fully. The cost presented here is just the estimated cost of completing a Master Plan and does not include any capital project work. Gulkana's ALP update was underway when the Aviation Tech Memo was developed and is now nearing completion, anticipated for final publication in early 2024. The plan specifies ultimate development goals for GKN, which are captured in the Aviation CIP at the conclusion of this chapter.			
Denali Area Airport Planning Study	**Continue and complete on-going planning study.** From the RFP: The communities and Alaska Native Corporation Doyon, Limited have great interest in an airport configuration in the borough that supports local needs, tourism, and industry. Infrastructure needs in this area are changing, and the study will analyze airports in the Denali Borough to identify and propose alternatives for the most suitable location for future aviation investment in the area. Facilities included in the analysis include Clear, Gold King Creek, Healy River, Kantishna, and Summit, but the analysis may include consideration of a completely new airport location. The study is under contract and underway. Cost estimate is from the RFP.	Denali Area	DOT&PF – Northern Region	$ 250,000 - $ 500,000
Lighting System Evaluation & Replacement Plan	**Evaluate aging lighting systems that are not currently included in DOT&PF's 10-year priority list or other sponsor's needs lists and evaluate need for replacement.** Although evaluation of lighting system needs at these airports is the first step, it is most likely that each of the airports will be determined as needing lighting system rehabilitation or replacement due to the estimated age of the lighting systems and remarks in inspection reports. Cost estimates are for the anticipated lighting system replacements, although lighting work would almost certainly be packaged with other airport	Arctic Village (ARC) Central (CEM) Circle City (CRC) Clear (Z84) Venetie (VEE)	Venetie Tribal Government DOT&PF – Northern Region DOT&PF – Northern Region DOT&PF – Northern Region Venetie Tribal Government	$ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,250,000 $ 1,250,000

	improvements and not occur in isolation (i.e., the lighting cost would be just one component of total airport work).			
Relocation of Wildland Firefighting Seasonal Tanker Base	**Evaluation needed for Division of Forestry to relocate its seasonal tanker base for Wildland Firefighting.** The evaluation is an administrative action to be taken by the State of Alaska Division of Forestry (DOF). If DOF decides to relocate its operations from Tanacross to Tok Junction (6K8), this may prompt various airport improvement needs. This effort should be tracked simultaneously with the Master Plan development for Tok Junction.	Tok Junction (6K8)	State of Alaska Division of Forestry	Administrative Only

1.5 Recommended Capital Projects

Recommended Capital Projects are the physical improvements to airport infrastructure recommended by the IATP to improve performance of the regional aviation system, as a whole. The IATP identified runway extensions, runway surface improvements, lighting systems, and weather reporting systems as critical elements of airport infrastructure that contribute to the robustness and efficient operation of the region's aviation system. Planning level cost estimates are provided for each of these elements in the table that follows, but airport construction work most typically combines a number of airport needs into a single project to maximize the time on site and the significant cost of mobilizing construction equipment, materials, and personnel to remote, mostly off-road locations. The Aviation CIP at the conclusion of this chapter presents the recommended project packages for each IATP airport identified as having a need for improvements that would contribute to a better-performing regional aviation system.

1.5.1 Runway Extensions

Six of the IATP airports are recommended by this plan to be considered for runway extensions to meet AASP performances measures for their classification. All six of these airports are Community On-Road class airports in the AASP, with a recommended minimum runway length of 3,300 ft, per their classification performance measure. There are nuances for each of these airports that influence their ultimate recommended length and the feasibility of them being extended.

- Central (CEM) and Circle City (CRC) are 33 road miles apart, and both would not qualify to receive AIP funding for longer runways. The FAA would not provide funding for a capital investment of this magnitude for two airports so close together, on the road system. It would be assumed that one of these runways extended to 3,300 ft or greater would adequately serve the surrounding population in its Community class role. CEM and CRC are both part of the EAS program, but CEM is also one of the facilities currently used in wildland firefighting support. Of the two, there may be a stronger chance that CEM would be considered for a runway extension than CRC.
- Chistochina (CZO) and Delta Junction (D66) are Community class airports in the AASP, but neither of these airports is included in the NPIAS, which makes them currently ineligible for AIP funding. Unless these airports become part of the NPIAS, runway extensions are unlikely to happen due to the enormous cost that would be borne by the airport owners without FAA funding assistance.

- Healy River (HRR) will get further consideration of its needs in the underway Denali Area Airport Planning Study. This study will give more specific consideration to the airports and aviation sub-system in the Denali Borough and produce recommendations for airport improvements and developments to best serve this area.
- Tok Junction (6K8) has already been identified by the UTAPS report as the airport to be considered for development into a regional facility. As a Community class airport, the IATP recommends 6K8 be extended to at least 3,300 ft, but the UTAPS recommends that it be developed to a minimum length of 4,050 ft. To meet AASP Regional Hub performance measures, 6K8 would need a minimum runway length of 5,000 ft (which is also recommended by UTAPS as a second phase of development to meet wildland firefighting needs), but this additional length may not be AIP eligible. The cost estimate from the final UTAPS report to extend 6K8's runway to 4,050 ft is presented in the table below.

Ultimately, the runway length needed (3,300 being the recommended minimum) is determined through aviation demand forecasting, and AIP funding participation in runway extensions requires justification that the desired runway length is needed by the aircraft using or forecasted to use the airport.

PROJECT	LOCATION/AIRPORT	AGENCY	ESTIMATED COST
Runway Extensions	Central (CEM)	DOT&PF - N Reg	$ 2,754,000
	Chistochina (CZO)	DOT&PF - N Reg	$ 3,720,000
	Circle City (CRC)	DOT&PF - N Reg	$ 963,000
	Delta Junction (D66)	City of Delta Junction	$ 2,400,000
	Healy River (HRR)	DOT&PF - N Reg	$ 1,989,000
	Tok Junction (6K8)	DOT&PF - N Reg	$25,260,000

1.5.2 Runway Surface Improvements

Runway surface improvements are the primary need to restore airports to a state of good condition. However, runway surface improvements almost never happen in isolation. It is very expensive and challenging to mobilize construction equipment and crews to remote locations, and project planners typically create project packages containing as much justifiable improvement work as possible to get the greatest use out of having the right equipment and people at the airport. Minor surface maintenance work – regrading and the application of dust palliative – nearly always includes the runway, taxiway, apron, and access road. Major runway improvement work is typically packaged with numerous other airport improvements in an effort to make the project have the most impact, knowing each airport only gets major work done at large intervals. A major runway improvement is often accompanied by taxiway rehabilitation, apron rehabilitation, lighting system rehabilitation, obstruction removal, drainage improvements, navaids installation or replacement, and sometimes a new or replacement SREB or other major work that will happen while construction equipment is mobilized to these remote sites. Some of the airports are recommended for runway rehabilitation (a significant work effort), while others are recommended for less costly surface maintenance work, which typically involves minor resurfacing and application of dust palliative to runway, taxiway, apron, and access road surfaces.

PROJECT	LOCATION/AIRPORT	TYPE OF WORK	AGENCY	ESTIMATED COST
Runway Surface Improvements	Arctic Village (ARC)	Rehab	Venetie Tribal Government	$10,500,000
	Bradley Sky-Ranch (95Z)	Surface Maintenance	Private Owner - Bradley Brothers	$ 410,000
	Chalkyitsik (CIK) *[Pending FY24/FY25]*	Rehab	DOT&PF - N Reg	$ 9,579,000
	Central (CEM)	Rehab	DOT&PF - N Reg	$ 5,842,200
	Chisana (CZN)	Surface Maintenance	DOT&PF - N Reg	$ 800,000
	Chistochina (CZO)	Surface Maintenance	DOT&PF - N Reg	$ 410,000
	Clear (Z84)	Rehab	DOT&PF - N Reg	$ 7,994,000
	Copper Center 2 (Z93)	Surface Maintenance	DOT&PF - N Reg	$ 410,000
	Gold King Creek (AK7)	Surface Maintenance	DOT&PF - N Reg	$ 800,000
	Healy River (HRR)	Rehab	DOT&PF - N Reg	$ 3,492,000
	McCarthy (15Z)	Surface Maintenance	DOT&PF - N Reg	$ 410,000
	Northway (ORT)	Rehab	DOT&PF - N Reg	$10,200,000
	Tok Junction (6K8)	Surface Maintenance	DOT&PF - N Reg	$ 100,000
	Wiseman (WSM)	Surface Maintenance	DOT&PF - N Reg	$ 600,000

1.5.3 New Lighting Systems

There are two airports currently without runway lighting that are recommended to receive installation of lighting systems. Per AASP performance measures, Community class airports should have MIRL systems. Chistochina (CZO) and Delta Junction (D66) are Community class airports without any runway lighting. Additionally, although Fort Yukon (FYU) has an existing MIRL lighting system, FYU is a Regional class facility and should have a HIRL system, per its AASP performance measure. The lighting cost estimate is for airport lighting, inclusive of runway, taxiway, and apron.

PROJECT	LOCATION/AIRPORT	AGENCY	ESTIMATED COST
Install MIRL Lighting Systems	Chistochina (CZO)	DOT&PF - N Reg	$ 1,250,000
	Delta Junction (D66)	City of Delta Junction	$ 1,250,000
Upgrade to HIRL Lighting System	Fort Yukon (FYU)	DOT&PF - N Reg	$ 1,500,000

1.5.4 Weather Reporting Systems

According to the Statewide Aviation System Planner, the total cost to design, purchase, and install a basic AWOS unit in remote Alaska is estimated at $2,060,000. Eight systems statewide were purchased and installed in 2022, with complete certification and ownership transferal to the FAA anticipated completed by December 2023. Installation of additional units is pending FAA reauthorization language. If the ultimate FAA reauthorization legislation allows for the

continuation of airport sponsors being able to purchase and install AWOS units with AIP funding then turn them over to the FAA for ownership and maintenance, DOT&PF should pursue the acquisition of additional AWOS units at the recommended locations. One remark about Cantwell (TTW), a privately owned airport not in the NPIAS, is that weather reporting is desired by pilots at this location due it being near a pass and serving as a safe landing area. The private owner may not be able to purchase and install a $2 million unit without funding assistance, and with far less costly VWOS units becoming a promising future alternative, TTW may be an appropriate location for this type of weather reporting unit. VWOS units are under the responsibility of the FAA Weather Camera Program, and this program has installed weather cameras at many off-airport locations for the purpose of creating safer flight en route.

The FAA Weather Camera Program's current (June 2023) plan is for the installation of up to 160 new camera facilities at locations across the Continental U.S. and Alaska. Alaska sites listed in the weather camera expansion include two new cameras near Eielson Air Force Base (which is within the IATP area), but none of the airports recommended by the IATP are included in the current expansion plans. According to the FAA Weather Camera program manager, at this time, all of the locations have already been chosen for the new implementation, and new requested sites would be added to a list for future considerations. The best way to request a site is to use the "feedback" button on the FAA Weather Camera website. Installation costs vary greatly depending on whether it is a simple camera installation on an existing tower or something more complex, like ones that require a fully remote solar and wind powered system. The cost could range anywhere from $30,000 or higher depending on the equipment and labor required. The IATP advocates for continuing to identify the airports and air route sites in need of weather cameras, getting them added to the list for future consideration, and working on a continuing basis with the FAA Weather Camera Program to get them installed.

PROJECT	LOCATION/AIRPORT	AGENCY	ESTIMATED COST
Install Weather Reporting Stations (AWOS/VWOS)	Beaver (WBQ) Birch Creek (Z91) Cantwell (TTW) Central (CEM) Chalkyitsik (CIK) Circle City (CRC) Healy River (HRR) Manley Hot Springs (MLY) McCarthy (15Z) Tetlin (3T4) Venetie (VEE)	DOT&PF - N Reg DOT&PF - N Reg Private Owner – Bill Simms DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg FAA Weather Camera Program DOT&PF - N Reg DOT&PF - N Reg DOT&PF - N Reg Venetie Tribal Government	$ 2,060,000 $ 2,060,000 Unknown (VWOS) $ 2,060,000 $ 2,060,000 $ 2,060,000 N/A – VWOS Test Site $ 2,060,000 $ 2,060,000 $ 2,060,000 $ 2,060,000
Install Weather Cameras	Birch Creek (Z91) Circle City (CRC) Manley Hot Springs (MLY) McCarthy (15Z) Prospect Creek (PPC) Stevens Village (SVS) Tetlin (3T4) Venetie (VEE)	FAA Weather Camera Program, Flight Service, ATO	$ 30,000 $ 30,000 $ 30,000 $ 30,000 $ 30,000 $ 30,000 $ 30,000 $ 30,000

1.6 New Recommendations Since Aviation Tech Memo was Developed

RECOMMENDATION	LOCATION/AIRPORT
Work with local sponsor to determine airport development needs.	Arctic Village (ARC) Venetie (VEE)
Work with local sponsor to determine whether inclusion in the NPIAS is in the best interest of the airport.	Delta Junction (D66)
Determine whether supplemental AIP appropriations funding grant was received and what work will be accomplished.	Manley Hot Springs (MLY)
Airport Layout Plans and Master Plans – Fencing	Areawide
Establish point of contact within USPS and current status of Bypass Mail Program	Areawide
Determine whether State of Alaska will provide matching funding to local airport sponsors for AIP projects.	Local Sponsor Airports

1.7 IATP Aviation Capital Improvement Plan

The IATP Aviation Capital Improvement Plan (CIP) presents the airport projects and cost estimates that will accomplish the full suite of the individual recommendations discussed in previous sections. As noted, many of the individual recommendations would not be accomplished in isolation. Airport lighting improvements are most typically packaged with runway surface improvements and other airfield work. Runway surface improvements are nearly always accompanied by taxiway, apron, and access road improvements. .

There is only $23 million in project work at twelve facilities (excluding FAI) in the IATP region included in DOT&PF's 2020-2027 Airport Capital Improvement Program (ACIP). The ACIP includes projects planned by the DOT&PF, but these projects have not necessarily received AIP grant funding yet. For the twelve IATP facilities included in the 2020-2027 ACIP, only two major improvement projects are planned (at Chalkyitsik, which went to grant in September 2023, and at Eagle); four airports are planned to receive new equipment only; four airports are planned for resurfacing work only; one airport is planned for resurfacing work and new equipment; and one airport is planned to receive a new electric bank and resurfacing work. No facilities from the IATP region were scored in the most recent Aviation Project Evaluation Board (APEB) meeting. The needs of this region – particularly the runway improvements, lighting projects, and weather reporting stations – need to be brought forward for project evaluation, programming, and funding.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Arctic Village (ARC) Native Village of Venetie Tribal Government	Update ALP Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Rehab Airport Lighting NAVAIDs/Signage Install PAPI **TOTAL**	$ 450,000 $10,500,000 $ 1,430,000 $ 1,870,000 $ 2,000,000 $ 1,250,000 $ 225,000 $ 700,000 **$18,425,000**	Short Mid Mid Mid Mid Mid Mid Mid	ARC's last ALP is from 2003. It does not include any major development plans, but it does recommend PAPI in its ultimate design. An ALP update is recommended in the near term to establish airport conditions and identify overall airport development needs, which the IATP recommends include runway and airport lighting system rehabilitation. Apron, taxiway, and access road rehab work and NAVAIDs/signage work is also assumed to be conducted at the same time as runway and lighting rehab.
Beaver (WBQ) DOT&PF Northern Region	Minor Gravel Resurfacing New Fuel Storage Tank Rehab Airport Lighting Construct SREB AWOS **TOTAL**	$ 399,000 $ 65,775 $ 1,250,000 $ 1,658,186 $ 2,060,000 **$ 5,432,961**	Short Short Short Short Short	The IATP recommends an AWOS for WBQ and reinforces DOT&PF's 10-year Lighting Priority Assessment, which recommends WBQ lighting for imminent project programming. Other immediate needs identified in the AASP Needs list and Lighting Priority Assessment include resurfacing, a new fuel storage tank, and a new SREB.
Birch Creek (Z91) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Reconstruct Runway Lighting Reconstruct Taxiway Lighting Reconstruct Misc NAVAIDs WAAS Survey AWOS Weather Camera Develop IAP **TOTAL**	$ 6,000,000 $ 1,000,000 $ 2,500,000 $ 1,900,000 $ 800,000 $ 400,000 $ 100,000 $ 250,000 $ 2,060,000 $ 30,000 N/A **$15,040,000**	Mid Mid Mid Mid Mid Mid Mid Mid Mid Mid Mid	The IATP recommends runway lighting rehabilitation, IAP development (supported with an aero survey and AWOS weather reporting), and a weather camera for Z91. Although the IATP and DOT&PF's 10-year Lighting Priority Assessment identify lighting rehab as a short-term need, Z91 has a project package in nomination status which includes lighting rehab among many other airport improvements, and programming for the full suite of needs is more likely to happen in the Mid-Term. The project package in nomination status includes runway, taxiway, apron, and access road rehabilitation and airport lighting and NAVAIDs reconstruction.
Bradley Sky-Ranch (95Z) Private Owner: James Bradley	Resurface Runway **TOTAL**	$ 410,000 **$ 410,000**	Mid	The runway surface is remarked as being in "Fair" condition. A surface maintenance and dust palliative effort is recommended for 95Z.
Cantwell (TTW) Private Owner: Ray Atkins	VWOS	Unknown	Long	The IATP recommends a weather reporting system for TTW. Weather at this location was requested by pilots or carriers during the 2016 AASP survey in support of the Alaska Weather Equipment Needs Study. TTW is close to a pass and serves as a safe emergency

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
				landing area. TTW is privately owned and not in the NPIAS. An AWOS may be cost prohibitive and/or logistically improbable, so the IATP recommends TTW be considered for a VWOS system.
Central (CEM) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Rehab Airport Lighting NAVAIDs/Signage Runway Extension AWOS **TOTAL**	$ 5,842,200 $ 1,430,000 $ 1,870,000 $ 2,000,000 $ 1,250,000 $ 225,000 $ 2,754,000 $ 2,060,000 **$17,431,200**	Mid Mid Mid Mid Mid Mid Long Long	The IATP recommends runway rehabilitation, runway extension to 3,300 ft, airport lighting rehabilitation, and an AWOS for CEM. The runway surface is currently remarked as being in "Poor" condition, and the lighting system is estimated to be 30 years old. Apron, taxiway, and access road rehab work and NAVAIDs/signage work is also assumed to be conducted at the same time as runway and lighting rehab. As a Community class airport, CEM's runway length performance measure prescribes a runway length of at least 3,300 ft. CEM has an RNAV but no weather reporting. CEM is a wildland firefighting support facility.
Chalkyitsik (CIK) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Runway Lighting Rehab Taxiway Lighting Install Misc NAVAIDs Improve Airport Drainage Construct SREB AWOS **TOTAL**	$17,443,343 $ 2,907,224 $ 2,907,224 $ 872,167 $ 290,722 $ 145,361 $ 290,722 $ 4,070,114 $ 2,060,000 **$30,986,877**	Imminent Imminent Imminent Imminent Imminent Imminent Imminent Imminent Long	The IATP recommends runway surface improvements, lighting rehabilitation, and an AWOS for CIK. CIK has a two-stage project in the ACIP which includes most of the IATP recommendations, with grants executed in 2023 and 2024. The work to be conducted imminently includes resurfacing the runway, taxiway, and apron; rehabilitating the airport lighting system and electrical building; airport drainage improvements; replacement of the segmented circle and windcone; application of dust palliative to all airport surfaces; and construction of a new SREB.
Chisana (CZN) DOT&PF Northern Region	Rehab Runway + Dust Palliative **TOTAL**	$ 800,000 **$ 800,000**	Long	The IATP recommends runway surface improvements for CZN. The runway surface is currently remarked as being in "Poor" condition. CZN has a surface maintenance project in the AASP Needs list that involves rehabilitating the runway with surface maintenance and application of dust palliative.
Chistochina (CZO) DOT&PF Northern Region	Resurface Runway Install New MIRL Lighting Runway Extension **TOTAL**	$ 410,000 $ 1,250,000 $ 3,720,000 **$ 5,380,000**	Mid Long Long	The IATP recommends runway surface improvements, runway extension to 3,300 ft to meet the AASP recommended minimum runway length for Community class airports, and installation of a new construction MIRL lighting system. Surface maintenance is recommended in the Mid-Term. CZO is not in the NPIAS, thus recommended improvements would need to be accomplished with non-AIP funding sources, or CZO should be considered for inclusion

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
				in the NPIAS to accomplish the more costly lighting and runway extension work.
Circle City (CRC) DOT&PF Northern Region	Resurface Runway Rehab Runway Lighting Runway Extension WAAS Survey AWOS Weather Camera Develop IAP **TOTAL**	$ 410,000 $ 1,250,000 $ 963,000 $ 250,000 $ 2,060,000 $ 30,000 N/A **$ 4,963,000**	Mid Mid Long Long Long Long Long	The IATP recommends runway extension to 3,300 ft, a lighting rehabilitation project, an AWOS, a weather camera, and development of an IAP (with an aero survey to support it). The runway surface is remarked as being in good condition, but there is brush encroaching on the runway and navigational aids, and there has not been a runway surface maintenance project since the grant work (awarded in 2009, closed in 2014), so runway surface improvements are an additional expected need.
Clear (Z84) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Rehab Runway Lighting NAVAIDs/Signage **TOTAL**	$ 7,994,000 $ 4,950,000 $ 5,270,000 $ 2,000,000 $ 1,250,000 $ 225,000 **$21,689,000**	Mid Mid Mid Mid Mid Mid	The IATP recommends runway rehabilitation due to results of recent PCI inspection report and runway lighting system rehabilitation. Apron, taxiway, and access road rehab work and NAVAIDs/signage work is also assumed to be conducted at the same time as runway and lighting rehab.
Copper Center 2 (Z93) DOT&PF Northern Region	Resurface Runway **TOTAL**	$ 410,000 **$ 410,000**	Mid	The runway surface is remarked as being in “Fair” condition. A surface maintenance and dust palliative effort is recommended for Z93.
Delta Junction (D66) City of Delta Junction	Install New MIRL Lighting Runway Extension Install Fencing **TOTAL**	$ 1,250,000 $ 2,400,000 $ 1,000,000 **$ 4,650,000**	Long Long Long	The IATP recommends a new installation MIRL lighting system and a runway extension to 3,300 ft for D66, both to satisfy AASP Community class airport performance measures. D66 is not in the NPIAS, so funding would need to come from non-AIP sources unless D66 becomes part of the NPIAS. A lighting system project could be a standalone effort since D66 is on the road system. The airport manager would like to have fencing at the airport, and the IATP supports the inclusion of fencing in any capital project to mitigate wildlife hazards and deter non-aircraft use of the airport.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Eagle (EAA) DOT&PF Northern Region	Resurface Runway Install New Lighting Construct New EEB Drainage Improvements **TOTAL**	$ 7,920,000 $ 721,000 $ 309,000 $ 530,450 **$ 9,480,450**	Short Short Short Short	The IATP recommends lighting system rehabilitation for EAA. EAA has a project in the ACIP with anticipated 2028 funding that will replace and upgrade the lighting system and navigational aids, as well as rehabilitate and apply dust palliative on the runway, taxiway, apron, and access road and construct drainage improvements on the access road.
Fort Yukon (FYU) DOT&PF Northern Region	Resurface Runway Upgrade Lighting System **TOTAL**	$ 410,000 $ 1,500,000 **$ 1,910,000**	Mid Mid	The IATP recommends a lighting system upgrade to HIRL to meet AASP performance measures for Regional class airports. FYU has been maintained in good condition, so minor surface maintenance work is recommended at the same time as the lighting system upgrade.
Gold King Creek (AK7) DOT&PF Northern Region	Rehab Runway **TOTAL**	$ 800,000 **$ 800,000**	Long	The IATP recommends runway surface maintenance work at AK7 due to the runway surface being remarked as in "Fair" condition due to an uneven runway surface and grass growing on the runway. AK7 is in an unpopulated area, off the road system, without any equipment, materials, or personnel on site. The minor surface maintenance is anticipated to be more costly than average due to the need to mobilize equipment and materials to this remote location.
Gulkana (GKN) DOT&PF Northern Region	Replace SREB Snow Blower & Ski Strip Groomer Replace Beacon & Windsock Twy & Apron Reconfig/Expansion Airport Resurfacing & Lighting Relocate Gravel/Ski Strip Airport Fencing Extend Twys & Roads Floatpond Feasibility Study Floatpond Development Runway Extension **TOTAL**	$ 6,045,000 $ 2,880,000 $ 100,000 $17,130,000 $ 6,665,000 $17,130,000 $ 1,490,000 $10,260,000 $ 500,000 $35,800,000 $28,935,000 **$127,175,000**	Short Short Short Short Mid Long Long Long Unknown Unknown Unknown	The IATP recommends a lighting project and the completion of the ALP for GKN. The ALP is nearing completion, and the recommended suite of improvements includes a lighting project in the phased development plans. The CIP Components listed are those recommended in the ALP.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Healy River (HRR) DOT&PF Northern Region	Weather Reporting (VWOS) Rehab Runway Rehab Taxiways Rehab Aprons Runway Extension **TOTAL**	N/A (FAA effort) $ 3,492,000 $ 3,492,000 $ 3,492,000 $ 1,989,000 **$12,465,000**	Test Phase Mid Mid Mid Long	The IATP recommends runway rehabilitation due to surface condition (2020 PCI measurement was 48), runway extension to 3,300 ft meet AASP performance measure for a Community class airport, and a weather reporting system for HRR. With or without a runway extension, a rehabilitation project is recommended for all paved surfaces (runway, taxiways, aprons, and taxilane/apron) based on 2020 PCI measurements. HRR is the site of a VWOS weather reporting system in the test phase.
Manley Hot Spring (MLY) DOT&PF Northern Region	Rehab Airport Lighting AWOS Weather Camera **TOTAL**	$ 1,250,000 $ 2,060,000 $ 30,000 **$ 3,340,000**	Mid Mid Mid	The IATP recommends lighting system rehabilitation, an AWOS, and a weather camera for MLY. MLY is included in DOT&PF's Lighting Priority Assessment with target grant funding in FY33. MLY is on the road system and may be a candidate for a standalone lighting project. MLY has a published RNAV approach but no weather reporting.
McCarthy (15Z) DOT&PF Northern Region	Runway Resurfacing AWOS Weather Camera Develop IAP **TOTAL**	$ 410,000 $ 2,060,000 $ 30,000 N/A **$ 2,500,000**	Mid Mid Mid Long	The IATP recommends runway surface improvements, an AWOS, a weather camera, and development of an IAP for 15Z. The runway condition is currently remarked as "Fair." 15Z has a special IAP published, but a public IAP is desired. Weather reporting will support development of an IAP and is desired by users even in absence of a public IAP.
Minchumina (MHM) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Rehab Airport Lighting NAVAIDs/Signage **TOTAL**	$ 3,074,682 $ 1,430,000 $ 1,870,000 $ 2,000,000 $ 1,250,000 $ 225,000 **$ 9,849,682**	Mid Mid Mid Mid Mid Mid	The IATP recommends lighting system rehabilitation for MHM. The AASP Needs list includes runway rehabilitation. It is assumed that the lighting system and runway rehabilitation efforts would happen at the same time and include the additional elements of apron, taxiway, access road, and NAVAIDs/signage rehabilitation. MHM is a wildland firefighting support facility.
Minto Al Wright (51Z) DOT&PF Northern Region	Runway Resurfacing Rehab Airport Lighting **TOTAL**	$ 410,000 $ 1,250,000 **$ 1,660,000**	Mid Mid	The IATP recommends lighting system rehabilitation for 51Z. DOT&PF's Lighting Priority Assessment indicates a target FY32 grant year for lighting and resurfacing/dust palliative.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Nenana Muni (ENN) City of Nenana	Rehab Runway Lighting **TOTAL**	$ 1,431,260 **$ 1,431,260**	Imminent	The IATP recommends runway lighting rehabilitation for ENN. The airport has a lighting project anticipated to be completed in 2024 which will remove and replace all runway edge and threshold lighting on the paved and turf runways remove and replace all existing runway and taxiway signage, and replace the segmented circle and lighted windcone. The ENN ALP update is anticipated to be completed in Spring 2024, and this plan will outline additional phased development recommendations for ENN.
Northway (ORT) DOT&PF Northern Region	Rehab Runway Rehab Taxiway Rehab Apron Rehab Access Road Rehab Airport Lighting RSA Grading NAVAIDs/Signage **TOTAL**	$10,200,000 $ 4,950,000 $ 5,270,000 $ 2,000,000 $ 1,250,000 $ 3,288,790 $ 225,000 **$27,183,790**	Mid Mid Mid Mid Mid Mid Mid	The IATP recommends lighting system rehabilitation and runway surface rehabilitation for ORT. The 2019 PCI inspection report indicates that all airfield pavements are in rehabilitation or reconstruction condition. DOT&PF's Lighting Priority Assessment indicates a target grant year of FY32 for lighting and surface rehabilitation for ORT. Apron, taxiway, and access road rehab work and NAVAIDs/signage work is also assumed to be conducted at the same time as runway and lighting rehab.
Prospect Creek (PPC) DOT&PF Northern Region (Managed by Alyeska Pipeline Services)	Weather Camera **TOTAL**	$ 30,000 **$ 30,000**	Mid	The IATP recommends a weather camera for PPC, which was recommend in the 2010 IATP, as well. The airport is managed and used primarily by Alyeska Pipeline Services, and other airport needs are managed by Alyeska.
Ralph M Calhoun Meml (TAL) DOT&PF Northern Region	Resurface Runway Rehab Airport Lighting **TOTAL**	$ 410,000 $ 1,250,000 **$ 1,660,000**	Mid Mid	The IATP recommends lighting system rehabilitation for TAL. DOT&PF's Lighting Priority Assessment indicates a target FY31 grant year for lighting and resurfacing/dust palliative.
Rampart (RMP) DOT&PF Northern Region	Resurface Runway Rehab Airport Lighting NAVAIDs/Signage **TOTAL**	$ 410,000 $ 1,250,000 $ 225,000 **$ 1,885,000**	Mid Mid Mid	The IATP recommends lighting system rehabilitation for RMP. DOT&PF's Lighting Priority Assessment indicates a target FY30 grant year for lighting and resurfacing/dust palliative. The most recent 5010 inspection report noted damaged and missing runway markers. Runway work should include NAVAIDs and signage work.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Stevens Village (SVS) DOT&PF Northern Region	Airport Lighting & Resurfacing Drainage Improvements Fuel Tank Upgrades AWOS Develop IAP Weather Camera **TOTAL**	$ 7,649,089 $ 56,275 $ 33,764 $ 2,060,000 N/A $ 30,000 **$ 9,829,128**	Short Short Short Short Mid Mid	The IATP recommends lighting system rehabilitation, development of an IAP, a weather reporting system, and a weather camera for SVS. DOT&PF's Lighting Priority Assessment indicates a target grant year of FY32 for lighting and resurfacing/dust palliative. The AASP Needs list includes a lighting and resurfacing project, but this is not yet in the ACIP. Other short-term needs listed in the AASP should be included in an airport improvement project. SVS was indicated as having an IAP in the 2010 IATP, and it received a grant for an aeronautical survey for WAAS approach in 2007, but it does not currently have any published IAPs, and the WAAS survey is not reflected in the AASP facilities database.
Tetlin (3T4) DOT&PF Northern Region	Resurface Runway Rehab Airport Lighting Weather Camera AWOS Develop IAP **TOTAL**	$ 410,000 $ 1,250,000 $ 30,000 $ 2,060,000 N/A **$ 3,750,000**	Mid Mid Mid Mid Long	The IATP recommends lighting system rehab, a weather camera, an AWOS, and development of an RNAV approach (if it is determined that the 2013 WAAS survey supports IAP development) for 3T4. DOT&PF's Lighting Priority Assessment indicates a target grant year of FY32 for lighting and resurfacing/dust palliative.
Tok Junction (6K8) DOT&PF Northern Region	Master Plan Resurface Runway Runway Extension **TOTAL**	$ 750,000 $ 100,000 $25,260,000 **$26,110,000**	Short Mid Long	The IATP recommends runway surface improvements, runway extension, evaluation for Division of Forestry to relocate its seasonal tanker base to 6K8, and continuation of the work recommended by the UTAPS for Tok Junction. The first next step is to complete a Master Plan to more specifically identify needs and recommendations for the airport. Regardless of any future improvements, 6K8 should receive minor surface maintenance work to extend the life of the paved runway. The IATP recommends a runway extension to at least 3,300 ft to meet AASP Community class airport performance measures, but the UTAPS effort recommended a minimum runway length of 4,050 ft and developed a cost estimate for this extension. Other recommendations from UTAPS are not included here because the ultimate phased development recommendations and cost estimates are anticipated to be developed by the Master Plan.

AIRPORT & OWNER	CIP COMPONENTS	COST ESTIMATE	TERM	DESCRIPTION OF WORK
Venetie (VEE) Native Village of Venetie Tribal Government	Update ALP Resurface Runway Rehab Airport Lighting Insall PAPI Weather Camera AWOS **TOTAL**	$ 450,000 $ 410,000 $ 1,250,000 $ 700,000 $ 30,000 $ 2,060,000 **$ 4,900,000**	Short Mid Mid Mid Mid Long	VEE's last ALP is from 2005. It includes REIL, PAPI, and an AWOS in its ultimate design. An ALP update is recommended in the near term to establish airport conditions and identify overall airport development needs. The IATP recommends runway surface improvements, airport lighting rehabilitation, a weather camera, and an AWOS for VEE. Apron, taxiway, and access road rehab work and NAVAIDs/signage work is also assumed to be conducted at the same time as runway and lighting rehab.
Wiseman (WSM) DOT&PF Northern Region	Runway Resurfacing **TOTAL**	$ 600,000 **$ 600,000**	Long	The IATP recommends runway surface improvements for WSM due to the runway being remarked as in "Poor" condition by recent inspections. Surface maintenance is included in the AASP Needs list, with a cost estimate from 2015 that has been updated for the IATP recommendations.

Section Three

Surface Transportation Conditions, Issues, and Trends

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 What is the Interior Alaska Transportation Plan? 1
1.2 Purpose of the Technical Memorandum 1: Surface Transportation Analysis 2
1.3 Interior Alaska Transportation Plan Region 2
2.0 PUBLIC AND AGENCY INVOLVEMENT 4
2.1 Overview 4
2.2 Public & Agency Involvement 4
2.3 Key Themes 4
3.0 REVIEW OF RELATED PLANNING DOCUMENTS 5
3.1 DOT&PF Plans 5
3.2 Metropolitan Planning Organization Plans 8
3.3 Other Plans 8
4.0 SURFACE TRANSPORTATION SYSTEM OVERVIEW 10
4.1 Roads & Highways 10
4.2 Non-Motorized Facilities 13
4.3 Bridges 13
4.4 Safety 15
4.5 Rail 17
4.6 Freight 19
4.7 Transit 22
4.8 Land Use 22
4.9 Tourism and Recreation 23
4.10 Maintenance 24
5.0 EXISTING CONDITIONS 27
5.1 Richardson Highway 27
5.2 Steese Expressway 29
5.3 George Parks Highway 31
5.4 Chena Hot Springs Road 33
5.5 Denali Highway 35
5.6 Glenn Highway 37
5.7 Alaska Highway 39
5.8 Tok Cutoff/Tok Highway 41
5.9 Edgerton Highway/McCarthy Road 42
5.10 Taylor Highway 44
5.11 Top of the World Highway 46
5.12 Dalton Highway & Elliott Highway 47
6.0 ROADWAY TRAFFIC FORECASTS 48
6.1 Methodology 48
6.2 Fairbanks Area 48
6.3 Delta/Tok/Glennallen Area 49
6.4 Seasonally Dependent Highways 49
6.5 Southernmost Highways 50
6.6 George Parks Highway 50
7.0 KEY ISSUES AND RECOMMENDATIONS 51
7.1 Improvements to Roads and Highways 51
7.2 Resiliency & Risk 51
7.3 Other Identified Issues 52

APPENDICES **53**
Appendix 1: Bridge Inventory 54

FIGURES

Figure 1. Elements of the Alaska Statewide Long-Range Transportation Planning Process 1
Figure 2. Interior Alaska Transportation Plan Region Study Area & Major Surface Transportation Facilities 3
Figure 3. Interior Alaska Roadway Function Classification 12
Figure 4. Interior Alaska Bridges 14
Figure 5. Interior Alaska Average Daily Traffic for 2021 16
Figure 6. Interior Alaska Railroads 18
Figure 7. Interior Alaska Intermodal Connection Points 21

TABLES

Table 1. Urban and Rural Freight Corridors 19
Table 2. Interior Region Freight Bottleneck Locations by Severity 20
Table 3. Common Recreational Activities in the Interior. 24
Table 4. DOT&PF Maintenance Stations 26
Table 5. Richardson Highway Crashes 2013 – 2021 28
Table 6. Richardson Highway Surface Conditions 2021 29
Table 7. Steese Highway Crashes 2013-2021 30
Table 8. Steese Highway Surface Conditions 2021 31
Table 9. Parks Highway Crashes 2013-2021 32
Table 10. Parks Highway Surface Conditions 2021 33
Table 11. Chena Hot Springs Road Crashes 2013-2021 34
Table 12. Denali Highway Crashes 2013-2021 36
Table 13. Denali Highway Surface Conditions 2021 37
Table 14. Glenn Highway Crashes 2013-2021 38
Table 15. Glenn Highway Surface Conditions 2021 39
Table 16. Alaska Highway Crashes 2013-2021 40
Table 17. Alaska Highway Surface Conditions 2021 41
Table 18. Tok Cutoff/Tok Highway Surface Conditions 2021 42
Table 19. Edgerton Highway/ McCarthy Road Crashes 2013-2021 43
Table 20. Edgerton Highway/McCarthy Road Surface Conditions 2021 44
Table 21. Taylor Highway Crashes 2013-2021 45
Table 22. Taylor Highway Surface Conditions 2021 46
Table 23. Top of the World Highway Surface Conditions 2021 47

ACRONYMS & ABBREVIATIONS

2036 LRTP	Long-Range Transportation Policy Plan Update – Let's Keep Moving 2036
AAC	Alaska Administrative Code
AADT	Annual Average Daily Traffic
AHS	Alaska Highway System
Alaska LRTP	Alaska Statewide Long-Range Transportation Plan
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
ARRC	Alaska Railroad Corporation
ASATP	Alaska Statewide Active Transportation Master Plan
ASFP	Alaska Statewide Freight Plan
ASRP	Alaska State Rail Plan
ATIA	Alaska Travel Industry Association
CFR	Code of Federal Regulations
DOT&PF	Department of Transportation and Public Facilities
FAST	Fairbanks Area Surface Transportation
FHWA	Federal Highway Administration
GVW	Gross Vehicle Weight
HSIP	Highway Safety Improvement Program
IATP	Interior Alaska Transportation Plan
IRI	International Roughness Index
LRTP	Long-Range Transportation Plan
MACS	Metropolitan Area Commuter System
Memo	Memorandum
MP	Mile Post
MPA	Metropolitan Planning Area
MPO	Metropolitan Planning Organization
MPH	Miles Per Hour
MS/CVC	Measurement Standards and Commercial Vehicle Compliance
MTP	Metropolitan Transportation Plan
NHS	National Highway System
NWATP	Northwest Alaska Transportation Plan
PAIP	Public and Agency Involvement Plan
PLO	Public Land Order

PRIIA	Passenger Rail Investment and Improvement Act
RS	Revised Statute
RSP	Road Surface Profiling
SHSP	Strategic Highway Safety Plan
SIP	Strategic Investment Plan
STIP	Statewide Transportation Improvement Program
TAPS	Trans-Alaska Pipeline System
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TRAAK	Trails and Recreational Access for Alaska Program
US	United States
VMT	Vehicle Miles Traveled
VPD	Vehicles Per Day

1.0 INTRODUCTION

1.1 What is the Interior Alaska Transportation Plan?

The Interior Alaska Transportation Plan (IATP) is a part of the State of Alaska Department of Transportation and Public Facilities (DOT&PF) federally mandated statewide transportation planning process, per US Code of Federal Regulations (CFR), Title 23 Section 450.216, Statewide and Nonmetropolitan Transportation Planning and Programming, and as detailed in Title 17, Alaska Administrative Code (AAC), Section 05.120, Statewide transportation planning process. The DOT&PF regularly updates five regional, multi-modal, long-range transportation plans (LRTPs) throughout the state to better inform the overall Alaska Statewide Long-Range Transportation Plan (Alaska LRTP). The overall Alaska LRTP sets the policies, goals, and actions to improve the transportation network within each state, working together with the Strategic Investment Plan (SIP) to identify key transportation system improvements and allows DOT&PF to program funding for project implementation through the Statewide Transportation Improvement Program (STIP).

The DOT&PF pursues a continuous, comprehensive, and cooperative statewide planning process by collaborating directly with communities during the regional LRTP update process to identify existing conditions, key issues, and recommended priorities for funding opportunities. *Figure 1* illustrates the various elements included in the DOT&PF statewide transportation planning, program development, and strategic investment process.

Figure 1. Elements of the Alaska Statewide Long-Range Transportation Planning Process

The purpose of the 2040 IATP is to identify existing conditions, develop goals for the region's transportation system, identify key issues, and provide recommendations for strategic funding and implementation to achieve those goals. Through public outreach, data collection, and existing conditions evaluation, the IATP planning process results in the identification of key issues and recommendations for communities within the IATP area boundaries. The IATP was last updated in 2010 and assumes a 20-year planning horizon. The IATP provides a valuable regional perspective with focused input from the communities located within the boundaries of the IATP area, as defined in **Section 1.3, Interior Alaska Transportation Plan .**

The overall IATP Update is developed through three (3) key parts of the planning process:

1. **Technical Memorandums.** Five (5) technical memorandums explore key transportation planning elements within the Interior.

a) Surface Transportation

b) Aviation System

c) Risk & Resiliency in Transportation Infrastructure

d) Winter Access in the Interior

e) Riverine & Water Transportation

2. **Public & Agency Engagement.** Collaborative public and agency engagement activities are used to gather feedback from members of the public and agency representatives.

3. **Funding & Implementation Strategy.** To address the key issues identified in the IATP, strategies are organized into short-term, mid-term, and long-term projects with high-level estimates of cost to better inform statewide investment plan decisions from a regional perspective.

1.2 Purpose of the Technical Memorandum 1: Surface Transportation Analysis

The IATP Technical Memorandum (memo) 1: Surface Transportation Analysis Memo reviews related plans and policies, summarizes public engagement activities to date, documents existing conditions of surface transportation system facilities, develops forecasts, and identifies key issues and recommendations for a 20-year planning horizon within the boundaries of the planning area. Surface transportation includes DOT&PF-owned roads, highways, and non-motorized transportation facilities located within the boundaries of the IATP area.

There are over 60 census-designated places communities within IATP area, with 53 of those communities located on the DOT&PF-owned surface transportation system. The 10-plus communities located off the road system connect back to regional surface infrastructure through boat, winter access, barge, and aviation facilities. Regardless of on- or off-road system location, all communities in the Interior rely on the surface transportation system for supplies, services, employment, education, subsistence, and recreation.

Information presented in this memorandum will inform the overall update to the IATP, resulting in recommended funding and implementation strategies to address multi-modal transportation system needs from a regional perspective.

1.3 Interior Alaska Transportation Plan Region

The IATP area boundaries are shown in *Figure 2*. The Dalton Highway serves as a western boundary for the IATP area, but the analysis of this facility is covered in the 2040 Northwest Alaska Transportation Plan Update (NWATP) (2022).

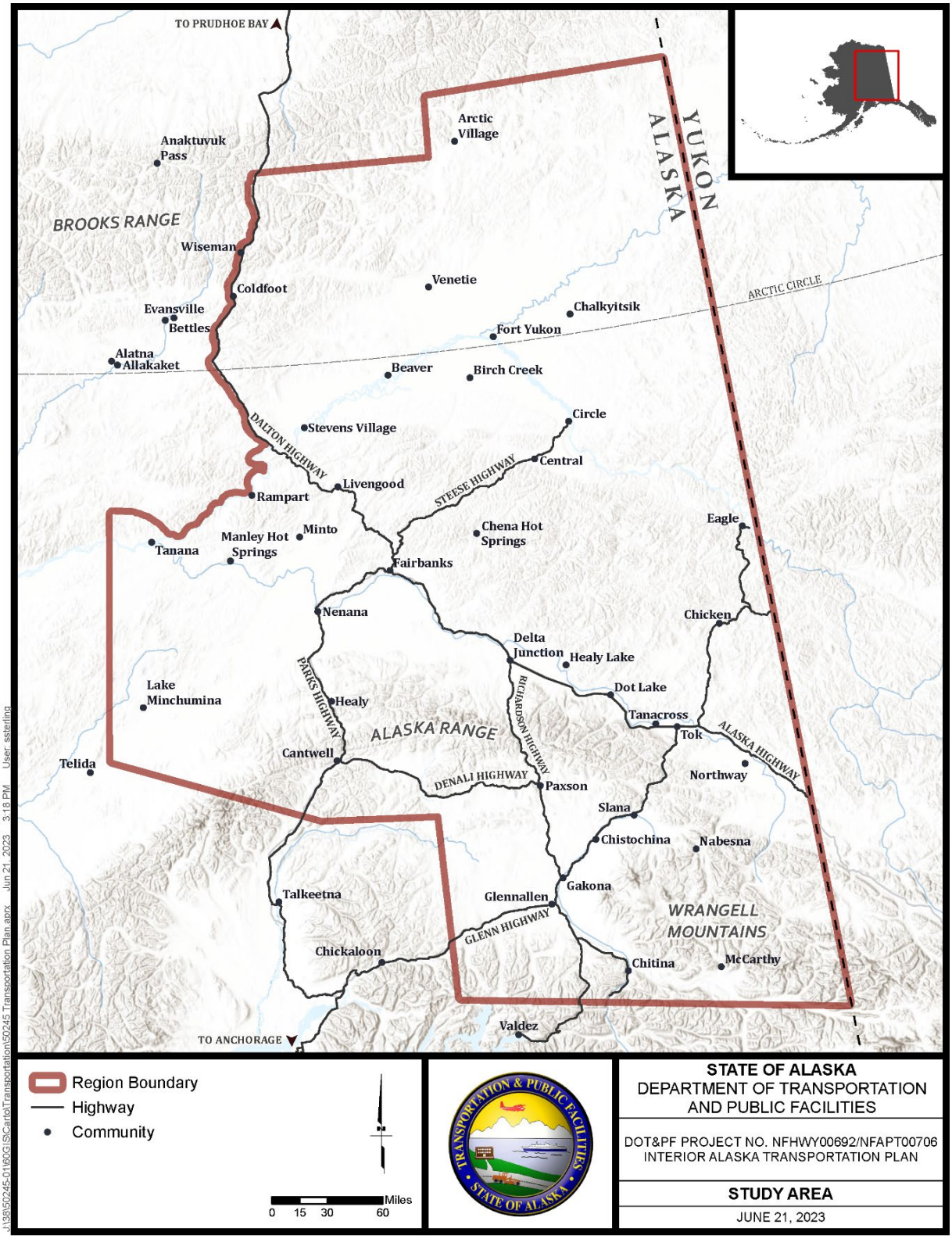

Figure 2. Interior Alaska Transportation Plan Region Study Area & Major Surface Transportation Facilities

2.0 PUBLIC AND AGENCY INVOLVEMENT

2.1 Overview

The IATP is being developed using an efficient and inclusive outreach process. This process is outlined in the Public and Agency Involvement Plan (PAIP), which describes the methods and strategies to identify and engage area stakeholders, communicate information, and seek input throughout the IATP update process.

The PAIP sets out how the planning team will seek input from stakeholders on key issues throughout the planning process. The outreach process strives to provide opportunities for involving the public to contribute to the development of transportation policy guidance and the identification of transportation priorities within Interior Alaska.

As of the date of submission of this memorandum, public and agency involvement has included maintenance of a website, a regularly scheduled e-newsletter publication, five (5) public open house meetings, review and response to public comments, and on-going working group meetings.

2.2 Public & Agency Involvement

The first round of public meetings to support data collection was a traveling "roadshow" held in May 2023 throughout the IATP area with communities located along the road system, including:

- Healy
- Fairbanks
- Glennallen
- Delta Junction
- Tok

An additional meeting in Minto was scheduled but will be rescheduled due to a bereavement in the community.

A virtual meeting component was created using the website to inform and solicit feedback from those unable to attend a public meeting in person. Detailed meeting summaries and an online version of the roadshow presentation can be found on the website at **www.interioralaskatransportationplan.com**.

In addition to the roadshow, a working group of business, community, and agency representatives has been established and meets for regularly scheduled meetings with the planning team. The working group provides a diverse perspective to inform the planning process and the contributions will be summarized in the final IATP Update.

2.3 Key Themes

Over the course of the traveling roadshow, several key themes emerged regarding surface transportation:

- On-going risks regarding flooding of infrastructure
- Concerns with safety of military convoys on major highways
- Roadway safety
- Requests for increased non-motorized transportation facilities
- Roadway maintenance
- Railroad improvements
- Roadway improvements
- Public facilities, such as highway restroom facilities
- Concerns with Kinross's plans to transport ore from Tetlin to Ft. Knox
- Facilities to support tourism industry
- Concerns with DOT&PF emergency response plans
- Access to vital services, such as medical facilities
- DOT&PF coordination with local entities

The key themes are critical in determining issues and concerns of the community, as well as informing the Key Issues & Recommendations section of this memorandum. Although this is only a snapshot of public and agency involvement to date, the planning team will continue to collaborate with local community leaders to provide opportunities for the public to inform the planning process.

3.0 REVIEW OF RELATED PLANNING DOCUMENTS

3.1 DOT&PF Plans

3.1.1 Alaska 2036 Long-Range Transportation Policy Plan Update – Let's Keep Moving 2036 (2016)

The Alaska 2036 Long-Range Transportation Policy Plan Update (2036 LRTP) operates under federal mandate 23 CFR 450.216 and serves as a document to guide the Alaska DOT&PF through the year 2036 by establishing policies and investment priorities. The plan established a vision to provide a transportation system that enables a robust and growing economy and meets the mobility needs of all facility users in the state.

Policies, goals, and actions were determined by addressing trends for travel growth and demand, delivery and supply systems, existing public policy, public expectation, financial capacity, climate change, and extreme weather events.

3.1.2 Alaska Moves 2050: Draft Statewide Long-Range Transportation Plan Update (2022)

The Draft Statewide Long-Range Transportation Plan Update, Alaska Moves 2050, was released for public comment in June 2022. The plan is an update of the 2036 LRTP and is founded on performance-based planning as a framework to support improved decision making, higher return on investments, better accountability and transparency, and improve performance of the transportation system. The draft LRTP sets out the top three transportation priorities by region, and for the Interior these are:

- Mobility for all Alaskans
- Operation and Maintenance of the System
- Resiliency

Future transportation challenges for the Interior include:

- Serving the 50 communities within the Interior
- Providing for how people get around, including using the road/highway, rail, air, and water
- Supporting facilities for the transportation of goods, including on the road/highway, rail, air, and water
- Providing opportunities for economic prosperity, including for mining, tourism, the military, and for subsistence.

The Draft LRTP sets out a range of goals, policies, actions, and performance measures to guide future transportation investment and measure results. Once they are adopted, these will guide future programming of funds for transportation investment in Alaska.

3.1.3 Alaska Moves 2050: Statewide Freight Plan (2023)

The Alaska Moves 2050 Statewide Freight Plan (ASFP) focuses on moving people and goods safely and efficiently while aligning with federal, state, and local transportation priorities, using a performance-based planning approach to measure improvement effort impacts. Trends, challenges, and opportunities related to freight traffic were identified by evaluating safety, travel mode, travel pattern, climate, existing surface condition, and existing facilities data.

For the Interior Region, Alaska's goods movement takes place through trucking, rail, pipelines, waterways, and aviation. It should be noted that although this memorandum is focused on surface transportation, freight movement throughout the Interior includes all modes of transportation and is critical to the region's economy.

Alaska's freight system goals are:

- **Safety:** Increase safety for all modes during the movement of freight
- **Mobility and Access:** Move goods safely, reliably, and cost-effectively across Alaska
- **Economic Vitality:** Facilitate economic growth and lower the cost of goods and services
- **State of Good Repair:** Keep what we have in a state of good repair
- **Resiliency:** Have a freight network that can recover quickly from disruptions
- **Sustainability:** Promote a sustainable, clean, equitable freight system
- **Strategic Partners:** Collaborate with other levels of government, industry partners, and the public
- **Stewardship of the Transportation System:** Find the best, most affordable ways to improve the freight network
- **Performance-Based Management:** Have stable, flexible, and long-term funding sources
- **Transportation Innovation:** Leverage innovations that benefit safety, efficient freight movement, and work force needs

Key trends related to freight truck traffic and the roadway system were identified as:

- Statewide lane miles increased 20 percent and total vehicle miles traveled (VMT) increased by 18 percent, with VMT per capita increasing eight percent (2006-2019).
- Urban-area roadways carry the higher annual average daily traffic (AADT) and total truck volumes while rural-area roadways carry a higher percentage of truck traffic.
- DOT&PF transitioning their pavement management practices from the "worst-first" method to a life cycle planning method.
- DOT&PF has prioritized safety with its federal funding by consistently obligating Highway Safety Improvement Program (HSIP) funding on the order of 90 percent or greater.

Challenges related to freight truck traffic and the roadway system were identified as:

- Limited funding, retiring personnel, studded tire use, and climate change impacts.
- Lack of roadway network redundancy leading to system-wide safety and access vulnerability.
- Travel time reliability is impacted by external factors, such as extreme weather events, roadway maintenance and mitigation, lack of network redundancy, and roadway capacity.
- Bridge height, overhead clearance, load restrictions, and roadway seasonal weight restrictions.
- Sole reliance on HSIP funds for safety improvements without additional state or more flexible federal funding.
- DOT&PF data is inconsistent with established DOT&PF boundaries and federally reported data.

Opportunities identified to address the previously mentioned roadway system challenges include:

- Discussing the potential for jurisdictional transfer of the DOT&PF managed local or collector roads to local agencies.
- Development of Tribal Safety Plans to improve coordination and alignment between DOT&PF, rural, and tribal leaders.
- Expansion of the data-driven safety approach to emphasize treatment cost-effectiveness assessments and Highway Safety Manual screening and evaluation methods at the project level.

- Treating and rehabilitating pavements and bridges in good and fair condition before deteriorating to decrease a project's life cycle cost.
- Continuing to allocate resources for improved data collection, management, and analysis to aid in accurately prioritizing investments, management of assets, and required reporting.

3.1.4 Alaska Statewide Active Transportation Master Plan (2018)

The Alaska Statewide Active Transportation Master Plan (ASATP) is aims to provide Alaskans with access to equitable, accessible, and safer walking and bicycling opportunities as an integral part of daily life. The ASATP outlines federal, state, and local policy, design, and funding guidance to aid communities in their efforts to improve active transportation facilities and mode choice options throughout Alaska.

Public engagement and analysis of data was used to identify key goal areas, their associated objectives, and performance measures to improve active transportation facilities and access over the 20-year plan period. The ASATP also identifies trends within the state and outlines how active transportation can aid in the improvement of key transportation deficiencies and impacts, with a focus on quantifying the economic benefits of increased active transportation mode choice. The ASATP acts as a supporting policy to achieve the goals and vision outlined in the *Alaska LRTP*, specifically related to active transportation facility best practice, design, planning, safety, and maintenance. It is best practice for the ASATP to be incorporated into other state, regional, and local plans that address active transportation.

3.1.5 Alaska State Rail Plan (2016)

In 2008, United States (US) Congress passed the Passenger Rail Investment and Improvement Act (PRIIA) which focuses on improving passenger rail service in the US. PRIIA resulted in the requirement for any state seeking federal assistance for either passenger or freight improvements to have an updated state rail plan. The development of an Alaska State Rail Plan (ASRP) was assigned to the Alaska DOT&PF under the Alaska Statute 44.42.050 which charges the Alaska DOT&PF with the responsibility for planning activities for all modes of transportation.

The ASRP identifies both passenger and freight rail opportunities for proposed investments and future studies. System wide, the plan suggests grade-separation of all NHS at-grade rail crossings, grade-separation of significant non-NHS at-grade crossings, and Alaska Railroad Corporation (ARRC) Positive Train Control. Long-term strategies identified include extending transportation facilities to provide surface access to resource development, and standardizing Alaska's track to a 286,000 pound capacity. Projects specific to the Interior Region, include:

- ARRC Fairbanks Area Line Relocation - Phase 1
- Cantwell Intermodal Facility
- ARRC Nenana Rail Line Relocation
- Fairbanks Area Rail Plan
- ARRC Northern Rail Extension
- ARRC Healy Canyon Stabilization
- ARRC Fairbanks Airport Branch and Eielson Branch Staging Areas
- ARRC Fairbanks Freight Intermodal Terminal Rail/Truck Staging Area
- Extending Transportation Facilities to Provide Surface Access to Resource Development Opportunities

In addition to the project noted above, the ASRP also proposes projects for economic analysis, periodic re-evaluation, and study in the Interior, including:

- Nenana/Dunbar to Livengood Railroad Extension

- Rail Extension to North Slope
- Alaska-Canada Rail Link
- Island Railroad1 to Yukon Territory

It should be noted that management and operations of Alaska railroads are the responsibility of ARRC, a state-owned corporation, established by the Alaska Railroad Corporation Act of 1984. The Alaska State Rail Plan Draft proposes continued support for ARRC, memorializes a desire by the state to invest in short and long-term passenger and freight projects, and examines the potential economic benefits and costs of rail extensions. To date, this plan has not been adopted or finalized.

3.1.6 Alaska Strategic Highway Safety Plan (2018)

The Alaska Strategic Highway Safety Plan (SHSP) focuses on a coordinated framework that works to reduce fatalities and serious injuries on all public roads. The SHSP is updated on a rolling five-year basis and is a cross-agency approach to address critical factors contributing to traffic-related fatalities and serious injuries by establishing performance goals, strategies, and action steps.

The SHSP identifies champions for each action step, including DOT&PF and Alaska's Metropolitan Planning Organizations (MPOs), including Fairbanks Area Surface Transportation (FAST) Planning. Strategies are divided into three areas of emphasis, including Driver Behavior, Roadways, and Special Users. The actions identified for each champion agency includes the emphasis area and overall strategy to address safety. Interior agencies including DOT&PF and FAST Planning have been identified as champions in each emphasis area and are tasked with action steps that work together for statewide change.

The common theme that relates to the IATP is the need for improved data collection procedures, including both motorized and non-motorized users, and review and revision of statewide policies. Overall, the SHSP does not provide specific steps for the Interior Region but does emphasize department-wide actions that would benefit all of Alaska.

3.2 Metropolitan Planning Organization Plans

The IATP area includes one (1) MPO, FAST Planning; FAST Planning is responsible for transportation planning and programming federal transportation funds within the defined Metropolitan Planning Area (MPA) through a Metropolitan Transportation Plan (MTP) and the accompanying Transportation Improvement Program (TIP), which is incorporated by reference into the DOT&PF Statewide Transportation Improvement Program (STIP). Because the planning process has already been completed for these projects within the MTP, projects identified will be incorporated into the overall IATP Funding & Implementation Strategy.

3.3 Other Plans

3.3.1 Bureau of Land Management Alaska Recreation Guide (2022)

This brochure provides information and guidelines for recreation on BLM-owned land and includes a map of recreation sites and opportunities.

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[1] Note: An island railroad is a railroad that is not connected to the regional or national rail network. The White Pass & Yukon Route Railway line is an example of an island railroad. https://wpyr.com/

3.3.2 Fairbanks North Star Borough 2023 Comprehensive Recreational Trails Plan (2023)

This plan identifies existing trails and planned trail corridors throughout the Fairbanks North Star Borough. The establishment and protection of public access to trails is included as a key goal of the plan. Several existing and proposed trails are near, along, or traverse highways and roads within the borough and the IATP area.

3.3.3 Alaska 2022-2023 Tourism Impact Model (2023)

This document from the Alaska Travel Industry Association (ATIA) provides an analysis of visitor data for the summer 2022 and winter 2022-23 seasons. The analysis includes data about the volume and impact of visitors by region. The Interior region defined in the ATIA document does not fully align with the IATP area, but the data is still useful. Approximately 583,000 people visited the Interior in summer 2022 and an additional 278,000 people visited over the winter, spending $702 million and $253 million, respectively.

3.3.4 Community Plans

The IATP area includes over 60 communities, of which 24 have a federally recognized tribal government. To better understand the issues and needs in these communities, plans for 16 communities were reviewed.

Common themes include the need for new/improved transportation facilities including facilities focused on pedestrian and bicycle needs, considerations for flooding and wildfire damage, increased access to hospitals and medical care, and a focus on economic growth. Most community plans referenced surface transportation facilities which are not owned or maintained by DOT&PF; however, the community infrastructure often connects back by aviation or local road to a major DOT&PF-owned facility. On-going coordination with these communities' leadership will better inform how DOT&PF can support transportation planning efforts as appropriate.

4.0 SURFACE TRANSPORTATION SYSTEM OVERVIEW

4.1 Roads & Highways

The highway system in the IATP area is comprised of the Alaska Highway System (AHS) and the National Highway System (NHS). The National Highway System is comprised of interstates, defense routes, principal arterial roads and routes which connect major intermodal facilities such as airports, ports, and ferries. The AHS includes intrastate highways connecting communities, recreational areas, and resource lands within the IATP area.

4.1.1 National Highway System in Alaska

The NHS is established under US Code 23, Section 103 (23 USC 103) and consists of the Interstate Highway System, as well as any additional roads deemed appropriate. Roadways identified as being a part of the NHS are important to the nation's economy, defense, and mobility. The NHS includes only four percent of the nation's roads but is responsible for more than forty percent of all highway traffic, 75 percent of heavy truck traffic, and 90 percent of tourist traffic.

Although Alaska is not part of the contiguous US and roadways do not serve as traditional interstate connections, roadways connecting one US state to another, there are approximately 1,248 miles of NHS roadways located in the IATP area. Besides a few exceptions to the rule, all NHS routes in Alaska are managed by DOT&PF.

4.1.2 Alaska Highway System

The AHS is established under Alaska Administrative Code (AAC) 17, section 05.010 (17 AAC 05.010) and consists of roadways that meet at least one of the three classifications listed below:

- Roadways included within the NHS
- Are of statewide significance but are not included in the NHS
- Highways and transportation-related facilities with designation under the Community Transportation Program (17 AAC 05.170(d)) or the Trails and Recreational Access for Alaska (TRAAK) Program (17 AAC 05.170(e)).

As a result of these classifications, all roads identified as part of the NHS in the state of Alaska are also part of the AHS, but not all AHS roads are a part of the NHS. In total, the IATP area includes 1,248 miles designated as NHS, and an additional 762 miles are designated as AHS roadways.

4.1.3 National & Alaska Scenic Byways

The IATP area includes highways that are established as Alaska or National Scenic Byways. The Alaska Scenic Byways Program was established in 1993 to celebrate the beautiful landscapes visible along Alaska's highways. The National Scenic Byways Program[2], established in the Intermodal Surface Transportation Efficiency Act of 1991, is a voluntary, grass-roots effort administered through FHWA to recognize, preserve, and enhance some of America's most beautiful corridors. The IATP area includes roadways that have been designed in both the National Scenic and Alaska Scenic Byways programs. The Glenn Highway and Parks Highway are designed National Scenic Byways by FHWA[3], while the Steese, Taylor & Top of the World, and Richardson Highways are designated as an Alaska Scenic Byway.

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[2] Scenic America. About the National Scenic Byways Program. Retrieved June 12, 2023, from https://www.scenic.org/why-scenic-conservation/scenic-byways/about-the-national-scenic-byways-program/

[3] Scenic America. Alaska Byways. Retrieved June 12, 2023, from https://www.scenic.org/state/alaska/

4.1.4 Functional Roadway Classification

The functional classification of each roadway within the IATP area is found in *Figure 3*. The following section describes each functional classification and the identified facilities within the IATP area.

4.1.4.1 Interstate

According to the Federal Highway Administration (FHWA), interstates are the highest classification of arterials. Their purpose is to support long-distance travel and mobility linking urban areas within the US. They are designed to manage a high volume of traffic to support industry and communities throughout a region and between states, and in the case of the IATP area, connection with Canada.

Interstates in the IATP area include the Alaska, Glenn, Parks, Richardson, and Tok Cutoff Highways.

4.1.4.2 Arterial

The FHWA identifies two types of arterials, Principal Arterial-Other and Minor Arterial. A Principal Arterial-Other roadways operate like interstates in that they support long-distance travel and serve urban centers in combination with interstates. They are designed to support high volumes of traffic and provide connectivity between urban centers. In a rural setting, a single arterial may be the primary roadway serving an area. In these instances, the arterial provides critical corridor movements for industry, goods and services and travel. Minor arterial roadways are designed for trips of moderate length. They serve smaller geographic areas and rural population centers and are typically linked with major arterial roadways.

Arterial roadways in the IATP area include Chena Hot Springs Road, the Elliott Highway, Steese Expressway/Highway, Taylor Highway and Top of the World Highway.

4.1.4.3 Collector

Collector roadways are designed to collect traffic from local roads and connect them in with the arterial network. There are two sub-classifications, major and minor collectors. These facilities are used for shorter distances and provide intra-community travel rather than regional or statewide travel.

Major or minor Collector roadways in the IATP area include Edgerton Highway/McCarthy Road and the northern segment of the Taylor Highway serving Eagle.

4.1.4.4 Local Roads

If roadways are not classified as Interstates, Arterials or Collectors, they are, by default, Local roads. These facilities are intended for short trips and typically provide direct access to homes and businesses in communities. While some local roads are owned and maintained by DOT&PF and are important elements of the Interior region's system, they are generally serving a specific purpose such as access to airports or local services (i.e., solid waste sites). These roads have not been included in this report.

4.1.4.5 Industrial Roads

Industrial roads provide access to industrial zoned land. These roadways also provide access for other development that would result in an increased frequency in truck movements. Although all roadways can provide access to industrial uses or industrial zoned land, not all roads meet the criteria to be classified as an industrial road and are not considered a functional class.

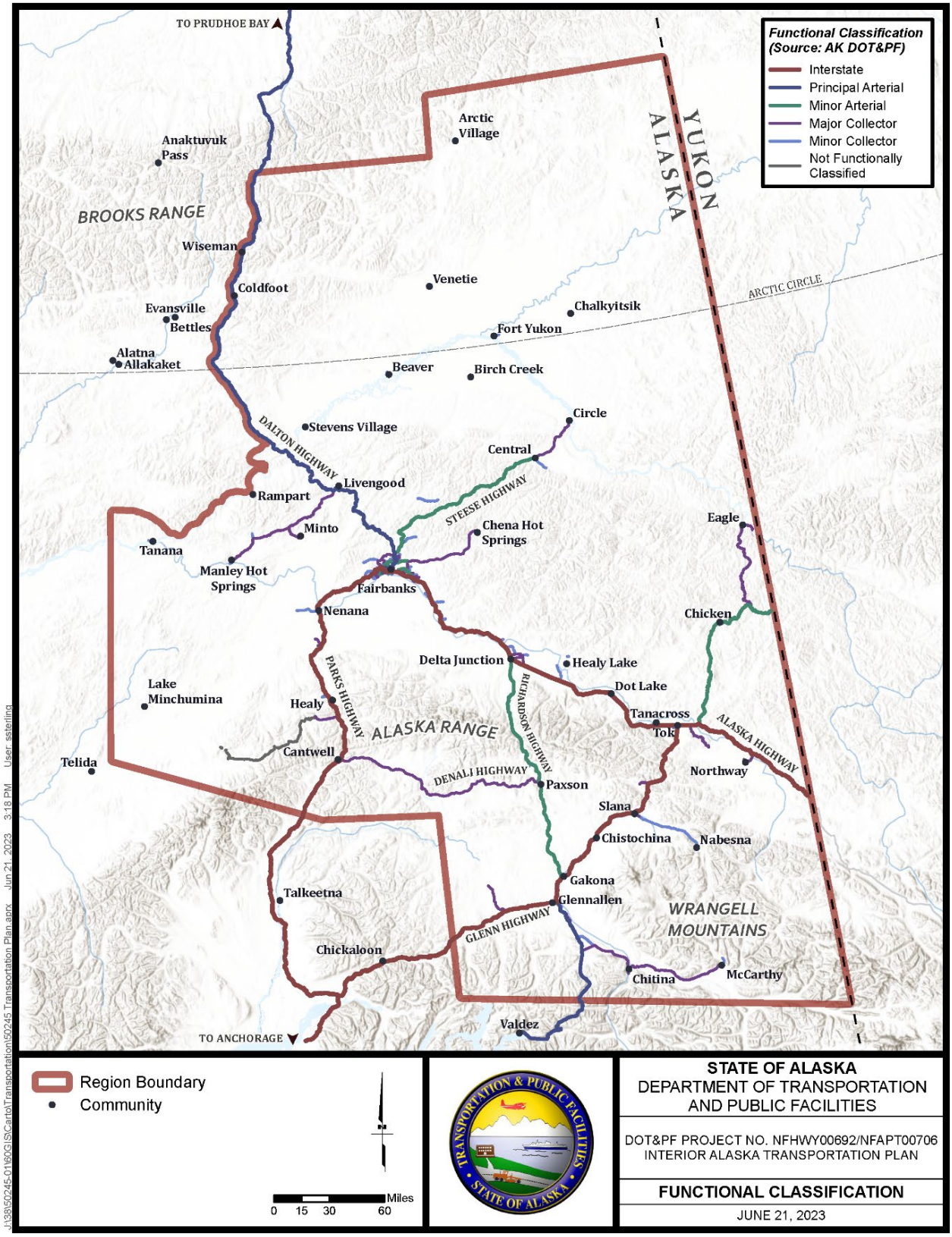

Figure 3. Interior Alaska Roadway Function Classification

4.2 Non-Motorized Facilities

4.2.1 Non-Motorized Facilities Defined

For the purposes of the IATP, non-motorized facilities are defined as surface transportation facilities adjacent or within the DOT&PF right-of-way. Winter access, which can include various user and vehicle types including non-motorized vehicles, will be addressed in Technical Memorandum 3: Winter Access in the Interior. There is not currently a full inventory of DOT&PF-owned non-motorized facilities.

4.2.2 DOT&PF's Commitment to Pedestrians & Bicyclists

In June 1995, the Commissioner of the DOT&PF directed: "It is the policy of the department that accommodations for pedestrians and bicyclists be considered and implemented for all of our highway projects.[4]" Exceptions to this policy must be approved by the Commissioner on a case-by-case basis. Formal directives continued to support this policy statement by issuing procedures for non-motorized facilities to be included in DOT&PF roadway projects, such as adopting revisions to Chapter 4 (Project Development) of the Highway Preconstruction Manual.

In 2019, the DOT&PF adopted the ASATP to plan for access to equitable, accessible, safer walking and bicycling opportunities as an integral part of daily life in Alaska. The ASATP establishes five goal areas with associated objectives and performance measures: Safety, Health, Maintenance/System Preservation, Connectivity, and Economic Development. The ASATP also identifies trends within Alaska and outlines how active transportation can aid in the improvement of key transportation deficiencies and impacts, with a focus on quantifying the economic benefits of increased active transportation mode choice. The ASATP acts as a supporting policy to achieve the goals and vision outlined in the *Alaska LRTP*, specifically related to active transportation facility best practice, design, planning, safety, and maintenance, and is considered a guiding document for the IATP planning process in reference to non-motorized facilities within the IATP area.

4.3 Bridges

The DOT&PF is responsible for maintaining 194 bridges throughout the IATP area, as illustrated in *Figure 4*. Specific bridge locations are found within the Existing Conditions section of this memorandum, organized by roadway facility. A complete list of bridges, arranged by roadway can be found in Appendix 1: Bridge Inventory.

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[4] *Alaska Department of Transportation & Public Facilities. Alaska Statewide Active Transportation Master Plan. Retrieved June 12, 2023, from https://dot.alaska.gov/stwdplng/areaplans/modal_system/docs/AK-Statewide-Active-Transportation-Plan.pdf*

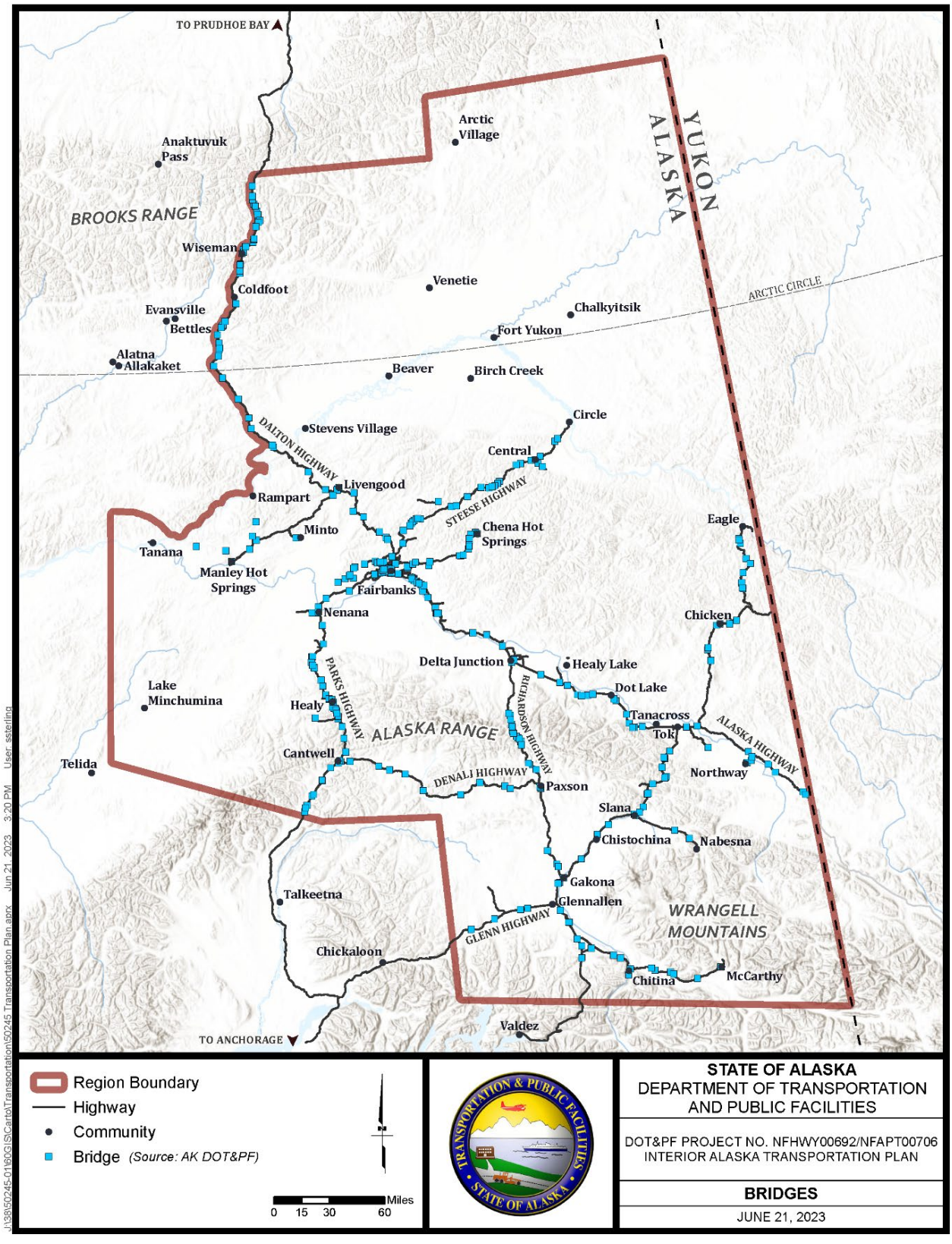

Figure 4. Interior Alaska Bridges

4.4 Safety

4.4.1 Average Annual Daily Traffic

The Traffic Data Program within the DOT&PF is responsible for the collection, analysis, and reporting of traffic volumes on roadways within Alaska. Three field offices, including one in Fairbanks, collect both volume and class data which is used to generate AADT and the corresponding truck traffic percentage of AADT, as well as Truck Class Data and Continuous Count data. According to *Methodology Behind Traffic Data Collection and Statistics*[5], data are used to meet reporting requirements implemented by the FHWA to inform multiple systems and programs administered by FHWA to evaluate performance of roadways.

Figure 5 provides an overview of AADT for each DOT&PF-owned roadway in the region.

AADT is the baseline informational data used to determine traffic volume on a roadway in both design and planning for surface transportation systems. Over time, monitoring the increase, decrease, or plateau of AADT data can provide helpful insights for a state's transportation system capital improvement needs. In addition, AADT is the starting point for calculating VMT and provides valuable in assisting DOT&PF in meeting reporting requirements for FHWA.

For the Interior region, the trend of AADT over the last decade has remained relatively flat or decreased over time. Section 5, Existing Conditions, of this memorandum provides more detailed AADT information for each roadway analyzed within the Interior Region.

[5] *Alaska DOT&PF. Methodology Behind Traffic Data Collection and Statistics, alaska.gov, June 2020. https://dot.alaska.gov/stwdplng/transdata/pub/Methodology-Traffic-Data-June-2020.pdf. Accessed May 2023.*

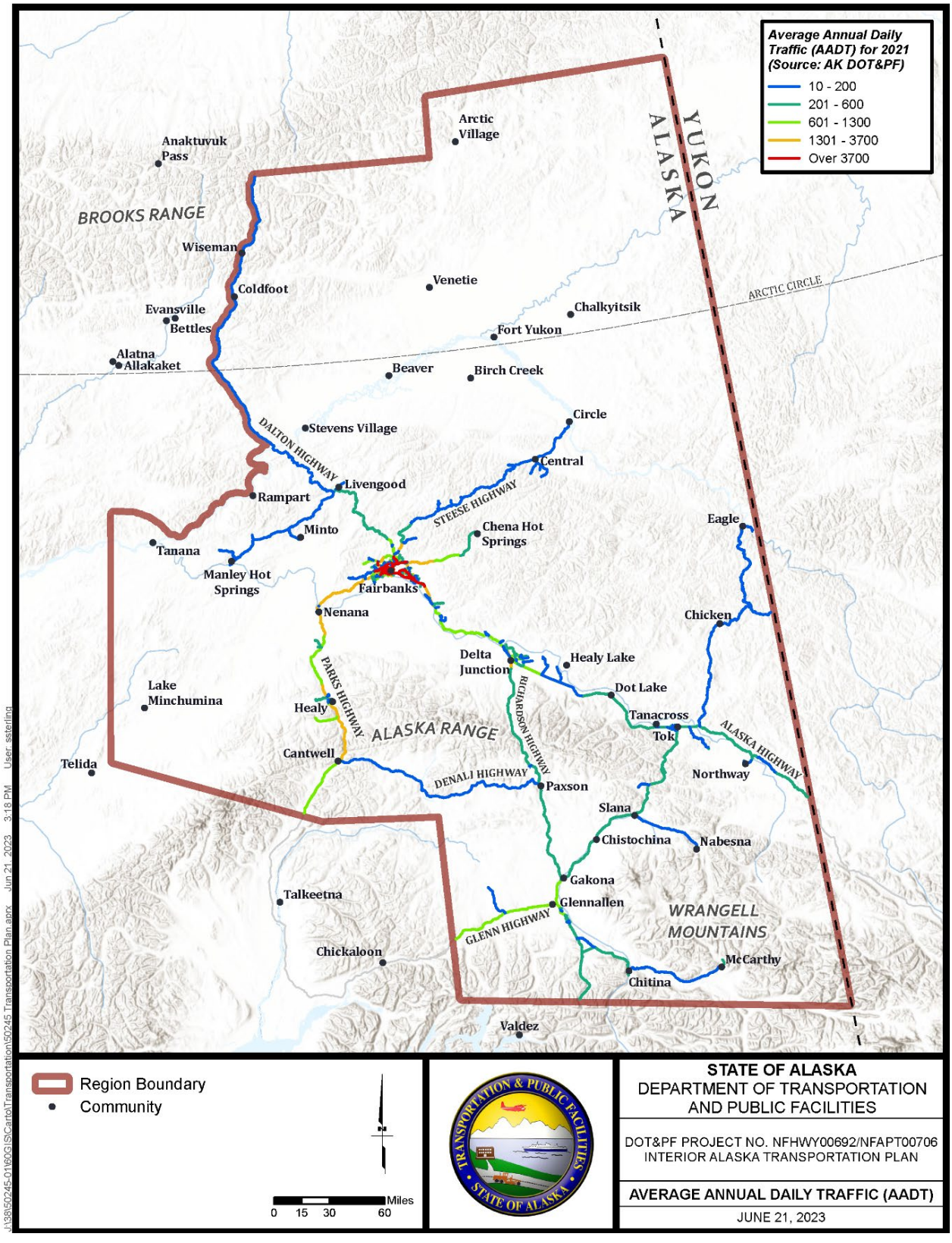

Figure 5. Interior Alaska Average Daily Traffic for 2021

4.4.2 Vehicle Crashes

Crash data provided by DOT&PF contained crashes occurring within the region between 2013 and 2021. The reports associated with each incident included information on number and severity of injuries and/or fatalities, number of motorized/non-motorized vehicles involved, weather conditions at time of incident, and lighting conditions at time of incident.

During the nine-year period analyzed, roadways within the region had 2,558 crashes documented due to either multiple motor vehicles colliding or single motor vehicle collisions. The highest number of crashes occurred in 2013, with 387 documented incidents. In recent years the number of crashes reduced from 252 in 2019 to 212 in 2021. Most crashes happened during the winter months of November, December, January, and February. The years with the highest number of fatalities in the region were 2017 and 2018 with 15 and 12 fatalities respectively.

Most crashes within the IATP area were a result of single vehicles running off the road, which accounted for 1,285 incidents, or 50 percent of all incidents involving motorized vehicles. Even with the limited hours of daylight during the winter, nearly half of all winter incidents occurred during daylight hours.

4.4.3 Non-Motorized Crashes

Between 2013 to 2021, the region had 909 crashes involving wildlife, bicycles, off-road vehicles, or pedestrians. This accounts for 26 percent of all crashes (3,467 incidents). Eight-hundred-and-eighty-seven of these crashes were the result of animal versus vehicle, with the most occurring in 2014 and 2015 with 126 and 125 respectively. Of the incidents not involving wildlife, eight occurred between pedestrians and motorized vehicles and five occurred between bicycles and motorized vehicles. Thirteen of the 887 non-motorized crashes resulted in a fatality.

4.4.4 All-Purpose Vehicles on Public Roads

As of January 1, 2022, all-purpose vehicles (also known as all-terrain vehicles, utility terrain vehicles, and off-road vehicles) are allowed to be used on Alaska's roadways with speed limits under 45 miles per hour, unless otherwise prohibited by local laws or regulations. The new law requires all-purpose vehicles (APVs) to be registered as a motor vehicle and have certain equipment to be driven on roadways and requires that operators of APVs on roadways have a valid driver's license. This law has raised safety concerns in many communities, but due to the recency of its implementation sufficient data is not yet available.

This law does not apply to snowmachines and hovercraft.

4.5 Rail

The Alaska Railroad extends from Seward and travels north to Fairbanks and includes 470 miles of main line and 12 miles of secondary line serving Whittier. The railroad within the region is shown on *Figure 6*. The railroad is managed and operated by ARRC and is categorized as a Class II railroad, indicating an annual operating revenue of less than $250 million. The railroad provides passenger and freight transportation.

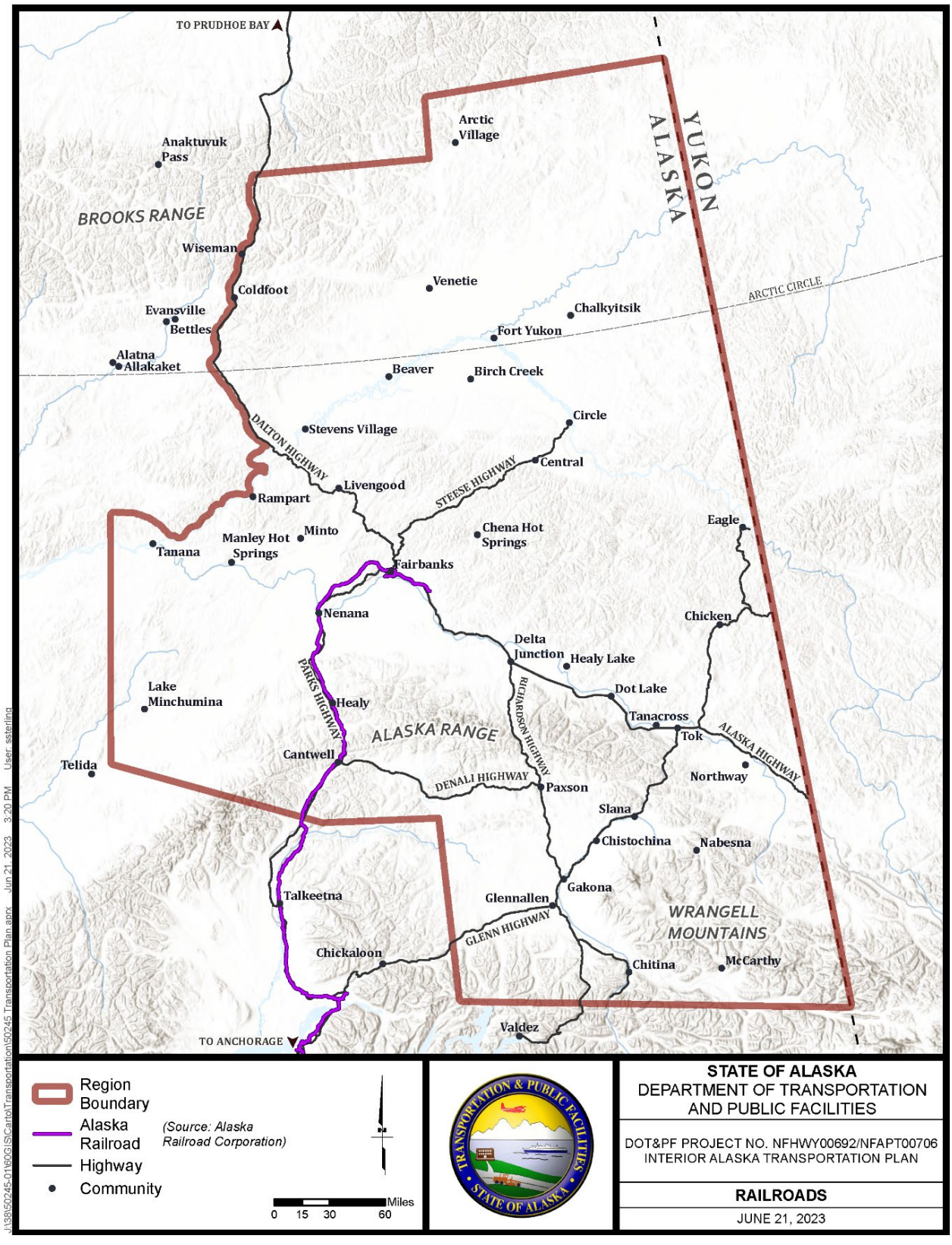

Figure 6. Interior Alaska Railroads

4.6 Freight

Freight commodity flows within Alaska and the Interior are primarily dependent upon heavy truck, rail, and marine/riverine transportation modes. Top commodities by value in the region are petroleum products, which are transported via the Trans-Alaska Pipeline System (TAPS) and are primarily distributed within the IATP area using marine/riverine transportation modes.

Key intermodal connection points within Interior Region are identified within the ASFP and include the Nenana marine/riverine port, the TAPS, the Fairbanks International Airport, and nearly all of the region's highways. The ASFP also identifies critical urban and rural freight (trucking) corridors and their extent within the IATP area. The urban corridors identified are in Fairbanks, while rural corridors are highway specific. These critical freight corridor locations are described in *Table 1*.

Table 1. Urban and Rural Freight Corridors

Route	Built Environment	Start	End	Length (Miles)
Van Horn Road	Urban	University Avenue S	South Cushman Street	3.9
South Cushman Street	Urban	Richardson Highway	Van Horn Road	0.5
Steese Highway	Urban	Johansen Expressway	Hagelbarger Avenue	4.4
Richardson Highway	Urban	Richardson Highway MP 351	Petro Star Refinery	2.9
Peger Road	Urban	Johansen Expressway	Tria Road	3.1
Dalton Highway	Rural	Elliott Highway	Chandalar	235

The ASFP identified and ranked locations where the reliability and delay for truck traffic results in high cost to the freight industry and thus are determined to be freight bottleneck locations. These identified locations are largely within the urban area of Fairbanks. The bottleneck locations within the region are listed by rank in *Table 2*.

Table 2. Interior Region Freight Bottleneck Locations by Severity[6]

Rank	Location	Roadway	Direction
1	3rd Street/Steese Highway Intersection	Steese Highway	WB
2	Geist Road/Johansen Expressway/University Avenue Intersection	Johnson Expressway	WB
3	Geist Road/Johansen Expressway/University Avenue Intersection	University Avenue	NB
4	Johansen Expressway/Steese Highway	Steese Highway	EB
5	Johansen Expressway/Steese Highway	Johansen Expressway	EB
6	Geist Road/Johansen Expressway/University Avenue Intersection	University Avenue	SB

[6] *Alaska Department of Transportation & Public Facilities. Alaska Moves 2050 Long-Range Transportation Plan & Freight Plan. Transportation and Freight Technical Memorandum. Retrieved June 12, 2023, from https://alaskamoves2050.com/wp-content/uploads/2022/09/Appendix-D-Consolidated_Transportation-Assessment-August-2022-1.pdf*

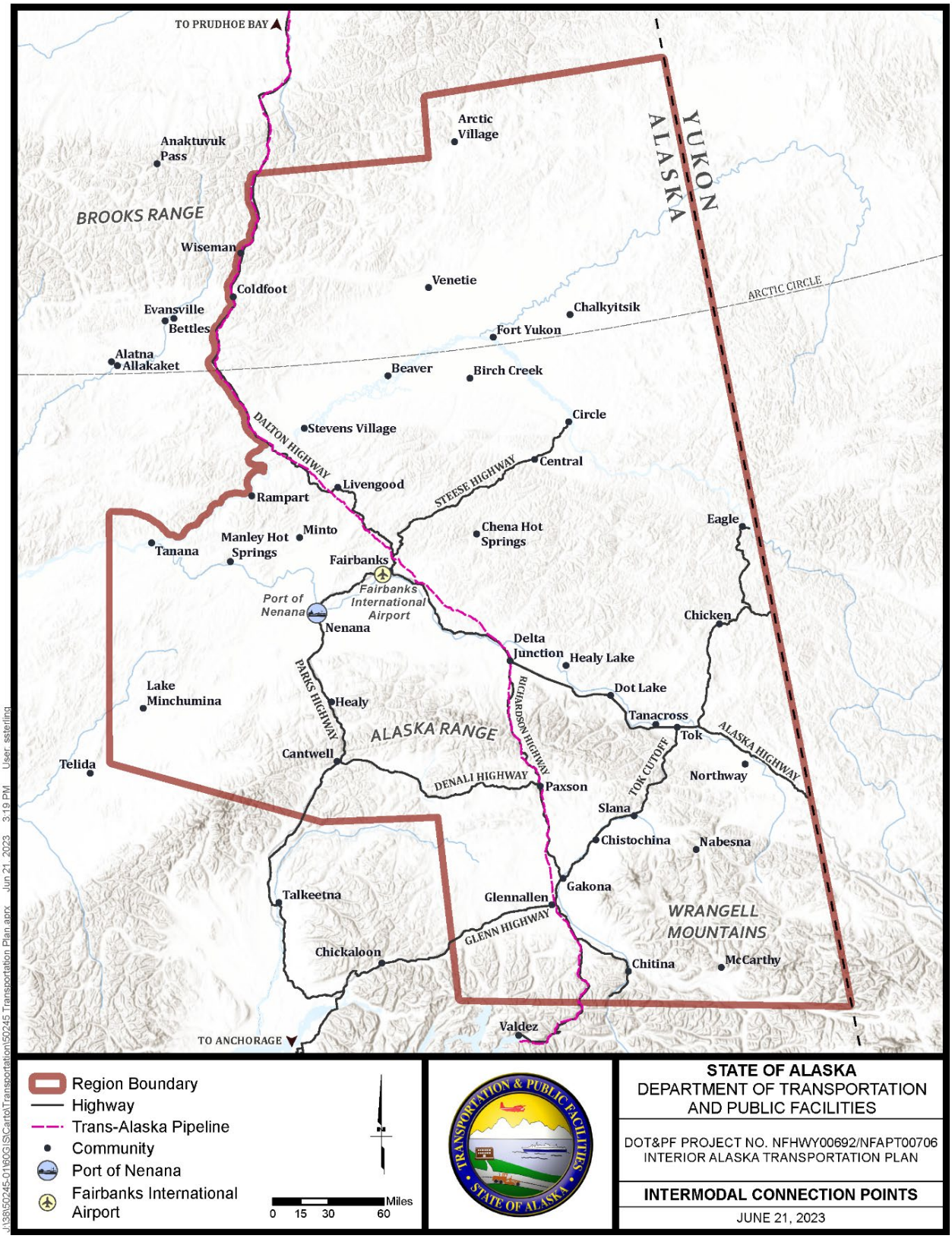

Figure 7. Interior Alaska Intermodal Connection Points

4.7 Transit

The metropolitan area of Fairbanks including North Pole is served by the Metropolitan Area Commuter System (MACS) transit system. There is the main MACS transit system operates on a fixed-route bus service and is supplemented with "Van Tran", an on-demand transit option for individuals who are unable to use the fixed-route locations. Van Tran requires users to complete an application to determine eligibility.

The Interior Alaska Bus Line travels from Anchorage to Tok on the Glenn Highway and from Tok to Fairbanks on the Richardson Highway with stops along the way. Pricing is dependent on the destination but ranges from $30 to $65 for more local destinations and $85 to $130 for locations outside of the Interior region, such as Palmer and Anchorage. The routes run daily, and reservations are recommended.

The village of Gulkana has Soaring Eagle Transit, which operates on a fixed schedule for service to Anchorage, Valdez, and Copper River Basin. Additionally, Soaring Eagle Transit operates a call out service with a 50-mile radius. These services allow users access to health care, education, employment, recreation, entertainment, and shopping. Users are required to make reservations for service 24-hours in advance.

4.8 Land Use

Land use designations and ownership influence where roads and access points can be constructed. The following sections describe key statutes and laws dictating overland access in Alaska.

4.8.1 Revised Statute 2477

Revised Statute (RS) 2477 was derived from Section 8 of the Mining Law of 1866 and provided a legal means for establishing highways over public lands. The term "highway" had a different meaning at the time the law was written but has since been interpreted to refer to a broad range of overland transportation infrastructure, including but not limited to modern highways, roads, trails, tunnels, and bridges. RS2477 rights of way were established until the law was repealed in 1976, though they were effectively stopped in Alaska in 1969 when Public Land Order (PLO) 4582 mandated a land freeze in anticipation of the Alaska Native Claims Settlement Act. RS2477 rights of way that were established prior to the law being repealed continue to be valid access routes.

Examples of RS2477 rights of way in the Interior include Farmer's Loop Road in Fairbanks, the Nabesna-Chisana Trail in Wrangell-St. Elias National Park, and Klutina Lake Road near Glenallen. Alaska Statute 19.30.400 lists more than 600 trails that have been accepted as RS2477 rights of way, and many more have been identified since AS 19.30.400 was written.

Designation as an RS2477 does not provide unconditional use of the right of way. The landowner has significant say in how the right of way can be used and many RS2477s are co-managed by the State of Alaska (e.g., DNR) and the landowner.

For example, the Bielenberg Trail in Yukon Charley National Preserve is an established RS2477 that was used to support mining activities prior to ANILCA. Following ANILCA, miners were required to obtain permits for moving heavy equipment over the Bielenberg Trail. One miner felt that permits were unnecessary because this was an RS2477, so he drove a large bulldozer over the trail, causing significant damage to the environment.

The subsequent legal cases established that:

1. The Federal government had authority to regulate access and mining within Alaska's national parks.
2. Regulations did not deprive the defendant of "adequate and feasible" access to his claims and were within power granted under property clause.
3. The Federal government had authority to regulate travel on trails, even assuming it was established right-of-way (RS2477).

4.8.2 PLO 5150

PLO 5150 reserves an area of land within Alaska as a transportation and utility corridor to provide federal access along the Trans-Alaska oil pipeline route. These lands are managed by the Bureau of Land Management (BLM) and are subject to development restrictions. The Dalton Highway, which creates the western boundary of the IATP area, is within PLO 5150 lands.

4.8.3 Alaska National Interest Lands Conservation Act Title XI

Section 1104 of the Alaska National Interest Lands Conservation Act (ANILCA) establishes an evaluation process for transportation and utility systems within conservation system units and other designated conservation areas. This law was intended to provide "a single comprehensive statutory authority for the approval or disapproval of applications" which requires the participation of all federal agencies. ANILCA Title XI can be relevant to the development of road corridors across federal lands, if the route will cross through conservation areas.

4.8.4 17(b) Access Easements

17(b) easements are established under the Alaska Native Claims Settlement Act (ANCSA) and reserve the right of the federal government to provide public access through private lands to reach public lands and waterways. Establishment of these easements is a collaborative process; for example, the Copper River Access Study involves Ahtna, Inc., the National Park Service, the Bureau of Land Management, the Alaska DOT&PF and the Federal Highway Administration (FHWA) Western Federal Lands. This access study seeks to establish a 17(b) easement to provide public access to the Copper River through Ahtna land and has involved analysis of multiple possible routes.

4.9 Tourism and Recreation

In the summer of 2022, over 580,000 people visited the Interior and spent over $700 million dollars[7]. Travelers, whether visitors or Alaska residents, enjoy the opportunities for recreation and exploration in the region year-round, making tourism and recreation important economic drivers across the Interior. Activities range from road trips to the Arctic Circle to bus tours in Denali to dipnetting in Chitina; Table 3 includes a more extensive, though not exhaustive, list of seasonal recreational activities.

[7] *https://www.alaskatia.org/sites/default/files/2023-12/ATIA%20Alaska%20Tourism%20Impact%20Modeling%202022-2023%20-%20FINAL.pdf*

Table 3. Common Recreational Activities in the Interior.

Winter	Summer
Snowmachining	Biking
Fat Tire Biking	Hiking
Skiing (Alpine, Nordic, Back Country)	Mountaineering
Dog Mushing	Camping
Ice Climbing	Hunting
Mountaineering	Fishing
Hunting	Boating
Ice Fishing	Flightseeing
Flightseeing	Train Travel
Aurora Viewing	Road Trips

Traffic volumes and visitor experiences can be impacted by many factors, some of which are beyond the scope of the transportation system. For example, the recent decline in salmon populations has resulted in a lack of recreational or subsistence fishing in some rivers. Other factors are more directly related to the transportation system, such as road conditions, signage, and public amenities along travel corridors. Access to trailheads, public lands, and intermodal connections like boat ramps is a key feature of the AHS for recreators in the Interior. Waysides are also an important feature for recreation and safety. There are 1,064 known waysides in the IATP area, ranging from small pull-outs to large parking lots with public restrooms, trailheads, and picnic tables. Some waysides and facilities are only open seasonally.

4.10 Maintenance

4.10.1 Facilities

The region is comprised of six maintenance districts: Mat-Su, Dalton, Fairbanks, Tazlina, Denali, and Tok. There are a total of 25 maintenance stations responsible for the roads. *Table 4* identifies these stations, the areas they service, days of operation, and average number of operators where applicable.

4.10.2 Pavement Management and Preservation

To successfully implement pavement preservation measures, DOT&PF documents pavement conditions annually along roadways throughout Alaska and issues weight restrictions within the IATP area. Road Surface Profiling[8] (RSP) equipment is used to analyze pavement conditions including cracking, rutting and smoothness, which are defined as:

- **Roughness:** irregularities in the pavement that impact ride quality, measured using the International Roughness Index (IRI)
- **Rutting:** depressions in the pavement surface that run in the same direction as travel in the lane

[8]Alaska Department of Transportation & Public Facilities. Pavement Management and Preservation Office. Retrieved June 12, 2023, from https://dot.alaska.gov/stwddes/asset_mgmt/pave_mgt.shtml

- **Cracking:** fissures or discontinuities in the pavement surface, which may or may not extend through the entire thickness of the pavement

The surface condition information is incorporated into the asset management system where it is compared with traffic data and other information to help inform estimates on pavement life. The data is collected and published annually and can be used to inform capital project timing and funding.

In addition to surface condition monitoring, DOT&PF preserves paved roadways in the interior with the implementation of seasonal weight restrictions on certain roadways. Additional restrictions such as seasonal weight restrictions are placed on vehicles that have a gross vehicle weight (GVW) over 10,000 pounds. These restrictions begin at the start of spring break-up to minimize damage to roadways and can reduce allowable GVW by as much as 50 percent, impacting the quantity of freight that can be moved during this period of time. Restrictions are dependent on local weather, soil conditions, and frost depth and therefore vary by year and by highway.

4.10.3 Winter Road Maintenance Priority Identification

The DOT&PF uses priority level identification to assess the times required to provide winter maintenance. Winter conditions vary and the actual response times may be influenced by the severity and length of a storm. Non-motorized facilities such as sidewalks are assigned the same priority level as the road within the accompanying right-of-way. Five priority levels are used:

- **Priority Level One:** High volume, high-speed highways, expressways, minor highways, all safety corridors, and other major urban and community routes. These roads may take up to 12 hours to clear following a winter storm event.
- **Priority Level Two:** Routes identified as lesser priority based on traffic volume, speeds, and uses. Typically, these are major highways and arterials connecting communities. These roads may take up to 18 hours to clear following a winter storm event.
- **Priority Level Three:** Major local roads or collector roads located in larger urban communities. These roads may take up to 24 hours to clear following a winter storm event.
- **Priority Level Four:** Minor local roads that provide residential or recreational access. These roads may take up to 30 hours to clear following a winter storm event.
- **Priority Level Five:** These are roads that are designated as “no winter maintenance” routes. They are generally only cleared in spring to prepare the road for summer traffic.

Table 4. DOT&PF Maintenance Stations

District	Station Name	Area Covered	Days of Operation	Avg # of Operators
Dalton	Livengood	Elliott Hwy MP 28-110 Dalton Hwy MP 0-28	7 days a week	3
	Manley	Elliott Hwy MP 110-156	7 days a week	2
Denali	Cantwell	Parks Hwy MP 163-231 Denali Hwy MP 133-135	7 days a week	4
	Healy	Parks Hwy MP 231-276	7 days a week	2
	Nenana	Parks Hwy MP 276-344	7 days a week	2
Fairbanks	Birch Lake	Richardson Hwy MP 287-341 Local Roads	7 days a week	2
	Fairbanks	Parks Hwy MP 344-Fairbanks Elliott Hwy MP 0-28 Steese Hwy MP 0-44 Richardson Hwy MP 341-Fairbanks Chena Hot Springs	7 days a week Two rotating shifts for 24-hour operations	9 per shift
	Montana Creek	Steese Hwy MP 44-Yukon River at Circle	7 days a week	3
Tazlina	Ernestine	Richardson Hwy MP 42-82	7 days a week	3
	Chitina	Edgerton Hwy McCarthy Road (summers only), and local roads	7 days a week	3
	Tazlina	Richardson Hwy MP 82-148 Tok Hwy MP 0-18 Glenn Hwy MP 176-189 local roads	7 days a week	5
	Nelchina	Glenn Hwy MP 118-176	7 days a week	2
	Slana	Tok Hwy MP 18-91	7 days a week	3
	Paxson	Richardson Hwy MP 148-202	7 days a week	3
Tok	Trims	Richardson Hwy MP 203-238	7 days a week	2
	Delta	Richardson Hwy MP 238-287 Alaska Hwy MP 1370-1422	7 days a week	3
	Tok	Alaska Hwy MP 1285-1370 Tok Hwy MP 91-124	7 days a week	3
	Northway	Alaska Hwy MP 1222-1285	7 days a week	2
Mat-Su	Cascade	Glenn Hwy MP 66-118	5 days a week	N/A

5.0 EXISTING CONDITIONS

5.1 Richardson Highway

Richardson Highway (Alaska Route 2 and 4) was the first long-distance all-weather road to be built in Alaska. The route started as a five-foot-wide packed trail to provide military access from Valdez to the Alaska Interior at the start of the Klondike Gold Rush, circa 1899. After the Alaska Road Commission was established in 1905, the commission's first president and the highway's eventual namesake, Major Richardson, identified the trail as a top priority for upgrades. Today, the highway follows roughly the same route as the original trail.

The majority of the Richardson Highway is in the IATP area, from around MP 50 outside of Valdez to the boundary of the FAST Planning MPA. The portion of the highway between Valdez and Delta Junction is designated as Alaska Route 4 and Delta Junction to Fairbanks is designated as Alaska Route 2. It intersects with the Edgerton Highway, Glenn Highway, Tok Cutoff, Denali Highway, and the Alaska Highway. The Richardson Highway is in the Unorganized Borough until it reaches the Fairbanks North Star Borough. It provides roadway access to the Delta Junction, Gulkana, and Copper Center airports.

Richardson Highway has two Alaska Scenic Byway designations: the North segment and the South segment. The North segment was designated for its natural, recreational, historic, and archaeological qualities and the South segment was designated for its scenic, natural, recreational, historic, and cultural qualities.

5.1.1 System Identification and Functional Classification

The Richardson Highway is part of the NHS and is classified as a minor arterial roadway from Valdez to where it intersects with the Glenn Highway near MP 115, an Interstate from MP 115 to Gakona Junction, a major collector roadway from Gakona Junction to Delta Junction, and an Interstate between Delta Junction and Fairbanks.

There is no median along the Richardson Highway from MP 0 until the intersection with the Alaska Highway in Delta Junction (MP 266), where it has a short segment with a curbed median. It then returns to no median until it nears Eielson Air Force Base after MP 340. Lanes on the Richardson Highway are a minimum of seven feet wide. The entire Richardson Highway is paved.

Posted speed limits vary across the length of the Richardson Highway. Most of the highway outside of Fairbanks has a posted speed limit of 65 miles per hour (mph), with some stretches of 55 mph, most notably between MP 159 and MP 235, the corridor approximately 25 miles south of Paxson to approximately 30 miles south of Delta Junction.

5.1.2 AADT & Truck Volume Percentage

The AADT on the Richardson Highway in 2021 ranged from 220 to 25,500, with higher volumes occurring from around MP 261 near the Alaska Highway to the end of the Richardson in Fairbanks (average AADT 8,802 for this segment) and near the Glenn Highway (AADT of 1,030). The highest volumes occur within the FAST Planning MPA boundary (average AADT of 15,611). Trucks account for approximately 13 percent of AADT (11 percent single unit and 1.7 percent combination unit trucks).

5.1.3 Seasonal Limitations

The majority of the Richardson Highway is designated Priority 2 for winter maintenance, though it is designated as Priority 1 around MP 341 to the end of the highway within the FAST Planning MPA boundary.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. Based on data from 2013-2022, restrictions typically begin in mid-March or early April and end in late May to mid-June, with an average of 72 days per year under weight restrictions. Exact start and end times vary year to year.

5.1.4 Crashes

Table 5 summarizes the crash type reported to DOT&PF between 2013 and 2021 on the portion of the Richardson Highway within the IATP area. There were 1,385 reported crashes, with **933** crashes having no apparent injuries and 57 crashes with no identified crash severity. In total, there were **465** minor injuries, 62 serious injuries, and 17 fatalities.

Approximately 45 percent of crashes occurred under clear weather conditions. Of the remaining crashes, 20 percent occurred while it was cloudy, 18 percent while there was snow or blowing snow, six percent occurred during other precipitation events and eight percent of crashes occurred during blowing sand, fog/smoke, and severe crosswinds. Conditions for the remaining crashes were unreported or are unknown.

Roughly 48 percent of crashes occurred under daylight conditions, 32 percent of crashes occurred in the dark with no lighting, six percent occurred in the dark with lighting documented, and eight percent at dawn or dusk. Lighting conditions for the remaining crashes were unreported or are unknown.

Table 5. Richardson Highway Crashes 2013 – 2021

Crash Type	Richardson Highway
Animal – Vehicle	378
Head-On	32
Motorcycle	19
Rear End	185
Sideswipe	34
Single Vehicle Run-Off-Road	500
Undetermined	160
Angle – Left Turning	44
Angle – T-Bone	28
Bicycle	1
Pedestrian	3
Off-Road Vehicle	1
TOTAL	**1385**

5.1.5 Bridges

The Richardson Highway has 40 bridges within the IATP area. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.1.6 Surface Conditions

Roadways are inspected annually for various conditions including rutting, cracking, and roughness. These conditions are rated as good, fair, or poor. The data in Table 6. Richardson Highway Surface Conditions 2021, notes the number of road miles and their rating relative to the listed condition measures. The Richardson Highway has approximately 345.6 road miles within the Interior Region. In 2021, 14.9 percent of the road miles were rated as poor for roughness, 6.9 percent were rated poor for rutting, and 11.7 percent were rated poor for cracking.

The surface conditions data reflected in the table below illustrates the challenges with frost heave along this corridor, particularly in the more remote sections from just outside of the Fairbanks North Star Borough boundary to the southern boundary of the Interior Region.

Table 6. Richardson Highway Surface Conditions 2021

Richardson Highway			
Condition Measure	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	129.6	164.4	51.6
Rutting	177	144.6	24
Cracking	222.9	82	40.7

5.1.7 Maintenance Stations

The Richardson Highway is maintained by seven service stations: Ernestine (MP 42-82), Tazlina (MP 82-148), Paxson (MP 148-202), Trims (MP 203-238), Delta (MP 238-287), Birch Lake (MP 287-341), and Fairbanks (MP 3412-Fairbanks).

5.1.8 Amenities and Points of Interest

The Richardson Highway has 252 known waysides within the IATP area, 19 of which have public restrooms. Six of the waysides have access to non-motorized trails and an additional three have access to motorized trails. Popular destinations along the Richardson Highway include the Sourdough and Sullivan Roadhouses, several state recreation areas, Castner Glacier, and viewpoints of the Wrangell Mountains and the Alaska Range.

5.2 Steese Expressway

The Steese Highway (Alaska Route 6) was originally developed to access placer mines from Circle, a town along the Yukon River. After gold was discovered in Fairbanks, the trail was extended and eventually developed into a road. The highway was named after one of the presidents of the Alaska Road Commission.

The majority of the Steese Highway is in the IATP area, except for the first few miles that are in the FAST Planning MPO boundary. The highway is in both the Fairbanks North Star Borough and the Unorganized Borough. It intersects with the Elliot Highway at Fox and provides roadway access to the Central, Circle City, and Circle Hot Springs airports.

The Steese Highway is designated as an Alaska Scenic Byway for its scenic, natural, recreational, and historic qualities.

5.2.1 System Identification and Functional Classification

The Steese Highway is part of the NHS from MP 0 until it reaches Fox, where it becomes part of the AHS. It is classified as a Minor Arterial from its origin in Fairbanks until it reaches Fox, a Major Collector from Fox to the Central maintenance station, and a Minor collector from the Central maintenance station to Circle.

Median types on the Steese Highway vary between MP 0 and MP 8, including stretches of unprotected, curbed, and positive barrier medians. After MP 8 there is no median on the Steese Highway. Lanes on the Steese Highway have a minimum width of eight feet. The Steese Highway is paved from MP 0 to around MP 81, where it turns to gravel for the remainder of the roadway.

Most of the Steese Highway outside of Fairbanks has a posted speed limit of 50 mph, with some areas up to 55 mph.

5.2.2 Bridges

The Steese Highway has 25 bridges within the IATP area. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.2.3 AADT & Truck Volume Percentage

In 2021 the AADT on the Steese Highway ranged from 40 to 25,300, with higher volumes occurring between MP 0 to around MP 20. The highest volumes occur within the FAST Planning MPA boundary (AADT of greater than 13,000). Trucks account for an average of approximately 20 percent of AADT (10.6 percent single unit and 9.9 percent combination unit trucks).

5.2.4 Seasonal Limitations

The Steese Highway has multiple winter maintenance priority designations along its route. For the first 25 miles outside of the FAST Planning MPA boundary, it is designated as Priority 2, then Priority 3 around MP 31, and finally Priority 4 after the Montana Creek maintenance station.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. Based on data from 2013-2022, restrictions typically begin in late March to mid-April and end sometime in June with an average of 67 days under weight restrictions. Exact start and end times vary year to year.

5.2.5 Crashes

Table 7 summarizes the crash type reported to DOT&PF between 2013 and 2021 on the portion of the Steese Highway within the IATP area. There were 150 crashes reported, with **80** crashes having no apparent injuries and seven crashes with no identified crash severity. In total, there were **61** minor injuries, 14 serious injuries, and ten fatalities.

Nearly half (49 percent) of crashes occurred under clear weather conditions. Of the remaining crashes, 21 percent occurred while there was snow or blowing snow, 15 percent occurred while it was cloudy, seven percent during other precipitation events, and two percent of crashes occurred during blowing sand, fog/smoke, and severe crosswinds. Conditions for the remaining crashes are unknown.

Table 7. Steese Highway Crashes 2013-2021

Crash Type	Steese Highway
Animal – Vehicle	32
Head-On	9
Motorcycle	12
Rear End	16
Sideswipe	1
Single Vehicle Run-Off-Road	50
Undetermined	18
Angle – Left Turning	4
Angle – T-Bone	5
Pedestrian	1
Off-Road Vehicle	1
Bicycle	1
TOTAL	**150**

Approximately 49 percent of crashes occurred under daylight conditions, 39 percent occurred in the dark, and seven percent at dawn or dusk. Lighting conditions for the remaining crashes are unknown.

5.2.6 Surface Conditions

The Steese Expressway is inspected annually to identify locations where rutting, cracking and roughness are present. These conditions receive ratings of good, fair, and poor. *Table 8*, notes the number of road miles and their rating relative to the listed condition measures. The Steese Expressway has approximately 78.4 road miles within the interior Region. In 2021, 7.2 percent of the road miles were rated as poor for roughness, 3.3 percent were rated poor for rutting, and 3.0 percent were rated poor for cracking.

Table 8. Steese Highway Surface Conditions 2021

Steese Highway			
Condition Measure	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	25.2	47.5	5.7
Rutting	39.6	36.1	2.6
Cracking	52	24	2.4

5.2.7 Maintenance Stations

The Steese Highway is serviced by the Fairbanks maintenance station (MP 0-44) and Montana Creek (MP 44-Yukon River at Circle).

5.2.8 Amenities and Points of Interest

The Steese Highway has 49 known waysides within the IATP area, six of which have public restrooms. Four of the waysides have access to non-motorized trails and an additional three have access to motorized trails. Popular destinations along the Steese Highway include the White Mountains National Recreation Area, the Birch Creek National Wild & Scenic River, Gold Dredge Number 8, and Circle Hot Springs.

5.3 George Parks Highway

The George Parks Highway originates near Wasilla and extends in a northeasterly direction to Fairbanks. The segment within the region begins at Mile Post 173 and continues to MP 352 at the boundary of the FAST Planning MPA. The road was originally called the Anchorage – Fairbanks Highway when it was first opened in 1971, but was renamed the George Parks Highway after George Alexander Parks, the governor of the Territory of Alaska from 1925 to 1933. The road is most frequently referred to as the Parks Highway.

The highway offers views of Denali and provides access to Denali State Park, Denali National Park and Preserve and other recreational amenities in the area. Many communities within the interior are located along the route, including Cantwell, Healy, Nenana, and Fairbanks.

A 116-mile segment of the Parks Highway, beginning at the south end of Denali State Park to Healy, is designated as a National Scenic Byway since 2009[9]. The designation was based upon the natural terrain experienced along the corridor, including Denali State Park and Denali National Park and Preserve amongst others.

[9] *National Scenic Byway Foundation (n.d.). The George Parks Highway Scenic Byway. Retrieved June 12, 2023, from https://nsbfoundation.com/nb/the-george-parks-highway-scenic-byway*

5.3.1 System Identification and Functional Classification

The Parks Highway is classified as an interstate and is part of the NHS. The segment of the Parks Highway within the region is an asphalt road with lane widths varying from 12 to 14 feet. There are isolated sections of the highway that have lane widths between 20-28 feet (Mile Post 245-247; 251-253 and 294-296). Generally, medians are not used along the portion of the highway within the region, except near Mile Post 239, where there is a concentration of overnight accommodations, food, beverage, and gas to support tourism in the area.

Posted speeds are primarily 65 mph, transitioning to gradually lower speeds as the road enters neighboring communities along the corridor. The segment of the roadway between the Denali National Park entrance and the City of Healy is posted at 55 mph.

5.3.2 AADT & Truck Volume Percentage

During 2021, the AADT along the Parks Highway ranged from 290 to 18,300 vpd, with the highest volume being reported at the Parks Highway on-ramp at Geist Road in Fairbanks. The highest volumes reported outside of the FAST Planning MPA is between the Old Nenana Highway and Gold Hill Road near the community of Ester. Trucks account for approximately 11.6 percent of AADT (8.2 percent single unit and 3.4 percent combination unit trucks).

5.3.3 Seasonal Limitations

The Parks Highway is affected by seasonal weather conditions. The DOT&PF has identified the segment of the Parks Highway within the IATP area as a Priority 2 for winter maintenance.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. Data reported by Measurement Standards and Commercial Vehicle Compliance (MS/CVC) from 2013 through 2022 reflects that the highway experienced weight restrictions beginning either during March or April and continuing into late May or June each year. On average, weight restrictions are imposed 61.8 days per year.

5.3.4 Crashes

Table 9, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the portion of the Parks Highway within the IATP area. During this period, 1016 crashes were reported, including 688 crashes having no apparent injuries and 27 crashes with no identified crash severity. In total, there were 350 minor injuries, 77 serious injuries, and 28 fatalities.

Table 9. Parks Highway Crashes 2013-2021

Crash Type	Parks Highway
Animal – Vehicle	196
Angle – Left Turning	40
Angle – T-Bone	23
Bicycle	1
Head-On	54
Motorcycle	21
Off-Road Vehicle	2
Pedestrian	2
Rear End	129
Sideswipe	36
Single Vehicle Run Off Road	414
Undetermined	98
TOTAL	**1016**

Of the crashes reported, 45 percent occurred under clear weather conditions, while 25 percent occurred while conditions were cloudy, 16 percent while there was snow or blowing snow, and six percent during other precipitation events. Of the remaining crashes, three percent occurred during blowing sand, fog/smoke, and severe crosswinds and five percent occurred during unknown conditions.

Over half, or 51 percent of crashes occurred under daylight conditions, 37 percent occurred in the dark, and nine percent at dawn or dusk. Lighting conditions for the remaining crashes are unknown.

5.3.5 Bridges

There are 52 bridges along the Parks Highway and 39 of these are within the interior region. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.3.6 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. *Table 10*, notes the number of road miles and their rating relative to the listed condition measures. The Parks Highway has approximately 310.2 road miles within the Interior Region. In 2021, a vast majority of the roadway received a rating of good in all three categories. However, deficiencies were noted. Specifically, 5.2 percent of the road miles were rated as poor for roughness, 8.6 percent were rated poor for rutting, and 4.1 percent were rated poor for cracking.

Table 10. Parks Highway Surface Conditions 2021

Parks Highway			
Condition Measure	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	208.56	85.42	16.30
Rutting	204.68	78.90	26.70
Cracking	231.88	65.50	13.0

5.3.7 Maintenance Stations

The Parks Highway is maintained by four facilities located either along the highway or within communities adjacent to the roadway including Cantwell (MP 163-231), Healy (MP 231-276), Nenana (MP 276-344), and Fairbanks (MP 344 to Fairbanks). All facilities are staffed seven days per week and generally have two to four operators apart from the Fairbanks facility which maintains facilities in the urban areas, primarily outside of the IATP area.

5.3.8 Amenities and Points of Interest

The Parks Highway has 69 known waysides within the IATP area, five of which have public restrooms. Two of the waysides have access to non-motorized trails; none of the waysides have access to motorized trails. Popular destinations along the Parks Highway include Denali National Park and Preserve, numerous campgrounds and trails, and access to the Nenana River.

The planned route for the Alaska Long Trail will approach or cross the Parks Highway at several points within the IATP area.

5.4 Chena Hot Springs Road

Chena Hot Springs Road is approximately 56 miles in length and starts from an east bound ramp off Steese Expressway. From Fairbanks, the road generally follows the Chena River east until crossing the river near MP 39

where it takes a northerly direction. The road terminates at Chena Hot Springs where a resort and many other tourist and recreational amenities are located.

5.4.1 System Identification and Functional Classification

Approximately six miles of Chena Hot Springs Road is identified as functional class rural minor arterial and an additional 50 miles is identified as rural major arterial. The full length of Chena Hot Springs Road is asphalt.

5.4.2 Bridges

Chena Hot Springs Road has 12 bridges within the IATP area. One of the 12 bridges identified at Monument Creek is classified as being on private land. All bridge names, mileposts, lengths and funding eligibility are found in Appendix 1: Bridge Inventory

5.4.3 AADT & Truck Volume Percentage

According to AADT data from 2021, traffic on Chena Hot Springs Road ranged from 570 to 7,210 vpd with the highest volume occurring east of Steese Highway.

5.4.4 Seasonal Limitations

The length of Chena Hot Springs Road has two distinct winter maintenance priorities identified. The first 18.5 miles from the center of Fairbanks is designated as a level 3 priority and the remaining 31.5 miles are designated as level 4 priority.

5.4.5 Crashes

Table 11 summarizes the crash type reported to DOT&PF between 2013 and 2021 on Chena Hot Springs Road. There were 418 crashes reported, with 267 crashes having no apparent injuries and 19 crashes with no identified crash severity. In total, there were 155 minor injuries, 27 serious injuries, and nine fatalities.

Over half of the reported crashes occurred under clear weather conditions. Of the remaining crashes, 20 percent occurred while conditions were cloudy, 11 percent occurred while there was snow or blowing snow and only 12 percent occurred during events of blowing debris or fog/ smoke.

Table 11. Chena Hot Springs Road Crashes 2013-2021

Crash Type	Chena Hot Springs
Angle – Left Turning	18
Angle – T-Bone	13
Animal - Vehicle	109
Head-On	29
Motorcycle	5
Off-Road Vehicle	2
Rear End	46
Sideswipe	6
Single Vehicle Run-Off-Road	143
Undetermined	47
TOTAL	**418**

5.4.6 Surface Conditions

Surface conditions data is unavailable for Chena Hot Springs Road.

5.4.7 Maintenance Stations

Chena Hot Springs Road is serviced by the Fairbanks maintenance station. This station operates on 24-hour schedule seven days a week. There are typically nine operators on staff per shift.

5.4.8 Amenities and Points of Interest

The Chena Hot Springs Road has 10 known waysides, six of which have public restrooms. Three of the waysides have access to non-motorized trails, two have access to motorized trails, and one has both non-motorized and motorized trail access. Popular destinations along the Chena Hot Springs Road include the Chena River State Recreation Area, multiple camp grounds and trailheads, access to the Chena River, and Chena Hot Springs Resort.

5.5 Denali Highway

The Denali Highway first opened in 1957, following roughly four years of construction. The 135-mile road historically served as the primary access to Denali National Park and Preserve until the Parks Highway was opened. The entire highway is located within the IATP area and traverses land that is primary owned by the State and the Bureau of Land Management. The cities of Cantwell and Paxson are situated at either end of the highway, but no other cities are located along the route. The road provides access to recreational destinations and lodging along the route.

5.5.1 System Identification and Functional Classification

The Denali Highway is classified as a major collector and is part of the AHS. It begins between Mileposts 185 and 186 along the Richardson Highway. The road is asphalt for approximately 30 miles before transitioning to gravel and intermittent paved sections for approximately 100 miles, and then transitions back to asphalt approximately two-and-a-half miles east of Cantwell Road.

Denali Highway has a posted speed of 50 mph except for a roughly two-and-a-half-mile section near the interchange with the George Parks Highway, where speeds are reduced to between 40-45 miles per hour. Curbs and medians are not present along the Denali Highway.

5.5.2 AADT & Truck Volume Percentage

The AADT reported on the Denali Highway in 2021 ranged from 50 to 2,250 vpd, with the highest volume being reported at Denali National Park Road. Trucks account for approximately 5.3 percent of AADT (3.53 percent single unit and 1.74 percent combination unit trucks).

5.5.3 Seasonal Limitations

The Denali Highway experiences seasonal closures and is not maintained during the winter. Maintenance crews typically remove snow, thaw culverts and complete repairs along the roadway beginning in mid-April and regularly maintain the road until October 1st. The DOT&PF issues a press release each year to inform the public of the status of the road and when maintenance will end.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. According to MS/CVC the timing and severity of the weight restrictions vary year to year. In reviewing data from 2013 through 2022, the highway generally experienced weight restrictions beginning during the month of April and extending into June. However, in 2019 weight restrictions were implemented in late March and in 2020 weight restrictions extended into July. On average, weight restrictions were imposed 63.7 days per year between 2013-2022.

5.5.4 Crashes

Table 12, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the Denali Highway. There were 17 crashes reported, with 13 crashes having no apparent injuries and one crash with no identified crash severity. Injury crashes included two minor injury crashes and one fatal crash. In total, there were two minor injuries, and one fatality.

Of the reported crashes, 24 percent occurred under clear weather conditions, 41 percent occurred while conditions were cloudy, 12 percent while there was snow or blowing snow, and 12 percent during other precipitation events. Of the remining crashes, six percent occurred during blowing sand, fog/smoke, and severe crosswinds and five percent occurred during unknown conditions. Approximately 71 percent of crashes occurred under daylight conditions and 29 percent occurred in the dark

Table 12. Denali Highway Crashes 2013-2021

Crash Type	Denali Highway
Animal – Vehicle	2
Head-On	1
Motorcycle	2
Off-Road Vehicle	1
Rear End	1
Sideswipe	2
Single Vehicle Run-Off Road	5
Undetermined	3
TOTAL	17

5.5.5 Bridges

The Denali Highway has 10 bridges within the IATP area. All bridge names, waterbody names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.5.6 Surface Conditions

The 135-mile Denali Highway is comprised of predominately gravel surfacing with approximately 66.59 miles of pavement at either end of the roadway termini at Cantwell and Paxson. The roadway traverses the Denali National Park and has extreme variability in topography resulting in inconsistent road material composition which results leads to rough surface conditions.

The paved portions of the road are inspected annually to identify locations where rutting, cracking and roughness are present. DOT&PF assigns these imperfections with a rating of good, fair, or poor. *Table 13*, notes the number of road miles and their rating relative to the listed condition measures. In 2021, 68.71 percent of the road miles were rated as poor for roughness, 1.6 percent were rated poor for rutting, and less than 0.15 percent were rated poor for cracking.

Table 13. Denali Highway Surface Conditions 2021

Denali Highway			
Condition Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	1.71	19.13	45.75
Rutting	25.74	39.75	1.10
Cracking	62.14	4.35	.10

5.5.7 Maintenance Stations

The Cantwell Maintenance Facility and the Paxon Maintenance Facility are located near the western and eastern terminus of the Denali Highway respectively. Both facilities are staffed seven days and week, year-round. Cantwell has an average of four operators while the Paxon facility runs a three-operator crew.

5.5.8 Amenities and Points of Interest

The Denali Highway has 193 known waysides, six of which have public restrooms. Two of the waysides have access to non-motorized trails and an additional six have access to motorized trails. Camping is allowed in the waysides along the highway. Popular destinations along the Denali Highway include the Tangle Lakes Archaeological District and numerous lakes, campgrounds, and viewpoints.

5.6 Glenn Highway

Approximately 62 miles of the Glenn Highway, also known as Alaska 1, is within the IATP area. The Glenn Highway originates in Anchorage and runs in a northeasterly direction and connects with the Richardson Highway just east of Glennallen.

A 135-mile segment of the Glenn Highway is designated as a National Scenic Byway[10] which extends from Anchorage to the Little Nelchina State Recreation Site. Approximately 11 miles of the Scenic Byway are within the IATP area.

5.6.1 System Identification and Functional Classification

Glenn Highway is classified as an interstate and is part of the NHS. It is a two-way asphalt road with lane widths varying from 12 to 14 feet along the alignment. Curbs or medians are not constructed along the Glenn Highway.

The Glenn Highway has a posted speed of 65 mph except for the final 3.5-miles at the east end of the highway as the road approaches and passes through Glennallen before the interchange with the Richardson Highway, where speeds are reduced to between 40-50 mph.

5.6.2 AADT & Truck Volume Percentage

In 2021, the AADT along the Glenn Highway ranged from 700 to 1,780 vpd, with the highest volume being reported between Terrance Road and the interchange with the Richardson Highway just east of Glennallen. Trucks account for approximately 5.2 percent of AADT (4.4 percent single unit and 0.8 percent combination unit trucks).

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[10] Federal Highway Administration. Glenn Highway National Scenic Byway. National Scenic Byways & All-American Roads. Retrieved June 12, 2023, from https://fhwaapps.fhwa.dot.gov/bywaysp/StateMaps/Show/byway/2483

5.6.3 Seasonal Limitations

The Glenn Highway is affected by seasonal weather conditions. The DOT&PF has identified the highway as a Priority 2 for winter maintenance.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. In reviewing data from MS/CVC for the years 2013-2022 the highway generally experienced weight restrictions beginning during April and extending into June, though in 2015, 2016, 2018 and 2019, weight restrictions began in late March. On average, weight restrictions are imposed 65.1 days per year.

5.6.4 Crashes

Table 14, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the portion of the Glenn Highway within the IATP area. There were 151 crashes reported, with 95 crashes having no apparent injuries and five crashes with no identified crash severity. In total, there were 65 minor injuries, 13 serious injuries, and three fatalities.

Table 14. Glenn Highway Crashes 2013-2021

Crash Type	Glenn Highway
Animal – Vehicle	45
Angle – Left Turning	2
Head-On	6
Motorcycle	4
Off-Road Vehicle	1
Pedestrian	1
Rear End	16
Sideswipe	6
Single Vehicle Run-Off-Road	53
Undetermined	17
TOTAL	**151**

Approximately 45 percent of the reported crashes occurred under clear weather conditions, while 25 percent occurred while conditions were cloudy, 14 percent while there was snow or blowing snow, and seven percent during other precipitation events. Of the remaining crashes, three percent occurred during blowing sand, fog/smoke, and severe crosswinds and six percent occurred during unknown conditions.

Over half, or 53 percent of crashes occurred under daylight conditions, 37 percent occurred in the dark, and nine percent at dawn or dusk. Lighting conditions for the remaining crashes are unknown.

5.6.5 Bridges

The Glenn Highway has four bridges within the IATP area. All bridge names, mile points, lengths and funding eligibility are found Appendix 1: Bridge Inventory.

5.6.6 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. *Table 15*, notes the number of road miles and their rating relative to the listed condition measures. An approximately 173.8 mile stretch of the Glenn Highway is located within the Interior Region. In 2021, a vast majority of the roadway received a rating of good or fair

in all three categories. However, deficiencies were noted. Specifically, 6percent of the road miles were rated as poor for roughness, 10.7percent were rated poor for rutting, and 1.6percent were rated poor for cracking.

Table 15. Glenn Highway Surface Conditions 2021

Glenn Highway			
Condition Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	106.66	56.74	10.44
Rutting	82.74	72.38	18.72
Cracking	132.93	38	2.91

5.6.7 Maintenance Stations

Maintenance personnel stationed out of the Nelchina Maintenance Station are responsible for the segment of Glenn Highway between Mile Posts 118 and 176. Two person crews operate from this facility seven days per week.

The Tazlina Maintenance Station, which has an average of five operators, covers the segment of the highway from MP 176-189. Maintenance operations occur daily.

5.6.8 Amenities and Points of Interest

The Glenn Highway has 26 known waysides within the IATP area, one of which has a public restroom. Two of the waysides have access to motorized trails. Popular destinations along the Glenn Highway include Eklutna Historical Park, Matanuska Glacier State Recreation Site, and several trailheads and campgrounds.

5.7 Alaska Highway

The Alaska Highway extends from Dawson Creek British Columbia, Canada to Delta Junction in Alaska. Approximately 200 miles of the Alaska Highway is located within the IATP area beginning at the Alaska and Canada border near MP 1222, where it becomes Alaska Route 2 and continues west to its intersection with the Richardson Highway in Delta Junction at MP 1422. The Alaska Highway is connected to several other transportation facilities in the area including the Taylor Highway and Tok Cutoff, and numerous airports located within communities along this route.

The Alaska highway was built in 1942 during World War II, and connected a series of existing airfields from Edmonton, Alberta to Fairbanks, Alaska. These airfields were collectively referred to as the Northwest Staging Route and used to transport war planes from Great Falls, Montana to Ladd Air Base in Fairbanks. The Parks Highway has approximately 310.2 road miles within the Interior Region.

5.7.1 System Identification and Functional Classification

The Alaska Highway is classified as an interstate and is part of the NHS. The road is paved with either asphalt or concrete for the entire 200-mile segment within the IATP area. Lane widths vary from 12 to 13 feet and do not include any medians or curbs along the highway except where it transitions to the Richardson Highway in Delta Junction.

Speeds along the Alaska Highway vary. Slower speeds of 35 mph are posted near the Canadian and US Border, before gradually increasing to 55 and 65 mph as the route progresses westward. Slower speeds are posted as the road passes through Tok and Dot Lake.

5.7.2 AADT & Truck Volume Percentage

The AADT reported on the Alaska Highway in 2021 ranged from 200 to 1,370 vpd, with the highest volume being reported between MP 1420 and South Clearwater Avenue in Delta Junction. Trucks account for approximately 16.8 percent of AADT (13.4 percent single unit and 3.4 percent combination unit trucks).

5.7.3 Seasonal Limitations

The Alaska Highway is affected by seasonal weather conditions. The DOT&PF has identified the Alaska Highway as a Priority 2 for winter maintenance.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. According to the MS/CVC the timing and severity of the weight restrictions vary year to year. In reviewing data from 2013- 2022, the highway generally experienced weight restrictions beginning during the month of April and extending into June, though in both 2016 and 2019, weight restriction began in late March. On average, weight restrictions are imposed 52.9 days per year.

5.7.4 Crashes

Table 16, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the portion of the Alaska Highway within the IATP area. There were 279 crashes reported, with 164 crashes having no apparent injuries and nine crashes with no identified crash severity. In total, there were 107 minor injuries, 22 serious injuries, and six fatalities.

Table 16. Alaska Highway Crashes 2013-2021

Crash Type	Alaska Highway
Animal – Vehicle	119
Angle – Left Turning	4
Angle – T-Bone	1
Head-On	8
Motorcycle	7
Off-Road Vehicle	1
Pedestrian	1
Rear End	13
Sideswipe	4
Single Vehicle Run Off Road	98
Undetermined	23
TOTAL	**279**

Half of the reported crashes occurred under clear weather conditions. Of the remaining, 23 percent occurred while conditions were cloudy, 14 percent while there was snow or blowing snow, six percent during other precipitation events, one percent occurred during blowing sand, fog/smoke, and severe crosswinds, and six percent occurred during unknown conditions.

Approximately 47 percent of crashes occurred under daylight conditions, 42 percent occurred in the dark, and seven percent at dawn or dusk. Lighting conditions for the remaining crashes are unknown.

5.7.5 Bridges

The Alaska Highway has 22 bridges within the IATP area. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.7.6 Surface Conditions

The Alaska Highway is inspected annually to identify locations where rutting, cracking and roughness are present. The DOT&PF rates these conditions as good, fair, and poor. *Table 17*, notes the number of road miles and their rating relative to the listed condition measures for thar portion of the highway that is within the Interior Region. In

2021, 17 percent of the road miles had a roughness rating of poor, 1.89 percent were rated as poor for rutting, and 1.58 percent were rated poor for cracking.

Table 17. Alaska Highway Surface Conditions 2021

Alaska Highway			
Condition Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	96.27	65.90	33.35
Rutting	117.47	74.35	3.70
Cracking	137.06	55.37	3.10

5.7.7 Maintenance Stations

Maintenance of the Alaska Highway is split between the Northway, Tok and Delta Maintenance Stations located along the highway. These facilities are staffed seven days a week, year-round and typically have two to three operators each.

5.7.8 Amenities and Points of Interest

The Alaska Highway has 100 known waysides within the IATP area, seven of which have public restrooms. Two of the waysides have access to non-motorized trails and one has access to motorized trails. Popular destinations along the Alaska Highway include Rika's Roadhouse, Big Delta State Historical Park, and Chena Lake Recreation Area.

5.8 Tok Cutoff/Tok Highway

The Tok Cutoff/Tok Highway (Alaska Route 1) started as a trail during the construction of the Alaska-Canada Highway, though the present-day highway does not follow the same route as the original trail. Today, it connects with the Richardson Highway at Gakona Junction and the Alaska Highway at Tok. The entire highway is within the IATP area and is within the Unorganized Borough. It provides roadway access to the Chistochina airport.

5.8.1 System Identification and Functional Classification

The Tok Cutoff/Tok Highway is part of the NHS and is classified as an Interstate. There are no medians on the Tok Cutoff/Tok Highway and lanes have a minimum width of nine feet. The entire Tok Cutoff/Tok Highway is paved.

The posted speed limit for the Tok Cutoff/Tok Highway is 55 mph from MP 0 to around MP 123, where the speed limit is reduced to 35 mph until the Tok Cutoff/Tok Highway intersects with the Alaska Highway.

5.8.2 AADT & Truck Volume Percentage

The AADT on the Tok Cutoff/Tok Highway ranges from 240 to 540 vpd, with the highest volume on the segment between the Tok maintenance station access road and the Alaska Highway. Trucks account for approximately 20 percent of AADT (17 percent single unit and 2.6 percent combination unit trucks).

5.8.3 Seasonal Limitations

The entire Tok Cutoff/Tok Highway is designated as Priority 2 for winter maintenance.

Weight restrictions are imposed annually for large trucks and freight movement through the corridor. Based on data from 2013-2022, restrictions typically begin in late March to mid-April and sometime in late May or early to mid-June with an average of 56 days under weight restrictions. Exact start and end times vary year to year.

5.8.4 Crashes

Only four crashes were reported to DOT&PF between 2013 and 2021 on the Tok Cutoff/Tok Highway. All four crashes were single vehicle incidents in which the vehicle ran off the road when it was dusk or dark. All crashes resulted in injuries, with a total of three minor injuries and three serious injuries. Two crashes occurred during clear conditions, one during blowing snow, and one under unknown conditions. Three occurred in the dark and one at dusk.

5.8.5 Bridges

The Tok Cutoff/Tok Highway has 27 bridges along its alignment. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.8.6 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. The entirety of the approximately 115-mile highway is within the Interior Region. *Table 18*, notes the number of road miles and their rating relative to the listed condition measures. In 2021, 19.9 percent of the road miles were rated as poor for roughness, with most mileage condition measures related to rutting and cracking rated as good or fair.

Table 18. Tok Cutoff/Tok Highway Surface Conditions 2021

Tok Highway Cutoff			
Conditions Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	45.6	47	23.1
Rutting	93	22.4	.3
Cracking	84.3	30	1.4

5.8.7 Maintenance Stations

The Tok Cutoff/Tok Highway is maintained by the Tazlina station (MP 0-18), the Slana station (MP 18-91), and the Tok station (MP 91-124).

5.8.8 Amenities and Points of Interest

The Tok Cutoff/Tok Highway has 67 known waysides within the IATP area, six of which have public restrooms. Two of the waysides have access to non-motorized and motorized trails and one wayside has access to only motorized trails. Popular destinations along the Tok Cutoff/Tok Highway include multiple campgrounds and recreation sites.

5.9 Edgerton Highway/McCarthy Road

The Edgerton Highway/McCarthy Road stretches for 91 miles from the Richardson Highway to McCarthy. The Edgerton Highway transitions to McCarthy Road at Chitina. The Edgerton Highway alignment parallels the Copper River and was formerly an old pack trail that was established in the early 1900's as the Richardson Highway was being constructed. McCarthy Road parallels the old railroad right of way that was relied upon to transport copper ore from Kennecott Mine in the early 1900's.

5.9.1 System Identification and Functional Classification

The Edgerton Highway/McCarthy Road is classified as a major collector and is part of the AHS. The Edgerton Highway is a 33-mile-long asphalt or concrete road from the Richardson Highway to Chitina. As the road continues

east it transitions to McCarthy Road which has intermittent segments of pavement but is predominantly gravel for approximately 60 miles before reaching McCarthy. Medians are not used along this roadway.

Edgerton Highway has a posted speed of 55 mph until MP 32 where speed is reduced to 30 mph as the road enters Chitina. Speeds on McCarthy Road range between 30 and 35 mph.

5.9.2 AADT & Truck Volume Percentage

The AADT along Edgerton Highway/McCarthy Road in 2021 ranged from 80 to 480 vpd, with the highest volume being reported between the Old Edgerton Loop Road to the Copper River Spur at Chitina. Trucks account for approximately 5.3 percent of AADT (3.5 percent single unit and 1.7 percent combination unit trucks).

The Edgerton Highway experiences a seasonal spike in AADT during the summer months due to the popularity of summer recreational activities. Although winter average daily trips hover below 200 vph, June and July 2021 saw a monthly average of over 1,000 vph.

5.9.3 Seasonal Limitations

Edgerton Highway is classified as a Level 3 priority for winter maintenance.

Winter maintenance is not provided on McCarthy Road. Maintenance crews typically begin to remove snow, thaw culverts and complete repairs along the roadway in mid-April and regularly maintain the road until October 1st. The DOT&PF issues a press release each year to inform the public of the status of the road. Weight restrictions are not imposed on this facility given the limited volume of commercial or truck traffic.

5.9.4 Crashes

Table *19*, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the Edgerton Highway/McCarthy Road. There were 26 crashes reported, with 14 crashes having no apparent injuries and one crash with no identified crash severity. In total, there were 12 minor injuries and one serious injury.

Table 19. Edgerton Highway/ McCarthy Road Crashes 2013-2021

Crash Type	Edgerton Highway/McCarthy Road
Animal – Vehicle	3
Angle – Left Turning	1
Bicycle	2
Head-On	2
Rear End	1
Sideswipe	1
Single Vehicle Run-Off Road	12
Undetermined	4
TOTAL	**26**

Half of the reported crashes occurred under clear weather conditions. Approximately 31 percent occurred while conditions were cloudy, four percent while there was snow or blowing snow, and eight percent during other precipitation events. The remaining crashes (seven percent) occurred during unknown conditions.

Approximately 81 percent of crashes occurred during daylight conditions, 12 percent occurred in the dark, and four percent at dusk. Lighting conditions for the remaining three percent of crashes are unknown.

5.9.5 Bridges

The Edgerton Highway/McCarthy Road has 9 bridges. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.9.6 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. *Table 20*, notes the number of road miles and their rating relative to the listed condition measures. In 2021, 55 percent of the road miles were rated as poor for roughness, with the majority of condition measures related to rutting and cracking rated as good or fair.

Table 20. Edgerton Highway/McCarthy Road Surface Conditions 2021

Edgerton Highway/McCarthy Road			
Conditions Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	16.20	5.30	26.40
Rutting	28.04	19.16	.70
Cracking	39.80	8	.10

5.9.7 Maintenance Stations

The Edgerton Highway/McCarthy Road is maintained during the summer months by the Chitina Maintenance Station. The facility operates seven days per week with an average of three operators.

5.9.8 Amenities and Points of Interest

The Edgerton Highway/McCarthy Road has 18 known waysides within the IATP area. One wayside has a public restroom, and one has access to non-motorized trails. Popular destinations along the Edgerton Highway/McCarthy Road include Wrangell-St. Elias National Park, Kennicott Mines National Historic Landmark, Liberty Falls State Recreation Area, and access to the Copper and Chitina rivers.

5.10 Taylor Highway

The Taylor Highway (Route 5) was first constructed in 1953 to connect Eagle, Chicken, and the Forty Mile Mining District to the Alaska Highway. All of Taylor Highway is within the IATP area and is within the Unorganized Borough. It intersects with the Top of the World Highway at Jack Wade Junction and provides roadway access to Chicken airport. The Taylor Highway, in combination with the Top of the World highway, is designated as an Alaska Scenic Byway for its scenic, natural, and historic qualities.

5.10.1 System Identification and Functional Classification

The Taylor Highway is part of the AHS. It is classified as a Major Collector from its origin at the Alaska Highway until it intersects with the Top of the World Highway, where it becomes a Minor Collector until its terminus in Eagle.

There are no medians on the Taylor Highway and lanes have a minimum width of seven feet. It is mostly paved from MP 0-67, with some unpaved gravel stretches, and entirely gravel after MP 67 to the end of the highway. Approximately 63 miles of the Taylor Highway are asphalt, and 94 miles are gravel.

The Taylor Highway has a posted speed limit of 50 mph for its entire length until it reaches Eagle (near MP 159), where it changes to 15 mph.

5.10.2 AADT & Truck Volume Percentage

In 2021, the AADT on the Taylor Highway ranged from 20 to 180 vpd, with the highest volume on the segment between the Logging Creek Bridge and the South Fork maintenance station access road. Trucks account for 12 percent of AADT (11 percent single unit and one percent combination unit trucks).

5.10.3 Seasonal Limitations

The entire Taylor Highway is designated as a Priority 5 for winter maintenance, as it is closed during the winter. It may receive some maintenance in the spring to prepare the road for summer travel.

5.10.4 Crashes

Table 21, summarizes the crash type reported to DOT&PF between 2013 and 2021 on the Taylor Highway. There were 19 crashes reported, with 13 crashes having no apparent injuries. At least one crash was reported every year, except 2020, with seven occurring in 2013. In total, there were four minor injuries, two serious injuries, and one fatality.

Table 21. Taylor Highway Crashes 2013-2021

Crash Type	Taylor Highway
Animal – Vehicle	3
Head-On	1
Motorcycle	5
Rear End	1
Sideswipe	1
Single Vehicle Run-Off-Road	5
Undetermined	3
TOTAL	**19**

Eleven of the crashes occurred under clear conditions, four when it was cloudy, one during foggy/smokey conditions, and one in the rain. Conditions for the remaining crashes were not reported.

Fourteen of the crashes occurred during daylight conditions, four in the dark, and one under unknown lighting conditions.

5.10.5 Bridges

The Taylor Highway has 16 bridges. All bridge names, mile points, lengths and funding eligibility are found in Appendix 1: Bridge Inventory.

5.10.6 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. *Table 22*, notes the number of road miles and their rating relative to the listed condition measures. In 2021, nearly 99.8 percent of the road miles were rated as fair or poor for roughness while instances of rutting and cracking were predominantly rated as good or fair.

Table 22. Taylor Highway Surface Conditions 2021

Taylor Highway			
Condition Measures	Good	Fair	Poor
	(Number of Road Miles)		
Roughness	.1	30.3	32.1
Rutting	27.2	33.6	1.7
Cracking	58.8	3.8	0

5.10.7 Maintenance Stations

The Taylor Highway is maintained by the South Fork station near MP 72 and the Eagle station in Eagle Village.

5.10.8 Amenities and Points of Interest

The Taylor Highway has 123 known waysides within the IATP area, one of which has a public restroom. None of the waysides have access to non-motorized or motorized trails. Popular destinations along the Taylor Highway include the Fortymile National Wild & Scenic River, the Yukon Charley Rivers National Preserve, and multiple campgrounds.

5.11 Top of the World Highway

The Top of the World Highway (Alaska Route 5) started as a trail from Dawson City, Yukon, Canada to access mining camps in both Canada and Alaska. Today, the highway runs from the Taylor Highway at Jack Wade Junction to the Canadian border, where it continues to Dawson City. Only the portion of the highway between the Canadian border and the Taylor Highway is within the IATP area and this segment of the highway is within the Unorganized Borough.

5.11.1 System Identification and Functional Classification

The Top of the World Highway is part of the AHS and is classified as a Major Collector. There are no medians on Top of the World Highway and lanes have a minimum width of 12 feet. Approximately 13 miles of the highway are paved asphalt, with less than a half mile of gravel where it joins with the Taylor Highway. It provides roadway access to the Boundary and Eagle airports.

The posted speed limit for the Top of the World Highway is 50 mph.

5.11.2 AADT & Truck Volume Percentage

The AADT in 2021 for the Top of the World Highway is 130 vpd, with Truck AADT accounting for approximately 11 percent (10 percent single unit and one percent combination unit trucks).

5.11.3 Seasonal Limitations

The entire Top of the World Highway is designated as Priority 5 for winter maintenance. It may receive some maintenance in the spring to prepare the road for summer travel.

5.11.4 Crashes

There were two crashes reported to DOT&PF on the Top of the World Highway from 2013-2021, one each occurring in 2015 and 2017. The 2015 crash involved a single vehicle running off the road and resulted in no injuries. The 2017 crash involved a motorcyclist falling off their motorcycle, resulting in a serious injury. Both occurred in the month of June on clear days under daylight conditions.

5.11.5 Surface Conditions

DOT&PF inspects roadways annually to identify locations where rutting, cracking and roughness are present. Where these surface imperfections are noted, they are given a rating of good, fair, and poor. *Table 23*, notes the number of road miles and their rating relative to the listed condition measures. In 2021, the Top of the World Highway received a rating of good for each condition measure for most of the roadway inspected. Approximately 1.4 miles received a rating of fair for roughness.

Table 23. Top of the World Highway Surface Conditions 2021

The Top of the World Highway			
Conditions Measures	**Good**	**Fair**	**Poor**
	(Number of Road Miles)		
Roughness	11.5	1.4	.1
Rutting	13	0	0
Cracking	12.9	.1	0

5.11.6 Maintenance Stations

The Top of the World Highway does not have any dedicated maintenance stations.

5.11.7 Amenities and Points of Interest

No waysides were identified along the Top of the World Highway. The Top of the World Highway is popular for its scenic views.

5.12 Dalton Highway & Elliott Highway

The Dalton Highway starts in Livengood, runs along the western edge of the IATP area into the North Slope Borough, and terminates at Deadhorse. The entire 414-mile highway is classified as Principal Arterial - Other and is part of the NHS.

The Elliott Highway originates in Fox at the intersection of the Steese Highway and the Old Steese Highway North. From its origin to its intersection with the Dalton Highway at milepost 73, the Elliott Highway is classified as a Principal Arterial-Other and is part of the NHS. The remaining length of the road from MP 73 to the roads terminus in Manley Hot Springs is classified as a Collector and is part of the AHS.

The Dalton and Elliott Highways are used by travelers and recreators to access Arctic destinations, like Coldfoot, Deadhorse, and Manley Hot Springs. The Dalton Highway has 53 known waysides within the IATP area, two of which have public restrooms. The Elliott Highway has 42 known waysides within the IATP area, four of which have public restrooms. One of the waysides has access to non-motorized trails, two have access to motorized trails, and one has access to both non-motorized and motorized trails.

Both the Dalton and Elliott Highways were evaluated as part of the NWATP 2022 update and further information on these highways is addressed in that Plan. The roads are summarized at a high level in this document as the Dalton and Elliott Highways form the western border of the IATP area.

6.0 ROADWAY TRAFFIC FORECASTS

6.1 Methodology

The analysis began with the collection of DOT&PF historic traffic counts on all major highways within the IATP area. Data were collected for the years 2010 through 2020 (11 years of data). Each highway has a different number of traffic count locations, ranging from a low of two to a high of 17.

Data for each traffic count location were placed into a spreadsheet and graphed. A trendline was also added to each graph to help visualize trends in traffic volume. Most count locations showed negative growth. No segments of any highway in the IATP area are experiencing or will likely experience highway capacity issues.

Many of the rural/remote count locations recorded very low traffic volumes. Therefore, even a small change in year-over-year traffic can have a large impact on the overall trend. Flat growth was assumed many of the highways (rather than negative growth) and the analysis included a review of several potential scenarios that could impact traffic volumes or traffic composition. These scenarios included:

- Manh Choh trucking (Richardson, Alaska Highways; 5-year duration)
- Fort Greely Expansion
- Clear Space Force Expansion
- Tourism
- Ambler Road
- Eielson growth
- Denali Regional airport
- Interior Gas Utility Liquefied Natural Gas Trucking (via North Slope)
- Livengood mine
- Willow Project
- Northern Rail Extension

Highways were evaluated as sub-regions because of similarities in traffic volumes and traffic composition. Evaluating the highways as systems rather than individual routes ensures that recommendations are consistent along corridors. Likewise, many of the IATP area highways are connected to or a continuation of another highway (e.g., Alaska Highway to Richardson Highway connects Fairbanks with Canada).

6.2 Fairbanks Area

AADT data for the Steese Expressway show that the highest volumes of traffic occur in and near Fairbanks (AADT counts in the tens of thousands) with counts dropping off steeply outside the city. The traffic counts north of Fox are roughly 60 percent of the counts just south of Fox, indicating that just over a third of vehicles are either not traveling past Fox or are turning onto the Elliott Highway. There has been a steady decrease in traffic counts on the Steese Expressway in Fairbanks from 2010 to 2020 that began before the impacts of the COVID-19 pandemic.

Chena Hot Springs Road originates just north of Fairbanks along the Steese Expressway, and data show varying trends along the roadway. There has been a decrease in AADT where the road meets the Steese Expressway and an increase in AADT from Nordale Road to the easternmost Continuous Count station at Little Chena River Bridge. The traffic counts between the Steese Expressway and Nordale Road either showed slight decreases or no clear trends in traffic. The highest volume of traffic on Chena Hot Springs Road is at the start of the road (typically greater than 8000 vpd) with lower volumes farther east.

On the Richardson Highway from Delta Junction to Fairbanks, AADT data show varying trends in traffic counts. Data collected at stations from Delta Junction to Eielson Air Force Base show a decrease in traffic in the late 2010s, whereas data from Moose Creek to Fairbanks show increased traffic prior to the COVID-19 pandemic. Traffic volumes are highest in and near Fairbanks (AADT counts in the tens of thousands) and lowest near Delta Junction (under 1000 vpd).

The Steese Expressway and a portion of the Richardson Highway (from Delta Junction to Fairbanks) will be impacted by the Manh Choh Mine ore hauling activities starting in 2024, which will involve trucks moving between the Manh Choh Mine near Tok to the Fort Knox Mine northeast of Fairbanks. The ore hauling route as currently planned will pass through Delta Junction but avoid downtown Fairbanks. Traffic on the Richardson Highway may also be impacted by possible expansion activities at Eielson Air Force Base.

6.3 Delta/Tok/Glennallen Area

The Alaska Highway, Tok Cutoff/Tok Highway, and a portion of the Richardson Highway form a triangle between Tok, Glennallen, and Delta Junction, and as such activity on each of these highways may impact the others.

The AADT data on the Alaska Highway for 2010-2020 indicate that traffic volumes are decreasing throughout most of the highway. The area with the highest traffic volume, Delta Junction between MP 1420 and South Clearwater Avenue, showed an increase in traffic. The AADT station at Gardiner Creek (MP 1256) is the closest station to the Alaska-Canada border. It also showed an increase in traffic prior to the COVID-19 pandemic.

The Alaska Highway is expected to see an increase in traffic due to ore hauling from the Manh Choh Mine, which is expected to begin operating in 2024. The trucking route is currently identified as starting at the mine's access road and passing through Tok and Delta Junction on the Alaska Highway before transferring to the Richardson Highway toward Fairbanks. There will also likely be an increase in local motorized, pedestrian, and bicycle traffic because of the presence of workers at the mine. The Alaska Highway may also be impacted by the oil drilling project in Willow, which may require the transport of thousands of large modules up the Alaska Highway through Delta Junction and Fairbanks to the Dalton Highway to reach the North Slope.

On the Tok Cutoff/Tok Highway, AADT data north of Mentasta Lake show little change in traffic counts from 2010-2019, though there was a decrease in 2020. Traffic counts south of Mentasta Lake have shown a decline from 2010, with a steady decrease from 2016-2020. AADT counts have remained under 500 on this highway, with the highest volumes occurring near Tok.

AADT data do not show a clear trend on the portion of the Richardson Highway from Glennallen to Delta Junction, though there have been slight declines in traffic counts at the station north of the Denali Highway and the station at Jarvis Creek Bridge. Future traffic volumes may be impacted by expansion activities at Fort Greely, which is located south of Delta Junction, and tourism to the Castner Glacier ice caves and Summit Lake. Additionally, a preliminary planning study is underway for a regional airport for the Denali Borough, which may impact how people travel into and out of the region, including travel on the Richardson Highway. There was not a timeline available for the airport project at the time this plan was written.

This area, and particularly Delta Junction, would be impacted if the Alaska to Alberta railroad project is ever reinstated. Similarly, Fort Greely and the Richardson Highway would be impacted by the construction of an extension of the Alaska Railroad to Fort Greely.

6.4 Seasonally Dependent Highways

The Denali Highway, the Taylor Highway, and Top of the World Highway are closed during the winter and therefore only see traffic during the summer months.

The AADT data on the Denali Highway for 2010-2020 show generally low volumes of traffic. The station located east of the Parks Highway reported AADT counts in the high-100 to mid-200 vpd, which are slightly increasing over time. The station west of the Richardson Highway, however, reported lower counts (80 to low 100 vpd) with a slight

decrease over time. Similarly, the Taylor Highway experienced a slight decline in traffic counts over the same period with overall low volumes (AADT counts under 200). AADT data for the portion of the Top of the World Highway within Alaska, which connects to the Taylor Highway, show consistently low volumes of traffic, declining slightly over time.

The Denali Highway is expected to continue to be a popular drive for tourists. A preliminary planning study is underway for a regional airport for the Denali Borough, which may impact how people travel into and out of the region.

6.5 Southernmost Highways

The AADT data on the Glenn Highway for 2010-2020 show relatively minor change in traffic volumes over time on the portion of the highway within the IATP area. Counts farther west, near Nelchina, were slightly higher than those farther east. The counts in this area were increasing from 2014-2017 but started to decline in 2018 and beyond. The traffic counts farther east, closer to the Richardson Highway, show no clear trends.

A clear trend in traffic could not be determined for the portion of the Richardson Highway from the IATP area boundary to Glennallen. From the IATP area boundary to MP 62, traffic counts have remained consistent for the period between 2010-2020, whereas from MP 62 north to Glennallen counts were increasing from 2014 to 2018 before sharply dropping off in 2019 and 2020.

The AADT data on the Edgerton Highway for 2010-2020 show a steady overall decrease in traffic. Data near the start of the highway show that traffic counts have nearly halved over time, while counts farther east have changed less dramatically. There is typically a higher volume of traffic at the start of the highway, with the AADT station farther east counting a third of the traffic that the western station counts, though this may change as the population of McCarthy continues to grow. Chitina, located along the Edgerton Highway, experiences surges in traffic when people travel there for dip netting but does not otherwise experience high volumes of traffic.

6.6 George Parks Highway

The AADT data on the George Parks Highway for 2010-2020 show either minor change or slight declines in traffic counts from Nenana to the IATP area boundary. Counts from Nenana to Fairbanks show either minor change or increases in traffic until 2018, at which time most continuous count stations start to show a decline in traffic. Overall, 2020 AADT traffic volumes are higher closer to Fairbanks, typically over 10,000. Farther south past Nenana, the 2020 AADT counts dip below are below 2,000. Increased tourism to Denali and Healy could increase these numbers, though many visitors to Denali arrive via train.

Traffic on the George Parks Highway could be impacted by the eventual trucking needs of the Lucky Shot mining project or by future expansions of the Clear Space Force Station, formerly the Clear Air Force Station. A preliminary planning study is underway for a regional airport for the Denali Borough, which may impact how people travel into and out of the region, including travel on the Parks Highway.

7.0 KEY ISSUES AND RECOMMENDATIONS

The review of existing conditions, traffic forecasts, and public involvement summaries has assisted to identify key issues, concerns, and challenges. These have been grouped into theme categories and coupled with recommended next steps to improve DOT&PF's transportation system within the IATP area.

7.1 Improvements to Roads and Highways

Roadway User Safety Risks. Safety risks, both perceived and actual, continue to be a topic of concern for community members throughout the IATP area. Safety concerns include military convoy crashes on major highways, heavy truck use on roads and bridges with narrow lanes, lack of turning lanes to exit higher speed facilities for access to local roads and posted speed limits along communities that use major DOT&PF roadways as a main street. Additionally, the conditions of DOT&PF-owned facilities pose a risk, for example the Alaska and Richardson Highways experience heavy frost heave, narrow lanes and shoulders, and a lack of non-motorized facilities, resulting in extremely unpredictable roadway conditions for all users.

Recommendation: Collaborate with local communities to address safety risks that address local concerns and issues. **Example Solution Ideas from Community Meetings include:**

- Turning lanes along the George Parks Highway for local road access to reduce risk of rear-end collisions.
- Reduce posted speeds as appropriate for local community users of the roadways system.
- Improve advanced signage and turning lanes for access to rest stops, pull-outs, and toilets along roadways.
- Improve or add non-motorized facilities adjacent to current DOT&PF-owned facilities to provide safer access for users of all ages and abilities.

Recommendation: Collaborate with landowners such as BLM to make sure points of interest have sufficient parking to prevent users from parking along highways and roadways.

Non-Motorized Facilities. A major theme for all community plans and public outreach included a desire for more non-motorized facilities to provide options for connections between communities that are safe for both pedestrian and bicycle users.

Recommendation: Continue to implement the recommendations detailed in the ASATP.

Roadside Amenities. The IATP area includes long stretches of DOT&PF facilities that are without access to goods or services for hundreds of miles. Roadways users, including locals, freight truckers, and tourists, benefit from state-owned and maintained facilities such as rest stops and pull-outs along the roadways. Additionally, community feedback requested that these amenities be available year-round.

Recommendation: Increase location and year-round maintenance of public rest stops, including restroom facilities, along all major highways.

7.2 Resiliency & Risk

Annual Flooding of Community Infrastructure. The in-person public outreach efforts for the IATP update included a visit to the community of Glennallen. Glennallen community members reported ongoing, annual flooding events that have adversely impacted community infrastructure including all levels of roadways, public buildings, schools, and homes. When DOT&PF-owned roadways flood, the community is stranded without access to goods and services during a flood emergency. Although DOT&PF is responding to emergencies, the community reported a lack of knowledge regarding the DOT&PF emergency response and efforts to address ongoing flooding events.

Recommendation: Increase efforts to communicate DOT&PF emergency response plans for infrastructure damage and coordinate with local entities on emergency response planning and implementation.

Recommendation: Reevaluate local flooding causes and determine any long-term solutions to maintain DOT&PF-owned infrastructure resiliency.

7.3 Other Identified Issues

Forecasting Tools. Throughout Alaska, data collection for surface transportation facilities and user experience is largely organized by DOT&PF on a regional basis, if not at a sub-region level. However, best practices for regional and statewide LRTP efforts, such as the IATP, includes forecasting travel and traffic demands on the surface transportation system, which would benefit from a holistic, system-wide approach. Investment in a statewide approach to a travel demand model would provide a benefit for statewide planning activities such as modeling future scenarios based on potential changes to land use, major economic developments, and population shifts.

Recommendation: Create and maintain a statewide traffic/travel demand model tool (TDM).

Data Gaps. Data gaps exist for roadside assets in or adjacent to the DOT&PF right-of-way. These gaps include non-motorized facilities, toilets, and rest stops.

Recommendation: Create inventory of road user amenities including rest stops, pull-outs, and toilets.

Recommendation: Create an inventory of existing non-motorized facilities.

Recreation and Tourism. Recreation and tourism are key economic drivers in the Interior. Information about how to access points of interest such as trailheads and campgrounds exist in many different locations, and it can be difficult to find one comprehensive free resource. There are also areas where access does not exist or needs to be improved.

Recommendation: Build on the "Last Funtier" initiative by collaborating with landowners, communities, and other agencies to conduct tourism and recreation corridor studies that will identify existing and needed surface and intermodal connections, facilities, and safety improvements. These studies should evaluate existing and desired travel routes, gaps in amenities, maintenance and operations considerations, and traffic impacts.

APPENDICES

Appendix 1: Bridge Inventory

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Steese Highway	Fairbanks Mining Road Undercrossing	2059	19.5	121
	Captain creek	820	31.1	51
	Kokomo creek	821	35.8	51
	Trooper Gabe Rich Memorial	392	37.4	317
	Crooked Creek	816	38.8	56
	Belle Creek	822	39.9	100
	McKay Creek	823	41.1	111
	Boston Creek	7132	42.1	11
	Long Creek	799	43.8	32
	Sourdough Creek	825	62.9	44
	Faith Creek	430	66.1	80
	Idaho Creek	7135	74.4	13
	Reed Creek	826	84.9	57
	North Fork 12 Mile Creek	275	89.4	123
	Willow Creek	827	91.6	57
	Bear Creek	828	93.3	47
	Fish Creek	829	95.4	57
	Ptarmigan Creek	1242	97.0	116
	Mammoth Creek	831	111.3	47
	Bedrock Creek	7137	113.9	10
	Boulder Creek	832	120.0	52
	Crooked Creek	431	122.5	81
	Albert Creek	833	125.7	76
	Crazy Creek	7167	138.9	15
	Birch Creek	355	141.7	355

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
George Parks Highway	Shirley Demientieff Memorial	201	269.508404	617
	Jack Coghill Bridge to the Interior	216	240.099095	510
	Crabbie S Crossing	694	195.406591	358
	Riley Creek	695	201.45364	230
	Chena River (Parks Highway NB)	1913	318.921822	520
	Bison Gulch	1142	207.823117	148
	Panguingue Creek	313	216.737075	127
	Little Goldstream Creek	678	278.796399	67
	Julius Creek	317	249.925005	85
	Carlo Creek	693	188.201787	77
	Alder Creek	7118	311.620085	10
	Parks Highway Railroad Underpass	696	200.931021	240
	Dragon Fly Creek	1075	206.602631	82
	Jack River	302	173.967199	197
	Airport Way OC	1914	319.380118	126
	Bear Creek	311	233.653451	81
	Antler Creek	1141	208.857175	220
	Nenana River Parks Station	1147	202.187432	500
	Dry Creek Overflow	852	213.520709	180
	Fish Creek	722	261.015315	62
	Nenana River at Windy	1243	180.123459	389
	Parks/Chena Ridge Number 2 (To Fairbanks)	1879	318.166286	107
	Nenana River at Moody	1143	207.109036	891
	Hornet Creek	1145	204.450112	92
	Rex Overhead	1993	240.557453	72
	Fox Creek	1144	205.436462	82
	Mondersoa Overhead	1980	272.419359	144
	Dry Creek	851	214.034443	301
	Kingfisher Creek	697	202.454868	111
	Rock Creek Overflow	7114	225.535926	34
	June Creek	7115	233.348544	10
	Eagle Creek	7111	206.230816	13
	Alaska Native Veterans Honor	202	269.205412	1307
	Birch Creek	7116	236.831909	10
	Slate Creek	7113	222.048956	32
	Bonanza Creek	7117	293.745789	10
	Cushman Street Overcrossing	1705	323.659231	106
	Little Panguingue Creek	7112	235.132466	10
	Ice Worm Gulch	1146	204.273885	82

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Chena Hot Springs Road	North Fork Chena River	242	55.132	106
	North Fork Chena River	237	48.770	182
	North Fork Chena River	234	43.852	182
	West Fork Chena River	239	52.155	163
	Jenny M Creek	312	20.025	63
	North Fork Chena River	232	37.674	162
	Angel Creek	238	49.635	82
	North Fork Chena River	4058	37.034	28
	North Fork Chena River	235	45.523	122
	North Fork Chena River	233	39.294	162
	Little Chena River	270	11.749	123
	Monument Creek	1319	56.413	41

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Denali Highway	Seattle Creek	690	110.965492	124
	Fish Creek	4009	128.521463	35
	Canyon Creek	688	94.689897	152
	Susitna River	687	79.220967	1039
	Rock Creek	684	24.640316	60
	MacLaren River	685	41.708212	362
	Clearwater Creek	686	55.623155	157
	Gulkana River	681	0.219635	81
	Tangle Creek	683	21.239985	103
	Brushkana Creek	689	104.325756	81

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Glenn Highway	Mendeltna Creek	551	143.681423	89
	Tolsona Creek	552	163.429541	116
	Little Nelchina River	1241	128.622737	285
	Little Woods Creek	7106	159.285134	10

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Alaska Highway	Black Veterans Recognition	503	24.237671	119
	Scott Johnson Memorial	506	85.20565	360
	Desper Creek	7084	4.041695	12
	Tenmile Creek	7085	30.319853	11
	Sheep Creek	4000	117.998505	20
	Johnson River	518	155.922323	970
	Bear Creek	513	133.098231	55
	Robertson River	509	123.096123	1979
	Cathedral Rapids Number 2	510	114.510459	68
	Beaver Creek	504	44.989535	80
	Sears Creek	516	150.065987	26
	Tanana River	505	79.201656	903
	Sawmill Creek	521	179.364218	139
	Jerrick Creek	507	109.46151	202
	Cathedral Rapids Number 1	508	113.972338	68
	Chief Creek	514	134.47777	41
	Little Gerstle River	519	163.863383	200
	Scottie Creek	501	2.028073	126
	Gerstle River	520	168.119631	1819
	Berry Creek	515	147.14988	90
	Cathedral Rapids Number 3	511	114.824745	68
	Dry Creek	517	153.678503	42

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Tok Cutoff/Tok Highway	Gakona River	646	1.7	336
	Tulsona Creek	1250	17.6	148
	Sinona Creek	648	34.0	91
	Chistochina River	649	34.7	798
	Indian River	651	43.1	164
	Athell Creek	652	59.8	110
	Porcupine Creek	653	63.0	41
	Carlson Creek	888	66.6	41
	Slana River	654	74.3	224
	Slana Slough	655	74.7	122
	Mabel Creek	656	75.2	122
	Bartell Creek	657	82.1	41
	Little Tok River	1092	96.0	136
	Tok River	663	101.5	336
	Tok River Overflow	4106	102.2	28
	Tok River Overflow #2	4107	102.3	26
	Clearwater Creek	2102	107.1	105

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Edgerton Highway/ McCarthy Road	Chokosna River	1193	60.249668	103
	Kuskulana River	397	50.593964	775
	Strelna Creek (Minor Culvert)	7183	48.254643	17
	Gilahina River	1194	62.40199	41
	Copper River (Chitina)	205	34.594628	1378
	Lakina River	1195	77.429482	336
	Willow Creek	4081	5.360939	27
	Liberty Falls Creek	279	23.501682	175
	Tonsina River	288	19.234625	351

Roadway	Waterbody/Bridge Name	Bridge Number	Starting Mile Post (MP)	Length (Feet)
Taylor Highway	Logging Cabin Creek	276	41.7	80
	West Fork Dennison River	442	48.0	189
	Taylor Creek	277	49.2	23
	Mosquito Fork	441	63.0	219
	Chicken Creek	1140	65.2	26
	South Fork 40 Mile River	839	73.5	300
	Walker Fork 40 Mile River	299	80.0	189
	Forty Mile River	297	110.7	558
	O'Brien Creek	298	111.3	189
	Alder Creek	296	115.1	110
	Columbia Creek	322	122.5	60
	King Solomon Creek	380	129.6	80
	North Fork King Solomon Creek	321	133.7	110
	Discovery Fork Creek	840	146.6	80
	American Creek #1	841	149.2	110
	American Creek #2	842	149.8	110

Section Four

Waterways Analysis: Conditions, Issues, and Trends

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS II

1.0 INTRODUCTION 2

1.1 Purpose of the Memorandum 2
1.2 Interior Alaska Transportation Plan Riverine System, Past and Present 2
1.2.1 Past 2
1.2.2 Present 2

2.0 REVIEW OF RELATED PLANNING DOCUMENTS 4

2.1 Alaska 2036 Long-Range Transportation Policy Plan Update – (2016) 4
2.2 Alaska Moves 2050: Statewide Long-Range Transportation Plan Update (2022) 4
2.3 Alaska Moves 2050: Statewide Freight Plan (2023) 4

3.0 RIVERINE PORT SYSTEM OVERVIEW 7

3.1 System Description 7
3.1.1 Yukon River 7
3.1.2 Tanana River 7
3.2 Community Profiles 7
3.2.1 Beaver 8
3.2.2 Circle 9
3.2.3 Fort Yukon 9
3.2.4 Nenana 10
3.2.5 Rampart 11
3.2.6 Stevens Village 11
3.2.7 Tanana 12
3.2.8 Commonalities Among Communities 12
3.3 Facility Inventory and Intermodal Connection Points 13
3.4 Barge Facilities 15
3.5 River Barging Service Providers 16

4.0 RIVERBANK REALITIES AND BRIDGING THE GAPS 18

4.1 Riverbank Realities 18
4.1.1 Shifting River Dynamics 18
4.1.2 Beat by Aviation 18
4.1.3 Funding Opportunities and Limitations 18
4.2 Bridging the Gaps 20
4.2.1 Protect and Provide Facilities 20
4.2.2 Prioritize Service 20
4.2.3 Program Development & Management 21
4.3 Summary 21

FIGURES

Figure 1 Interior Alaska Transportation Plan Area....3

TABLES

Table 1 Communities in Proximity to the Riverine System....8
Table 2 Riverine Facility Inventory, Services, and Intermodal Connection Points....14
Table 3 Interior Alaska Riverine Barge Service Providers....17

ACRONYMS AND ABBREVIATIONS

2036 LRTP	Let's Keep Moving: Statewide Long-Range Transportation Plan 2036 Update (2016)
2050 LRTP	Alaska Moves 2050: Statewide Long-Range Transportation Plan
ARRC	Alaska Railroad Corporation
ASFP	Alaska Moves 2050: Statewide Freight Plan
BIL	Bipartisan Infrastructure Law
CAP	Continuing Authorities Program
CFR	Code of Federal Regulations
DOT&PF	Alaska Department of Transportation and Public Facilities
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
HPP	Tribal High Priority Projects
IATP	Interior Alaska Transportation Plan
IATP area	Interior Alaska Transportation Planning Area
MARAD	U.S. Maritime Administration
memo	technical memorandum
PAS	Planning Assistance to States
PIDP	Port Infrastructure Development Program
SIRA	Safe Ice Roads for Alaska
STBG	Surface Transportation Block Grant
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
WIFIA	Water Infrastructure Finance and Innovation Act

1.0 INTRODUCTION

1.1 Purpose of the Memorandum

This technical memorandum (memo) provides results from the review of related plans and policies, documents existing conditions of riverine cargo system facilities, and identifies key issues and recommendations for a 20-year planning horizon within the boundaries of the Interior Alaska Transportation Plan (IATP) area (Figure 1). Riverine transportation includes commercial- or community-owned barge, harbor, and port transportation facilities. It may also include identified locations that lack formal facilities along with their intermodal connection points, which may be owned by entities such as the Alaska Department of Transportation and Public Facilities (DOT&PF) and the Alaska Railroad Corporation (ARRC).

Communities within the IATP area rely on the riverine system for many uses including subsistence, recreation, inter-community access and access to larger communities, and shipment and delivery of goods via barge. The shipment of goods via barge is beneficial to communities on the riverine system that are off the road system within Alaska, as barge service offers an alternative to delivery by air, which is often more expensive for small communities.

This memo presents information to update the overall IATP, which will include recommended funding and implementation strategies for regional multi-modal transportation systems.

1.2 Interior Alaska Transportation Plan Riverine System, Past and Present

1.2.1 Past

The riverine system has been a significant resource for the transportation of goods and people within the IATP area. The Indigenous Athabascan populations have historically traveled the riverine system between camps and trading centers. Riverine traffic increased during the Klondike Gold Rush, mostly on the Yukon and Tanana rivers. As a result, small mining towns were established by prospectors and their counterparts along the riverbanks. Although many of these communities did not last long, those that remained became permanent locations for some of the remaining Native Alaskan communities.

Completion of the Alaska Railroad in the 1920s led to decreased dependency on the riverine system for both shipment of goods and travel. An additional decline in dependency on river transport occurred in the 1920s and 1930s as Nenana replaced Fairbanks as the principal port for the Yukon and Tanana rivers system, while Fairbanks remained the hub for the Alaska Railroad. This decreased dependency may also be attributed to an increase in the road network and an increase in aircraft accessibility in some regions of the Interior planning area.

1.2.2 Present

Today, cargo is delivered to communities within the IATP area through multiple modes of transportation including air, rail, roads, and rivers. In most cases, cargo is shipped using a combination of these modes. For example, bulk goods may be trucked from Anchorage to Fairbanks. Once in Fairbanks these goods are offloaded from trucks and loaded onto Alaska Railroad railcars bound for Nenana. Once the goods arrive at the Port of Nenana, Nenana Port Authority workers unload the goods, and they are either placed in dry storage at the port or loaded onto barges to go to their final destinations in communities along the Yukon and Tanana rivers.

In addition to barge and cargo uses, the riverine system in the interior planning area continues to be used for personal transport, recreation, and subsistence. These activities originate from public or private docks, boat ramps, and harbors throughout the region. These activities are able to traverse additional places in the interior that barges are unable to navigate as they require smaller vessels that are able to maneuver through shallow waters.

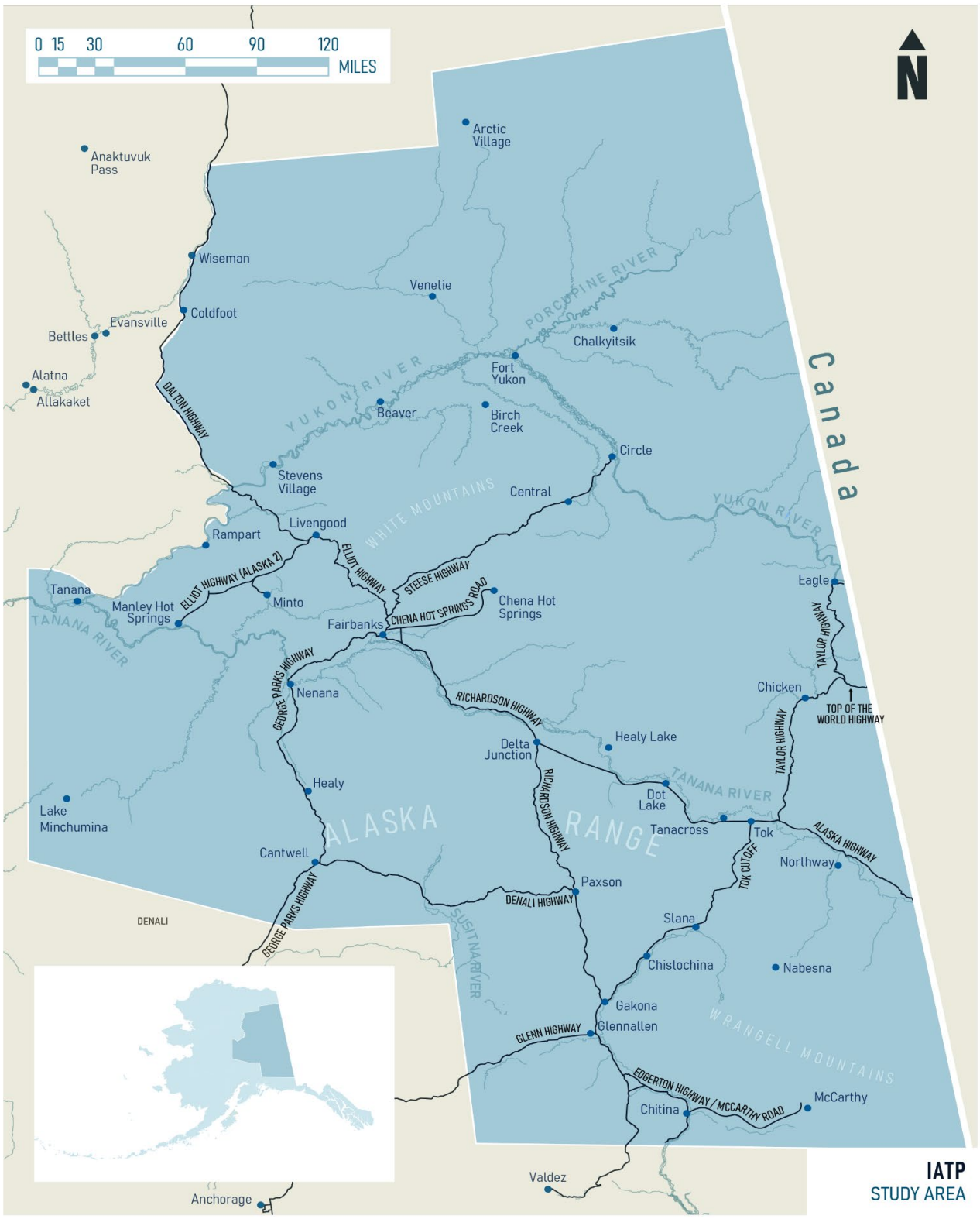

Figure 1 Interior Alaska Transportation Plan Area

2.0 REVIEW OF RELATED PLANNING DOCUMENTS

2.1 Alaska 2036 Long-Range Transportation Policy Plan Update (2016)

The Alaska 2036 Long-Range Transportation Policy Plan Update (2036 LRTP) operates under Title 23 Code of Federal Regulations (CFR) 450.216 and is a guide for the State of Alaska and the DOT&PF through the year 2036 to establish policies and investment priorities. The 2036 LRTP establishes a vision to provide a transportation system that enables a robust and growing economy and meets the mobility needs of all facility users in the state.

Policies, goals, and actions were determined by addressing trends for travel growth and demand, delivery and supply systems, existing public policy, public expectation, financial capacity, climate change, and extreme weather events.

2.2 Alaska Moves 2050: Statewide Long-Range Transportation Plan Update (2022)

The Draft Statewide Long-Range Transportation Plan Update, Alaska Moves 2050 (2050 LRTP) was released for public comment in June 2022. The plan is an update of the 2036 LRTP and incorporates a performance-based planning framework to support improved decision making, higher return on investments, better accountability, and transparency, and improve performance of the transportation system. The 2050 LRTP lists three top transportation priorities by region. The priorities identified for the Interior Region are as follows:

- Mobility for all Alaskans
- Operation and Maintenance of the System
- Resiliency

Future transportation challenges identified for the Interior Region include:

- Serving the communities within the Interior
- Providing for how people move around, including transportation modes such as road/highway, rail, air, and water
- Supporting facilities for the transportation of goods, including on the road/highway, rail, air, and water
- Providing opportunities for economic prosperity, including mining, tourism, military, and for subsistence

The 2050 LRTP establishes a range of goals, policies, actions, and performance measures to guide future transportation investment and measure results. The plan guides future programming of funds for transportation investment in Alaska.

2.3 Alaska Moves 2050: Statewide Freight Plan (2023)

The Alaska Moves 2050 Statewide Freight Plan (ASFP) focuses on safely and efficiently moving people and goods while aligning with federal, state, and local transportation priorities. The ASFP uses a performance-based planning approach to identify improvements and develop implementation strategies to execute the ASFP. Trends, challenges, and opportunities related to freight traffic were identified in the ASFP by evaluating safety, travel mode, travel pattern, climate, existing surface condition, and existing facilities data.

The State of Alaska and the DOT&PF's freight system goals are:

- **Safety:** Increase safety for all modes during the movement of freight.
- **Mobility and Access:** Move goods safely, reliably, and cost-effectively across Alaska.
- **Economic Vitality:** Facilitate economic growth and lower the cost of goods and services.
- **State of Good Repair:** Keep what we have in a state of good repair.
- **Resiliency:** Have a freight network that can recover quickly from disruptions.
- **Sustainability:** Promote a sustainable, clean, equitable freight system.
- **Strategic Partners:** Collaborate with other levels of government, industry partners, and the public.
- **Stewardship of the Transportation System:** Find the best, most affordable ways to improve the freight network.
- **Performance-Based Management:** Have stable, flexible, and long-term funding sources.
- **Transportation Innovation:** Leverage innovations that benefit safety, efficient freight movement, and work force needs.

The intermodal connectors for riverine facilities within the IATP area identified in the ASFP are:

- Fairbanks International Airport
- Port of Nenana
- Dalton Highway connecting Fairbanks to Coldfoot
- The Eisenhower Interstate System which includes:
    - George Parks Highway
    - Richardson Highway
    - Alaska Highway
    - Glenn Highway
    - Tok Highway
- The non-interstate portion of the Richardson Highway connecting Delta Junction to Glennallen
- Alaska Railroad Corporation Fairbanks Rail Yard

Key trends related to riverine facilities and ports:

- Many riverine facilities and ports lack strong multimodal connections to transfer goods from the port to the community.
- Goods are transported via road/highway, rail, air, and water.
- Port infrastructure is aging and funding for improvements is limited.

Challenges related to freight truck traffic and the roadway system identified in the ASFP are included in the Surface Transportation Technical Memorandum. However, several of those challenges are relevant to the riverine system because many communities are reliant on intermodal connection points where cargo is transferred from one mode of transport to another. These challenges are listed below.

- Limited funding, retiring personnel, studded-tire use, and climate change impacts.
- Lack of road network redundancy leading to system-wide safety and access vulnerability.

- Travel time reliability is impacted by external factors, such as extreme weather events, road maintenance and mitigation, lack of network redundancy, and road capacity.
- Bridge height, overhead clearance, load restrictions, and roadway seasonal weight restrictions.
- Sole reliance on Highway Safety Improvement Program funds for safety improvements without additional state or more flexible federal funding.
- DOT&PF data is inconsistent with established DOT&PF boundaries and federally reported data.

A list of opportunities identified from the ASFP to address these challenges is provided in the Surface Transportation Technical Memorandum. For the purposes of this memo, the opportunities listed below are those focused on the riverine system.

- Developing Tribal Safety Plans to improve coordination and alignment between DOT&PF, rural, and Tribal leaders
- Expanding of the data-driven safety approach to emphasize treatment cost-effectiveness assessments and Highway Safety Manual screening and evaluation methods at the project level
- Treating and rehabilitating pavements and bridges in good and fair condition before deteriorating to decrease a project's life cycle cost
- Continuing to allocate resources for improved data collection, management, and analysis to aid in accurately prioritizing investments, management of assets, and required reporting.

3.0 RIVERINE PORT SYSTEM OVERVIEW

3.1 System Description

The riverine system within the IATP area is composed of many rivers that provide for subsistence-based living, recreational opportunities, and access between communities; however, most rivers are not suitable for barge traffic. In the IATP area, barge service is limited to the Yukon and Tanana rivers. Barge service is a seasonal dependent service, from mid-May through mid-October, when the rivers are typically ice-free.

The Yukon and Tanana rivers serve the IATP area from two hubs (i.e., cargo hubs) where most shipments of goods originate: Port of Nenana and community of Tanana. These communities are in areas with easy access from both Fairbanks and Anchorage, contain additional intermodal access points, and have ability to store goods prior to shipment.

During the winter season, when the rivers in the region freeze over and inhibit the ability for barge service, the Yukon and Tanana rivers are used as ice laden roadways connecting communities. These seasonal ice roads and winter trails are vital in providing communities on the riverine system access in many different ways depending on the capabilities. For some, like the community of Healy Lake Village and the surrounding communities of the Upper Tanana subregion that cannot receive barge service due to river conditions, these ice roads provide the ability to receive fuel and other bulk goods via truck transportation. This ability is more cost effective than having to depend solely on air cargo. For other communities, such as Fort Yukon that has an established barge service and receives fuel and bulk goods consistently during the service season, the use of the ice roads or winter trails are not so focused on stocking the community and reducing costs by avoiding air cargo fees; but on being able to have connection with other communities which boosts economic, social, cultural, and mental health during the potentially harsh winters of the IATP area.

3.1.1 Yukon River

The source of the Yukon River is Llewellyn Glacier at Atlin Lake in Atlin District, British Columbia, Canada and flows through Canada and Interior Alaska then discharges into the Bering Sea at Kusilvak, Alaska. The average width of the Yukon River within the IATP area is about 0.50 miles. Average depth is 40 feet and the river's maximum depth within the IATP area is near the community of Rampart with a depth of 130 feet. Although most of the Yukon River is deep enough to enable barge traffic, there are areas such as Stevens Village where depths are measured at seven feet and Circle where depths are measured at five feet, both of which limit barge service.

3.1.2 Tanana River

The Tanana River is a tributary of the Yukon River with headwaters that emerge at the confluence of the Chisana and Nabesna rivers within the IATP area near the community of Northway. Depths along the Tanana River are not as widely reported as they are for the Yukon River, but data from the National Oceanic and Atmospheric Administration, Advanced Hydrologic Prediction Service shows a steady pattern of depth measurements of about 21 feet at Fairbanks. This depth is consistent along the Tanana River as it flows north from Nenana and provides a maximum draft for loaded river barges of about 4.5 feet. Even with a consistent depth providing the ability for barges to navigate, the shifting river channels continue to make navigation difficult.

This difficult navigation is even more problematic upstream of Nenana, specifically between Fairbanks and Delta due to velocity (elevation drop). This difficulty inhibits barges from navigating this section of the Tanana River, leaving communities such as Delta without barge service.

3.2 Community Profiles

There are 62 communities in the IATP area. Twelve (12) communities are within proximity to the riverine system, with seven identified as actively receiving cargo via barge service on the river system. Some communities are within proximity to the riverine system but are not active on the transportation system because of limitations within

the river system. For example, at Manley Hot Springs, river depths are too shallow to sustain barge deliveries and at Chalkyitsik, where historically barge deliveries were made during high water times, changing water depths now restrict barge traffic.

Table 1 lists communities within the IATP area within proximity to the major riverine systems, status as an on- or off-road community, and whether they receive barge service. These specific identifiers enable comparison of communities considered off-road and use of barge service. The cost of barging bulk goods such as fuel and heavy equipment can be less than other shipping options such as air freight. When limited to air cargo, shipping costs range from $0.40 per pound to $0.89 per pound according to the 2019 Tanana Chiefs Conference Regional Transportation Strategy, which includes many of the communities within the IATP area.

Table 1 Communities in Proximity to the Riverine System

Community	On Road/Off Road	Barge Service?	Riverine System
Beaver	Off Road	Yes	Yukon
Chalkyitsik	Off Road	No	Yukon
Circle	On Road	Yes	Yukon
Delta Junction Area	On Road	No	Tanana
Eagle City/Village	Seasonally On Road	No	Yukon
Fort Yukon	Off Road	Yes	Yukon
Healy Lake Village	Off Road	No	Tanana
Manley Hot Springs	On Road	No	Tanana
Nenana	On Road	Yes	Tanana
Rampart	Off Road	Yes	Yukon
Stevens Village	Off Road	Yes	Yukon
Tanana	Seasonally On Road*	Yes	Yukon & Tanana

*The road to Tanana stops six miles from the community

Regardless of availability of seasonal barge service, as mentioned, some communities establish winter ice roads or winter trails on the river to facilitate the transport of goods using winter ready vehicles such as trucks, cars, snowmachines, and dog sled teams. These communities include Healy Lake, Fort Yukon, Tanana, and Rampart.

To help better understand the conditions, profiles of the seven communities identified as active on the riverine system during the barge season are provided below.

3.2.1 Beaver
Tsee Duu (Gwich'in)
Ts'aahudaaneekk'onh Denh (Koyukon)

Translation of Alaska Native Village Name: Beaver Village (Gwich'in)[1] Where the Forest Fire Burned Out (Koyukon)[1]

Language: Gwich'in & Koyukon Athabascan

2022 Population: 54

Percent of Population Identified as Alaska Native: 100 percent

Median Household Income: $33,036

Percent of Population Below Poverty: 24.4 percent

Main Employment Industry: Utilities

Air Cargo Price per Pound 2018: $0.52

Community: Beaver is situated on the north bank of the Yukon River and does not have roads connecting to the rest of Alaska. Fuel, store-bought goods, mail, additional supplies, and people make their way to Beaver by aircraft or barge service.

Summer Use: The 2016 Beaver community plan mentions two trips up the Yukon River may be made by Ruby Marine out of Nenana during the summer. Ruby Marine delivers fuel, heavy equipment, bulk goods, and other large freight. Although Beaver receives goods via barge, there is not an official barge landing facility. Other uses for the river during the summer months include recreational and subsistence activities by private boat.

Winter Use: The community relies on air service from Warbelow's Air in the winter. Service is offered Monday through Saturday with most flights originating from Fairbanks. Additional transportation methods in the winter include snowmachine and dog sled team.

3.2.2 Circle
Danzhit Hanlaj

Translation of Alaska Native Village Name: The Place Where the River Comes out of the Canyons and the Flats Start[1]

Language: Gwich'in Athabascan

2022 Population: 91

Percent of Population Identified as Alaska Native: 69 percent

Median Household Income: $26,875

Percent of Population Identified as Below Poverty: 13.8 percent

Main Employment Industry: Public Administration

Air Cargo Price per Pound 2018: $0.51

Community: Circle is situated on the west bank of the Yukon River and is accessible by road via the Steese Highway and air through Circle City Airport. Circle is 155 miles by road and 130 air miles from Fairbanks. The Circle 2020 to 2025 Community Plan identifies the community as a strategic location for the movement of freight, fuel, and additional goods transferred from the road network to river traffic along the Yukon River.

Summer Use: Summer barge transport on the Yukon River provides a cost-effective option for receiving shipments of fuel, heavy equipment, and goods. The river is also used for recreational and subsistence activities by private boat.

Winter Use: There is no substantial winter use of the riverine system for the movement of goods. Residents travel the surrounding areas by snowmachine and sled dog team.

3.2.3 Fort Yukon
Gwichyaa Zhee

Translation of Alaska Native Village Name: House on the Flats[1]

Language: Gwich'in Athabascan

2022 Population: 499

Percent of Population Identified as Alaska Native: 75.6 percent

Median Household Income: $36,250

Percent of Population Identified as Below Poverty: 12.1 percent

Main Employment Industry: Public Administration

Air Cargo Price per Pound 2018: $0.60

Community: Fort Yukon is off the road system at the confluence of the Yukon and Porcupine rivers approximately 145 air miles northeast of Fairbanks. There is not a barge landing in Fort Yukon, instead there is only a barge off-loading area. The barge off-loading area in Fort Yukon was replaced in 2014 after adoption of the 2010 IATP that identified the off-loading area as non-existent due to erosion. Based on a conversation with an individual from the Gwichyaa Zhee Gwich'in Tribal Government office, the barge off-loading area constructed in 2014 continues to be affected by erosion. A bulk fuel storage facility and office owned and managed by Crowley Fuels are also at the landing. These facilities allow Crowley to receive delivery of heating fuel, Jet A fuel (during summer), unleaded gasoline, diesel fuel blend, and marine cargo delivery.

Summer Use: During the summer, fuel, heavy cargo, supplies, and goods are barged in by Ruby Marine. Residents use the river for recreational and subsistence activities by private boat.

Winter Use: During the winter, as the weather permits, the river is maintained as an ice road which promotes increased access between communities along the Yukon River and allows community members a chance to gather wood.

3.2.4 Nenana
Toghotthele

Translation of Alaska Native Village Name: Mountain that Parallels the River[1]

Language: Tanana Athabascan

2022 Population: 355

Percent of Population Identified as Alaska Native: 32.2 percent

Median Household Income: $43,750

Percent of Population Identified as Below Poverty: 27.6 percent

Main Employment Industry: Educational Services

Air Cargo Price per Pound 2018: N/A

Community: Nenana is a transportation hub for Interior Alaska, at the junction of the Parks Highway, Alaska Railroad, and the Tanana River. Nenana is on the Parks Highway, 55 miles southwest of Fairbanks and 302 miles northeast of Anchorage. Daily buses operate out of Nenana year-round providing connection to either Anchorage or Fairbanks.

The Nenana Port Authority, overseen by the municipality, is responsible for operating the facilities in Nenana which consist of a dry cargo loading and unloading area, dock, bulkhead, and warehouse. Due to the shallow depths of the Tanana River, the maximum draft for loaded river barges is 4.5 feet. The Port is developed on both sides of the Tanana River; the south side is owned by ARRC and is operated by the City of Nenana, while the north side is a privately-owned riverine port.

As of 2025, Crowley has for all intents and purposes ceased operations at the Port of Nenana. At present there is no fuel storage facility at the Port nor is there anyone operating commercially out of the Port.

Summer Use:

Ruby Marine uses a private trucking company to haul fuel to Nenana that is then loaded onto barges at their private facility about one mile north of the Port.

A public boat launch and recreational area provide access to the Nenana and Tanana rivers. The 2019 to 2023 Nenana Community Development Plan indicated an update to infrastructure and facilities used for cargo would assist in attracting visitors and encourage tourism which could lead to increased revenue to help maintain Nenana's riverfront.

Winter Use: Ruby Marine does not provide service in the winter and operations typically start in May. All other storage operations continue out of the Port of Nenana.

3.2.5 Rampart
Delel Taaneets

Translation of Alaska Native Village Name: Where the Moose Hides Hang[1]

Language: Upper Koyukon Athabascan

2022 Population: 63

Percent of Population Identified as Alaska Native: 77.6 percent

Median Household Income: $43,750

Percent of Population Identified as Below Poverty: 23.9 percent

Main Employment Industry: Public Administration

Air Cargo Price per Pound 2018: $0.49

Community: Rampart is on the south bank of the Yukon River, approximately 75 miles upstream of the confluence with the Tanana River. Roadway access to Rampart, off the Elliott Highway, is only available during the winter. Year-round access is available by air via the Rampart Airport. The 2018 Rampart Economic Development Plan identified the present and past goals for the community including focusing on dust control, brush removal, adding additional street lighting, identifying and implementing appropriate street signage, developing a search and rescue plan, and developing a plan for data collection.

Summer Use: Rampart currently receives fuel and other goods via barge two or three times a summer, but the location has potential for additional barge service if the right infrastructure were to be provided. The river is also used for recreation and subsistence by private boat.

Winter Use: During the winter, as conditions allow, an ice road provides access between Rampart and the Elliott Highway, making deliveries possible via the road system.

3.2.6 Stevens Village
Dinyea

Translation of Alaska Native Village Name: People Who Live Where the River Comes out of the Canyon into the Flats[1]

Language: Upper Koyukon Athabascan

2022 Population: 28

Percent of Population Identified as Alaska Native: 100 percent

Median Household Income (estimated by American Community Survey): $26,250

Percent of Population Identified as Below Poverty: 22.2 percent

Main Employment Industry: Utilities

Air Cargo Price per Pound 2018: $0.45

Community: Stevens Village is on the north bank of the Yukon River, 17 miles upstream of the Dalton Highway bridge, 90 air miles northwest of Fairbanks. Access to Stevens Village is primarily via aircraft using the state-owned gravel airstrip.

Summer Use: Stevens Village receives fuel, freight, and goods via barge up to three times a year. Cargo is offloaded at the barge landing which is not a formal facility. Summer use also includes recreation and subsistence activities by private boat.

Winter Use: Stevens Village works to maintain an ice road to the Elliott Highway which provides road access to the community and allows for transport of goods such as fuel.

3.2.7 Tanana
Nuchalawoyya

Translation of Alaska Native Village Name: Where the Two Rivers Meet[1]

Language: Central and Upper Koyukon Athabascan

2022 Population: 223

Percent of Population Identified as Alaska Native: 82.1 percent

Median Household Income: $47,500

Percent of Population Identified as Below Poverty: 20 percent

Main Employment Industry: Public Administration

Air Cargo Price per Pound 2018: $0.63

Community: Tanana is near the confluence of the Tanana and Yukon rivers, 129 air miles northwest of Fairbanks. Tanana's primary mode of all-season transportation is air travel, offered seven days a week from service providers such as Wright Air Services, Era Aviation, Everts Air Fuel, and privately operated aircraft. Air transportation is reliable, but not always economical.

In 2016 the Alaska DOT&PF opened the "Road to Tanana", connecting Manley Hot Springs to the south bank of the Yukon River, approximately six miles upstream from Tanana. The road has led to increased mobility for those within the community and reduced freight and cargo transport costs. However, the 2022 Tanana Community Plan noted the road has limitations such as additional maintenance, exposure to natural hazards, and seasonal use.

Summer Use: Tanana receives weekly barge deliveries at the main docking facility including fuel, freight, and supplies. The river is also used for recreational and subsistence activities.

Winter Use: Weather permitting, Tanana operates an ice road for the movement of goods and people. The operation and maintenance of the ice road provides the community with affordable transportation between larger community hubs such as Fairbanks.

3.2.8 Commonalities Among Communities

Common themes related to use of the riverine system are reflected in the community profiles. Most consistently, communities rely on the riverine system for the transport of people and goods between smaller camps and villages using skiffs and canoes, recreation and subsistence activities, seasonal barge, and winter access in specific communities.

Common issues and needs identified from the community plans are referenced in the community profiles such as need for increased access, concerns over eroding barge landings, and safety along the riverine systems including debris removal and wayfinding.

3.3 Facility Inventory and Intermodal Connection Points

Table 2 contains the riverine facility inventory, the facility type, operating authority, services offered, and the intermodal connection points. The first column identifies the specific riverine community while the second identifies the facility. There are three types of facilities identified for riverine communities within the IATP area, these include the following:

UNIMPROVED BARGE OFF-LOADING AREAS

These facilities are barge landings that are not accompanied by a proper facility such as a harbor, port, or dock. The communities with unimproved barge facilities will frequently have goods delivered and unloaded at the river's edge. This is done by the anchoring systems such as a deadman being added close to the shoreline; in recent years these anchoring systems have been placed by barge service operators themselves. Aside from grassroot efforts to construct and provide facilities to support barge activity, there are no formal facilities in these areas.

PUBLIC DOCKS USED AS BARGE LANDINGS

The use of public docks as barge landings is a type of informal barge facility. This use has been separated out from unimproved facilities as it provides infrastructure able to be used for barge activities, while unimproved facilities do not. However, the use of these public docks for barge landings come with their own set of challenges. For example, when a barge comes into a community to provide delivery at a public dock, extra coordination needs to take place between the barge service operator and the community to ensure the vessels that are currently moored at the dock or waiting to launch are able to clear the area long enough to allow safe passage. If vessels are not able to be cleared by the owners, the tugboats that assist in piloting the barge would be required to move the privately owned vessels that are using the dock to ensure delivery of goods to the community. This can cause tensions within the community and the barge service providers.

CARGO HUBS

Cargo hubs are the other type of facility seen within the IATP area, specifically in Tanana and Nenana. These cargo hubs are areas where goods can be initially transported and receive temporary storage prior to being placed on barges to their final destination.

In addition to the community and the facility type, Table 2 includes columns that identify:

Operating Authority – If there is not an operating authority able to be identified, such as at unimproved barge facilities, the operating authority is identified as "community (unorganized)," for others the official operating authority is identified.

Services – Any services offered at the facility are identified and provided; these services include delivery of various goods, winter activities, and recreational and subsistence use.

Intermodal Connection Points – This column identifies any intermodal connection point tied to the riverine facility; this includes airports, highways, railroads, and any winter ice roads or trails.

Identifying the facility type, operating authority, services, and intermodal connection points in Table 2 serves to illustrate the ways in which these riverine communities and their facilities compare and contrast across the geography of the IATP area. The columns labeled, facility type, operating authority, and services, are a way to quickly view and easily examine the way in which communities that operate with informal facilities, and how unorganized community led operating authorities are able to offer some of the same services as communities that are identified as cargo hubs. While the intermodal connection point column is pertinent in providing a straightforward way to view other ways that a community can be accessed. This simple column posses' significant information on the way a community can move within the IATP area.

Table 2 Riverine Facility Inventory, Services, and Intermodal Connection Points

Community	Facility	Operating Authority	Services	Intermodal Connection Points
Beaver	Unimproved Off-Loading Area	Community (Unorganized)	Delivery of bulk goods, heavy equipment, and fuel from Port of Nenana. Recreational and subsistence use.	Beaver Airport
Circle	Boat launch at the eastern terminus of the Steese Highway	Community (Unorganized)	Delivery of goods. Recreational and subsistence use.	Steese Highway Circle City Airport
Fort Yukon	Unimproved Off-Loading Area	Community (Unorganized)	Delivery of bulk goods, heavy equipment, and fuel Recreational and subsistence use. Winter use includes winter trail/ice road that serves as a connection between communities and access to necessities such as wood.	Fort Yukon Airport Porcupine River
Nenana*	Port of Nenana: dry cargo loading and unloading facilities, dock, bulkhead, and warehouse Public boat launch	Nenana Port Authority	Barge shipping headquarters for freight that continues on the Tanana or Yukon rivers. Recreational use.	George Parks Highway Alaska Railroad Nenana Municipal Airport Nenana and Tanana rivers
Rampart	Unimproved Off-Loading Area	Community (Unorganized)	Delivery of bulk goods, heavy equipment, and fuel. Recreational and subsistence use.	Elliott Highway (via ice road/ winter trail) Rampart Airport
Stevens Village	Unimproved Off-Loading Area	Community (Unorganized)	Delivery of bulk goods, heavy equipment, and fuel. Recreational and subsistence use.	Stevens Village Airport Seasonal ice road connecting community to the Elliott Highway during winter
Tanana*	Main Docking Area Near Airport	City of Tanana	Weekly barge shipments of supplies including goods for local communities. Barged goods can be offloaded at staging and storage area.	Seasonal roadway connects Manley Hot Springs to bank of the Yukon River near Tanana. Transportation still requires boat service to reach the community of Tanana. Winter ice road Ralph M. Calhoun Memorial Airport

*Communities regarded as barge cargo hubs

3.4 Barge Facilities

Three categories of barge facilities are identified for the communities within the IATP area: Un improved, Public Dock Barge Landing, and Cargo Hub. The categories are based on common characteristics in the facilities and capabilities across different communities and are further described in Section 3.1 System Description.

The following section describes the current barge facilities and their conditions within the IATP area. Erosion is a common issue at these facilities and refers to riverine erosion which is a breakdown of sediment due to flowing water. This erosion results in sedimentation, which is an increased accumulation of sediment on the bottoms of riverbeds, resulting in reduced depths (more shallow water).[2]

Beaver – Unimproved Off-Loading Area

Barge deliveries to Beaver by Ruby Marine occur two or three times in the summer and include fuel, bulk store goods, and additional supplies. The riverine system is navigated by local residents in private boats for purposes such as subsistence and recreation. Erosion and storage capacity are the predominant concerns for the barge facility in Beaver. Erosion would result in barge deliveries being unable to be completed due to insufficient water depth, while storage is a concern as there are not enough fuel storage tanks that can accommodate a large amount of fuel. The amount of fuel that is brought in must be calculated precisely to make sure the community has a sufficient supply. This must be done to ensure there is sufficient fuel to make it through the season until the next delivery.

Rampart – Unimproved Off-Loading Area

Rampart lacks a formal barge facility and, like the community of Beaver, has concerns about erosion. However, Rampart benefits in the winter by maintaining an ice road/winter trail that provides the opportunity for goods to be delivered via truck from the Elliot Highway.

Fort Yukon – Unimproved Off-Loading Area

Fort Yukon lacks a formal barge facility, instead there is a concrete pad used as a landing for offloading barges. The landing was replaced in 2014 due to erosion, but the landing continues to be affected by erosion. Fort Yukon had a landing placed by the United States Army Corps of Engineers (USACE), but it is not used by Ruby Marine or Yukon Barge due to where it is located. The owner of Ruby Marine has instead installed his own equipment in coordination with the community that is better suited for the vessels operated in the community.[3]

Crowley Fuels maintains an office and bulk fuel storage facility in Fort Yukon and delivers heating fuel, unleaded gasoline (bulk only), diesel fuel blend, and Jet A aviation fuel in the summer. This allows Fort Yukon to be less dependent on barge service for fuel deliveries than some of the other communities within the IATP area. However, Fort Yukon still benefits from the lower cost of shipping by barge for bulk deliveries other than fuel such as construction materials and heavy equipment.

Stevens Village – Unimproved Off-Loading Area

Barge deliveries to Stevens Village by Ruby Marine occur two or three times in the summer and include fuel, bulk store goods, and additional supplies. The riverine system is navigated by local residents in private boats for purposes such as subsistence and recreation. Erosion and storage capacity are the predominant concerns for the barge facility in Stevens Village for the following reasons:

- Shallow depths resulting from erosion can inhibit barge deliveries from being completed.
- Limited storage tanks for large amounts of fuel prevents the community from being able to have a backstock during the winter months when delivery prices are at their peak.

Overstocking fuel in a community comes at a high expense; this includes the initial capital investment in addition to any increased storage costs to maintain an overage of fuel. Similar to Beaver, it is essential that the amount of fuel that is delivered via barge is precisely calculated to ensure the community has a sufficient fuel supply to make it through the season until the next delivery. As a result of this precise calculation, Stevens Village does not have a backstock of fuel, which can put the community at risk in higher demand years.[3]

Circle – Public Dock Barge Landing

The recreational boat launch at the terminus of the Steese Highway in Circle is used as a barge landing as well as public river access and mooring. This mixed-use is not ideal for barge service operators as it requires coordination with private vessel owners and extreme diligence when navigating closely with small vessels.

The location of Circle allows for easy movement of freight, fuel, and additional goods from a roadway network to river traffic along the Yukon River. The community of Circle is considering developing dry storage facilities and potentially could become a new hub for communities such as Venetie Landing, Fort Yukon, Birch Creek, and Chalkyitsik. Of those communities, Circle is the only one with access to the road system. By becoming a small hub for the communities located in the Yukon Flats subregion, Circle would become an intermodal connection point to the Steese Highway and the greater Alaska road system.

There are limitations that exist with the development of Circle as a riverine cargo hub, which include the existing facilities, limited-service operators, a hard to navigate river basin, and erosion caused sedimentation.

Port of Nenana – Cargo Hub

The Port of Nenana facilities include a sheet-pile dock and storage yards for cargo and barge access. Some of the storage offered at the port is climate-controlled allowing for safe long-term storage of goods. The Port of Nenana is owned and operated by the city of Nenana, with the current mayor of Nenana always acting as the Port Director. Since the port is responsible for receiving international cargo, the Port Authority along with the Transportation Security Administration assists in operating the facility.
The Port of Nenana receives cargo bound for Interior communities from the Alaska Railroad or commercial trucks from Anchorage or Fairbanks via the Parks Highway. Goods can be stored prior to shipment, but the season for barge shipments can be short and unpredictable due to the variations in winter weather patterns and duration.

Tanana – Cargo Hub

Tanana has a single centralized docking area close to the airport. The community receives almost weekly barge deliveries of goods and supplies during the ice-free months.

3.5 River Barging Service Providers

At the time the 2010 IATP was developed, there were three barging service providers within in the IATP area: Crowley, Ruby Marine, and Inland Barge Service. In 2016, Ruby Marine bought Inland Barge Service and incorporated Inland's equipment and staff into Ruby's fleet. This acquisition resolved staffing shortages and competition between the companies to fill technical positions that require a long apprenticeship. In the past few years, Crowley has stepped away from the barging industry in the region but has maintained their status as a main provider and storage facilitator of fuel in the region. Crowley has contracted Ruby Marine to be the barge service provider for their fuel delivery. Additional service providers have been identified as Yukon River and Road, LLC based in the community of Galena and Yukon Barge, owned, and operated by Gerald James in the community of Fort Yukon. Yukon Barge provides services to the community of Circle by way of Fort Yukon, as the vessels operated by providers such as Ruby Marine are too large to make the journey. Service by these providers depends on many factors including weather

conditions such as wind, river conditions, and community need. In Table 3, the first column identifies the service provider while the second column identifies the communities at which each service provider has anticipated barge service stops. The last column includes a brief description of the estimated stops (frequency of service) each community has the potential to receive during each season.

Table 3 Interior Alaska Riverine Barge Service Providers

Service Provider	Location	Stops
Ruby Marine	Port of Nenana	Based out of the Port of Nenana – all deliveries for Ruby Marine originate at Port of Nenana.
	Tanana	~19 Stops – All vessels that leave Nenana stop in Tanana before making their way east or west.
	Rampart, Stevens Village, Beaver, Fort Yukon	Up to three times during season.
Yukon Barge	Fort Yukon	Based in Fort Yukon
	Circle	On-Demand/Scheduled
Yukon River and Road, LLC	All IATP area riverine communities	On-Demand

4.0 RIVERBANK REALITIES AND BRIDGING THE GAPS

The following key issues have been considered during the development of recommended actions, which seek to bridge the gaps these communities commonly face. This section describes the riverbank realities (key issues) and the ways to bridge the gaps (recommendations).

Key issues include shifting river dynamics, barge service providers feeling unheard, and historical funding limitations are all present throughout the IATP area. Additionally, airports tend to receive more funding to provide services and programs, which means communities with airport facilities tend to experience better levels of service, and this has exacerbated the challenges with providing services through traditional riverine facilities. These issues are present throughout the region.

4.1 Riverbank Realities

4.1.1 Shifting River Dynamics

Communities such as Fort Yukon, Rampart, and Stevens Village have barge landing areas impacted by erosion. Erosion has either inhibited the creation of new formal barging facilities, washed out existing formal barging facilities, or has caused sedimentation. This act of sedimentation caused by erosion has the potential to limit the size of vessel able to service the area. Combating sediment build-up due to erosion-caused sedimentation is to implement dredging, which is the act of removing sediments and debris from the riverbed to keep waterways navigable. Dredging can sometimes assist in flood management by helping to prevent rivers from overtopping their banks during flood events. There are some observed drawbacks when it comes to dredging which include increased erosion to riverbanks and surrounding infrastructure after the river has been dredged due to an increase in water volume able to flow.[4]

To address erosion, mitigation efforts start on the shoreline and include engineered solutions such as riprap, sandbags, concrete block retaining walls, log and earthen berms, and bioengineered stabilization.

4.1.2 Beat by Aviation

The development and success of upgrades to Interior Region airports have provided waterway communities the opportunity of all-weather 24-hour capable service. In conjunction with state funded job development focused on aviation careers, in the last 25 years one single air service has been able to acquire 22 Cessna Caravan airplanes. One single Cessna Caravan costs about the name as a new tugboat. For comparison, while that aviation service provider has been able to add 22 planes to its fleet, a barge service provider has been able to add just two tugs to its fleet in the last 40 years. The aviation system also has programs such as the Bypass Mail process which help to stimulate the system while the riverine system has “literally no programs that stimulate the marine [and riverine] transportation system,” as indicated during an interview in March 2024 with a barge service owner and operator.[3]

4.1.3 Funding Opportunities and Limitations

Often the inability to access the funding opportunities provided for riverine systems prevents the construction of new facilities, the maintenance of existing facilities, and the ability to offer technical assistance to communities for services such as grant writing. Table 4 identifies funding opportunities for riverine systems, their responsible organization, and the applicable programs and developments they support.

Table 4 Riverine System Funding Opportunities

Funding Opportunity	Organization	Description
NRCS Watershed Programs	United States Department of Agriculture (USDA)	Funds the use of good land management practices to contribute to watershed health.
Corps Water Infrastructure Financing Program	United States Army Corps of Engineers (USACE)	Authorized by the Water Infrastructure Finance and Innovation Act (WIFIA). Established Federal credit programs to be administered by USACE and the Environmental Protection Agency (EPA) for eligible water and wastewater infrastructure projects. Provides funding of up to 49% of project costs, or up to 80% of project costs for projects that serve and benefit economically disadvantaged communities. Requires a dedicated source of repayment. Available to projects or groups of projects with eligible costs in excess of $20 million.
Continuing Authorities Program (CAP)	USACE	Focuses on smaller projects (typically under $15 million), the intention of this program is to plan, design, and construct water resource projects of limited scope and complexity.
Planning Assistance to States (PAS)	USACE	States can write letters requesting technical assistance from USACE to enhance any water-related planning efforts currently underway by States, Tribes, Territories, and other governmental organizations. Services include developing, collecting, and conducting hydrologic, economic, or environmental data and risk analysis to support an entity's hazard mitigation plan, ecosystem restoration plan, water resources management plan, long-tern recovery plan, climate action plan, etc. Technical assistance activities through PAS are cost shared with the study partner at a rate of 50 percent. Non-federal partners may also voluntarily contribute funds in excess of the cost shared amount if they wish to increase the scope of work.
Denali Commission Grant Opportunities	Denali Commission	Partners with Tribal, Federal, state, and local governments and collaborates with all Alaskans to improve the effectiveness and efficiency of government services, to develop a well-trained labor force employed in a diversified and sustainable economy, and to build and ensure the operation and maintenance of Alaska's basic infrastructure.
Safe Ice Roads for Alaska (SIRA)	Alaska DOT&PF	SIRA is a competitive reimbursement-based grant opportunity funded by the FHWA and administered by the Alaska DOT&PF using STBG funding. SIRA provides funding for developing and maintaining seasonal roads and ice roads that are established on the riverine system.
Port and Infrastructure Development Program (PIDP)	FHWA	Focuses on improvements for coastal and riverine facilities under the following: Loading and unloading of goods at a port Movement of goods into, out of, around, or within a port Resilience (e.g., addressing sea-level rise, flooding, extreme weather events, natural disasters) Environmental and emissions mitigation measures (includes projects intended to reduce or eliminate port-related pollutants or greenhouse gas emissions).

Other funding opportunities are dependent on initiatives and resources within communities. An example of a funding opportunity that is dependent on a community and their conditions would be funding awarded from the Federal Emergency Management Agency (FEMA) under the Building Resilient Infrastructure and Communities (BRIC) Grant or their Flood Mitigation Assistance (FMA) Grant programs. For Tribal communities, Tribal Transportation Program (TTP), Tribal Transportation Program Safety Funds (TTPSF), or Tribal High Priority Projects (HHP) funds may be available. To verify eligibility for these programs, communities are advised to work with their Bureau of Indian Affairs (BIA) representative.

Recent changes to the Surface Transportation Block Grant (STBG) program allows for flexible funding. This includes up to five percent annually for rural barge landing, docks, and waterfront infrastructure in a rural community or Alaska Native village that is off the road system. This adjustment to STBG flex funding allows for a greater focus on the riverine system but does not account for the high needs of the region.

With the shift in grant programs made available for riverine facilities and communities, there is the opportunity for growth, development, and rehabilitation of the riverine system in the IATP area if pursued and used in a manner to maximize their potential. A major roadblock remains without technical assistance for grant writing for small communities, however. Like many of the communities on the riverine system, and the rest of the IATP area, these grant opportunities and any new grant opportunities that would arise will often remain out of reach without technical support when pursing competitive grants. The burden to find, pursue, and follow through on grant applications is significant for small communities to manage. Often these transportation departments are comprised of one or two individuals completing all the work.

4.2 Bridging the Gaps

4.2.1 Protect and Provide Facilities

Erosion control methods and mitigation such as dredging should be implemented for barge landings within the IATP area to ensure communities can continue to receive shipments via river barging.

Methods to provide for safe passage within the riverine system should be implemented.

These methods may include:

- Clearing debris causing jams
- Signage for when barges will be visiting the area so that personal vessels can be removed by their owners instead of needing to be removed by service providers while risking liability
- Signage to assist in wayfinding.

Work with local entities to design barge landing facilities that not only can be located in the best locations for service with the equipment needed but also have features that assist in erosion and sediment control and mitigation. This could be accomplished by creating barge landing facilities that are connected to and part of the functionality of a concrete retaining wall used for erosion mitigation and control.

4.2.2 Prioritize Service

Barge facilities and corresponding barge service should be prioritized to off-road communities with access to the major riverine systems in order to help alleviate cargo shipping costs. While service in communities is dependent on the current market and demand, there is the ability to prioritize development of and funding for barge facilities while facilitating communication between service providers, alleviating one or more factors inhibiting ample access and service.

In communities that receive limited barge service, opportunities should be explored to provide storage infrastructure allowing for an increase in goods to be delivered at a single time.

4.2.3 Program Development & Management

Develop a section within DOT&PF that houses a *Riverine Program Manager*. This section, along with the Riverine Program Manager would be responsible for developing, implementing, and managing programs that stimulate the riverine transportation system, support the increase in the demand of services due to a stimulated riverine transportation system, and provide specialized technical assistance to support communities in finding and applying for grant funds that focus on projects that enhance the riverine system. Efforts with the DOT&PF focused on the riverine system will assist in meeting the goals and opportunities set forth by the ASFP including:

1. Help ports and barge terminals pursue targeted federal funding through the U.S. Maritime Administration (MARAD)
2. Partner with ports and barge terminals to track system performance

Recent changes in the structure of the DOT&PF planning department includes the addition of a *Waterways Planner*, who will maintain responsibility for the planning of riverine and marine systems within Alaska. The inclusion of this planning position and the efforts towards creating a Waterways Plan illustrates how the state and the DOT&PF understand the importance and capabilities these systems hold for future growth and economic development. There is the ability to integrate the newly created *Waterways Planner* position with the *Riverine Program Manager*, however it is highly recommended to not have this position be a single role, but rather two positions that work collaboratively and cohesively.

4.3 Summary

The seven active riverine communities found within the Interior planning boundary continue to receive barge service during the months of mid-May to early-October when the Yukon and Tanana rivers are free of ice and allow for easy passage. These communities operate with unimproved barge landings, utilize public docks, or are fully built up and considered to be cargo hub facilities. This memo has identified issues surrounding riverine erosion, competition with the aviation system, and funding for more reliable accessibility throughout the river system.

During the winter months a limited number of communities continue to receive goods at a lower cost than air cargo by constructing and maintaining ice roads. Communities that maintain ice roads often speak to the benefits these ice roads bring to their community, including reducing the costs of goods and services, maintaining positive mental health for community members, and allowing for cultural connectivity.

Although currently functioning for the communities' basic delivery needs for fuel and supplies, the system's users do not have a single point of contact or program manager to support the network's overall planning and development. The recommendations within this memo point to key challenges and possible solutions throughout the riverine system; however, this unique Alaskan way of transport needs additional data, robust stakeholder engagement, and a programmatic approach to addressing the entirety of needs not yet known throughout the Interior's vital riverine system.

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Section Five

Winter Access: Conditions, Issues, and Trends

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Study Area 1

2.0 PUBLIC ENGAGEMENT 3

3.0 REVIEW OF EXISTING AND RELATED MATERIALS 4
3.1 DOT&PF Statewide Plans 4
3.1.1 Alaska Moves 2050: Statewide Long-Range Transportation Plan (2022, Public Draft) 4
3.1.2 Let's Keep Moving 2036: Policy Plan – Statewide Long-Range Transportation Plan (2016) 4
3.1.3 Alaska Federal Lands Collaborative Long-Range Transportation Plan (2020-2040) 4
3.1.4 Interior Alaska Transportation Plan (2010) 4
3.2 Community Plans 7
3.3 Additional Information 7

4.0 EXISTING CONDITIONS 8

5.0 GAPS AND TRENDS 10
5.1 Significant Use 10
5.2 Legal Framework and Opportunities for Expansion of Trail System 10
5.3 Increased Road Connectivity 12
5.4 Development Impacts to Trails 12
5.5 Climate Change 12

6.0 KEY ISSUES 13
6.1 Funding Limitations 13
6.2 Maintenance Issues 13
6.3 Safety Issues 13
6.3.1 Trail Shelters 13
6.3.2 Trail Markers 15
6.3.3 Frozen River Travel Safety Measures 15
6.3.4 Search and Rescue 15
6.3.5 Trail Safety Data Collection 15
6.3.6 Safety Guidelines for Travelers 15
6.3.7 Distribution of Trail Conditions Information 15
6.4 Limited Documented Information about Winter Trails 15

7.0 AN OPPORTUNITY FOR IMPROVEMENT 17

APPENDICES

Appendix 1: Interview Summary with TCC Transportation Coordinator

FIGURES

Figure 1. Interior Alaska Transportation Plan (IATP) Area 2
Figure 2. Trail Segments Identified During the 2010 IATP Public Outreach Process 6
Figure 3. Communities Served by Ice Roads in the Interior 9
Figure 4. RS2477 and 17(B) Easements 11
Figure 5. Proposed Trail Shelters 14

ACRONYMS

ANCSA	Alaska Native Claims Settlement Act
ATV	All-Terrain Vehicle
DOT&PF	Department of Transportation and Public Facilities
GPS	Global Positioning System
IATP	Interior Alaska Transportation Plan
LRTP	Long-Range Transportation Plan
TCC	Tanana Chiefs Conference
TTP	Tribal Transportation Program

1.0 INTRODUCTION

1.1 Purpose

Many remote Alaskan communities rely on winter trails and ice roads to transport goods and people between villages and to the road system. Without trails and ice roads, these communities would be isolated for the entire winter season, as they do not have road access and aviation is unreliable if it is available at all. The Winter Access Memorandum describes insights and key findings from research and analysis of the Interior region winter trails system. This analysis included review of publicly available sources, such as Interior region community plans, as well as information provided through public engagement at community meetings and interviews with Department of Transportation and Public Facilities (DOT&PF) and Tanana Chiefs Conference (TCC) staff. To ensure the importance of the winter transportation network and the challenges of remote winter travel are not diluted, this memorandum does not include recreational trails.

1.2 Study Area

The Interior Alaska Transportation Plan (IATP) region covers approximately 132,220 square miles. However, only a small fraction of this vast area is accessible by the limited road system. There are numerous rural communities and extensive subsistence resources that can only be accessed by alternative transportation methods. Throughout Interior Alaska's history, the region's extensive river system has been used as transportation arterial routes. River boats are still a primary mechanism for access and transport of freight to communities not connected to the road system. Trails also provide an important link in this transportation system. During the winter when rivers freeze and boat traffic ceases, the freezing of wetlands and water bodies create landscapes that are conducive to overland travel. Trails, and in some cases ice roads, become particularly important for maintaining connectivity and enabling transportation to resources.

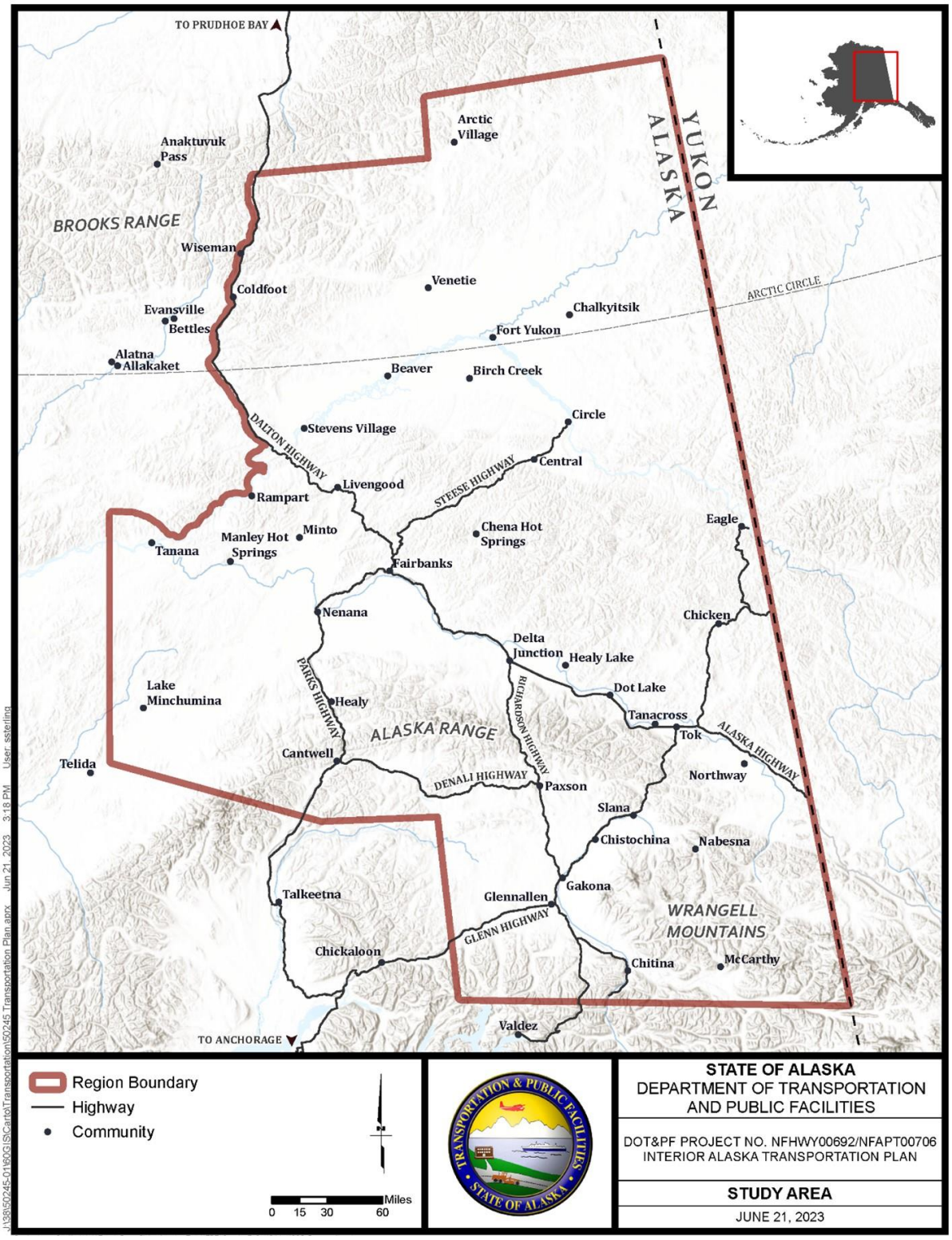

Figure 1. Interior Alaska Transportation Plan (IATP) Area

2.0 PUBLIC ENGAGEMENT

The IATP travelling road show, held in June of 2023, included community meetings in Healy, Fairbanks, Glenallen, Delta Junction, Tok, and Minto. Nonmotorized travel in the Interior was discussed by community members during these meetings, but most did not focus on or even mention winter trails. Community members in Healy raised concerns that the Historic Stampede Trail has been cut off by the recent development of infrastructure on the trail's route. Community members in Minto noted that they frequently use snow machine travel on rivers to access subsistence resources, and that it is possible to travel by winter trail to Fairbanks.

The project team also met with the Tanana Chiefs Conference Transportation Coordinator to discuss winter travel in the Interior. A key theme discussed during the meeting was safety along existing winter routes. Many communities have identified a need for maintenance of existing trail amenities including shelters, signage, markers, and other key features. A request was made for funding and support to establish new emergency shelters along winter trails for many of the communities represented by the TCC. A summary of the meeting with TCC is included in Appendix 1.

3.0 REVIEW OF EXISTING AND RELATED MATERIALS

3.1 DOT&PF Statewide Plans

The following statewide and regional plans provide broad information about the State's overall transportation goals and previous winter trail research efforts.

3.1.1 Alaska Moves 2050: Statewide Long-Range Transportation Plan (2022, Public Draft)

Alaska Moves 2050 is the draft Long-Range Transportation Plan (LRTP) for the state, which establishes transportation policies, goals, and implementation actions for DOT&PF through 2050. The plan recognizes there are many remote areas that are off the road system, which requires a well-integrated multimodal transportation network. The DOT&PF prioritizes access to remote and rural communities and improving the safety of the transportation system. The establishment and maintenance of winter trails is generally the responsibility of rural communities, rather than DOT&PF, but a goal of the LRTP is to increase coordination and collaboration with other levels of government. Collaboration between DOT&PF and rural communities will help align statewide and local transportation planning efforts and will reinforce the importance of the winter trail system as transportation infrastructure.

3.1.2 Let's Keep Moving 2036: Policy Plan – Statewide Long-Range Transportation Plan (2016)

Let's Keep Moving 2036 is the current LRTP, which outlines goals, policies and actions to guide DOT&PF in development and continuation of transportation programs and funding through the year 2036. The 2036 Plan established a vision to provide a transportation system which supports a robust and growing economy while meeting the mobility needs of residents. The plan acknowledged the importance of winter trails and access as a key component affecting communities in rural Alaska and established policies and actions intended to address livability, community, quality of life and environmental considerations when planning for, developing, and maintaining the transportation system. It also put an emphasis on collaboration with local jurisdictions and communities to make sure investments in the transportation system are consistent with the goals and values of the residents they serve.

3.1.3 Alaska Federal Lands Collaborative Long-Range Transportation Plan (2020-2040)

This plan provides existing conditions information and a planning framework for transportation systems and infrastructure on federal lands. Trails managed and built across federal lands are an important link in Alaska's transportation system. This plan highlights the importance of safety measures on winter trails. A case study is presented, where the National Parks Service partnered with the Native Village of Shishmaref to provide trail marking and a new safety shelter along trails that connect to neighboring communities. The case study is outside the IATP boundary, but the criticality of trails and safety infrastructure such as trail markers and emergency shelters align with the information in the community plans discussed below.

3.1.4 Interior Alaska Transportation Plan (2010)

The 2010 IATP included a section on trails, which recognized the significant role the trail system plays in recreation, support for traditional subsistence activities, and its contribution to the transportation system. Trails in the plan area are described as having a width typically spanning from four to ten feet, and their conditions are contingent on usage patterns and season. Public outreach for the 2010 plan yielded

information about major trail segments that were in use at that time. The map that was included in that plan is shown in Figure 1 for reference, but the trail locations have not been verified since 2008. Winter trail routes can vary year to year and the map does not distinguish between seasonal trails.

Figure 9 Trail, Rail and River Networks

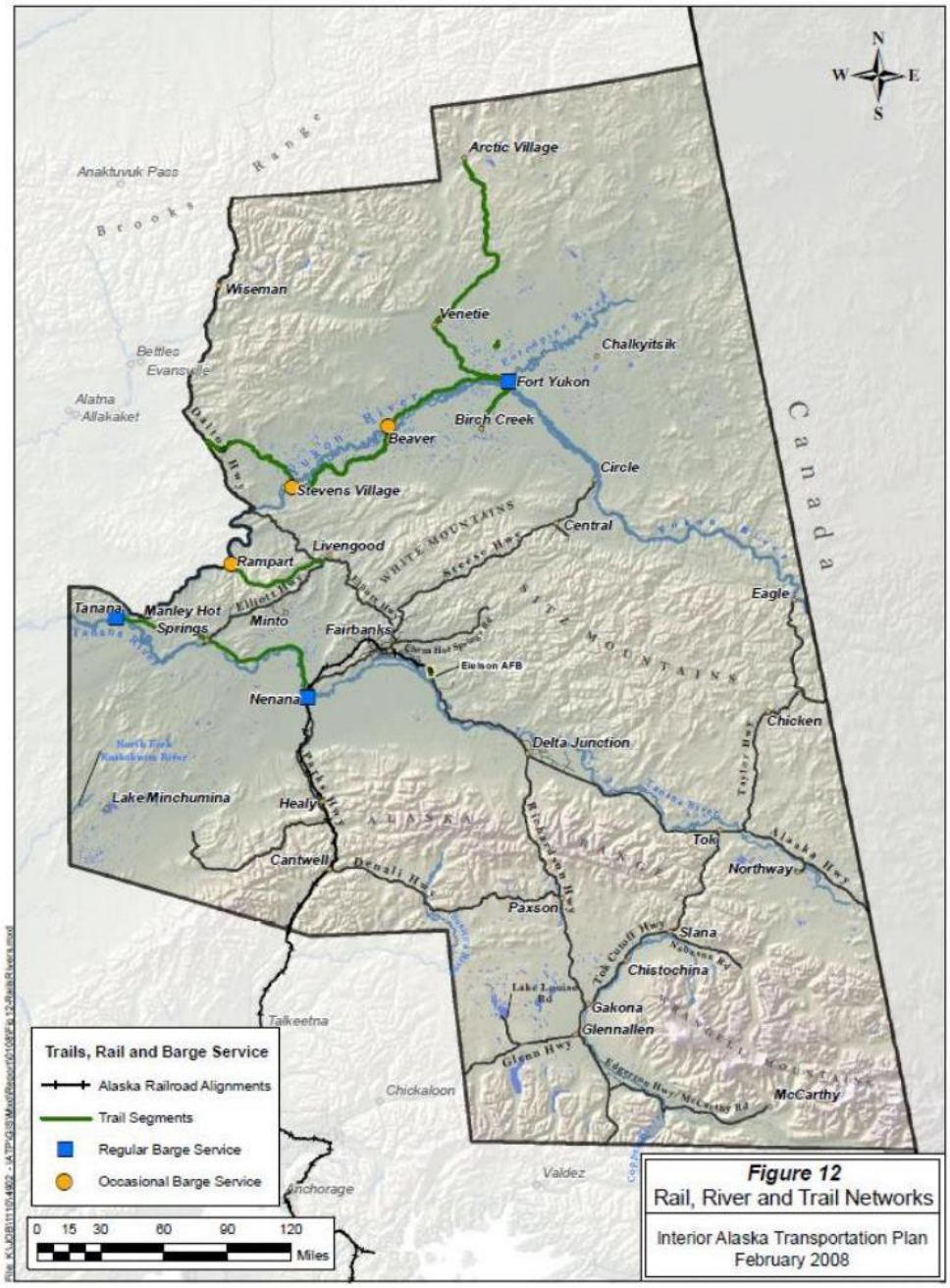

Figure 2. Trail Segments Identified During the 2010 IATP Public Outreach Process

3.2 Community Plans

Publicly available community plans were reviewed to collect information about winter trail use, conditions, and trends. Community plans generally focused on providing strategies and goals related to infrastructure, transportation, subsistence, cultural well-being, and economy. Some community plans included descriptions of existing trails or strategies that are specific to winter trail and ice road travel, emphasizing the importance of winter trail travel for rural communities.

TCC is occasionally contracted by villages to support the development of community and transportation plans.

The following plans were reviewed:

- Chalkyitsik Community Plan (2021)
- Birch Creek Community Plan (2020)
- Tanacross Community Plan (2020)
- Nenana Community Development Plan (2019)
- Healy Lake Community Plan (2018)
- Minto Community Plan (2017)
- Rampart Community Plan (2017)
- Regional Transportation Strategy for Rural Villages Located in Alaska's Interior (2020)

3.3 Additional Information

The University of Alaska – Fairbanks, with support from the Federal Highway Administration (FHWA), developed a manual titled *Design and Operation of Ice Roads* to describe the best practices for designing, constructing, maintaining, and operating ice roads. The manual outlines the steps to create a safe ice road throughout the Pre-Season, Pre-Construction, Ice Road Operation, and End of Season phases. Signage, vehicle control, and use of uncrewed aircraft systems to monitor road conditions are also covered.

4.0 EXISTING CONDITIONS

Winter trails, defined as unimproved, cross-country routes across land, rivers, and lakes, are an important link in Interior Alaska's transportation system. They provide connections from rural villages to subsistence resources, neighboring communities, and the road system. Air travel is often cost prohibitive for residents in rural communities and trails are important for facilitating inter-village travel. Snow machines, and occasionally sled dogs, are the primary modes of transportation within and around villages. Overland trails connect neighboring communities and, when adequately frozen, the Yukon River and its tributaries commonly become winter travel routes.

Ice roads, which are constructed over frozen landscapes in the winter, are also important seasonal transportation connections in the Interior. Ice roads are very effective in lowering the cost of transporting freight and provide affordable options for community residents to travel from and between villages. Healy Lake maintains an ice road that connects their community to the Alaska Highway, and Rampart maintains an ice road connection to the Elliott Highway. Tanana has an ice road that connects to the Tanana Road located along the south bank of the Yukon River which provides a way to transport freight directly to Tanana during the spring once the Tanana Road has been cleared of snow. Fort Yukon annually builds an ice road to their wood yard (TCC Regional Transportation Strategy for Rural Villages Located in Alaska's Interior).

The remoteness and often inclement weather that comes with traveling on winter trails and ice roads in Interior Alaska raises numerous safety concerns. Construction, maintenance, and the implementation of safety measures are generally the responsibility of local and tribal governments. However, DOT&PF assists communities by administering federally sourced funding through several programs.

One program is the Community Winter Trails Program, a collaboration between DOT&PF and rural communities to improve the safety of trail travel by providing trail markings on commonly used routes. The DOT&PF administers Federal Highway Administration funding to local governments and non-profits, who take on the responsibility of installing and maintaining trail markers. Mapping of marked trails and distribution of trail maps and GPS data is also provided. However, the program currently has no mapped trails within the Interior plan region. This program is specifically focused on providing temporary trail markings that are installed seasonally and it does not cover broader trail maintenance or safety measures.

The DOT&PF recently created the Safe Ice Roads for Alaska Program. This program connects local and tribal governments to Federal Surface Transportation Block Grant funding for the development and maintenance of ice roads. The allocation of funding is competitive, and the program emphasizes enhancing the safety of ice roads in its selection criteria. During the 2022-23 winter season, 13 communities were awarded funding, four of which are located within the IATP boundary. Healy Lake Village, the Native Village of Fort Yukon, Tanana Native Council, and Whitestone Community Association each received funding to reimburse maintenance costs for ice roads connecting their communities to the road system or other key regions. An overview of communities serviced by ice roads within the Interior is shown in Figure 2.

In addition to DOT&PF managed funding programs, the FHWA, through its Western Federal Lands Highway Office and Bureau of Indian Affairs Alaska Office, provides funding, technical assistance, and oversight through the Tribal Transportation Program (TTP) via direct funding agreements with federally recognized Tribes. Under the TTP, the Tribal Transportation Program Safety Fund (TTPSF) funds projects focused on transportation safety issues. TTPSF grants were awarded to Arctic Village and Venetie for Winter Trail Safety Shelters Projects in 2020, and this program has provided funds for numerous ice road and winter trail projects for Alaskan Communities outside of the Interior region.

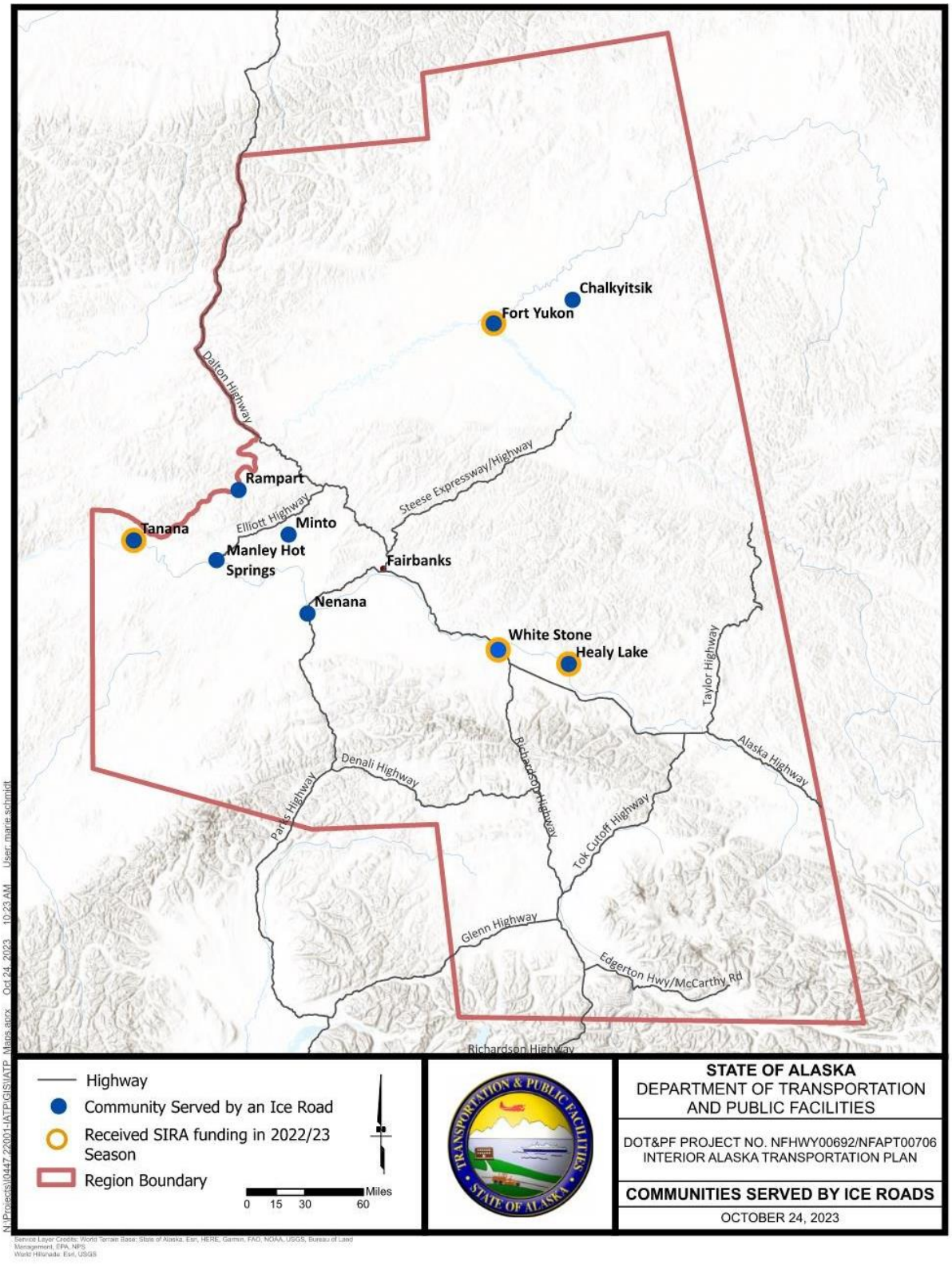

Figure 3. Communities Served by Ice Roads in the Interior

5.0 GAPS AND TRENDS

Currently, there is no comprehensive inventory of winter trails in the Interior region. While an inventory was conducted in 2010 during the previous update to the IATP, there have been no subsequent updates.

Additionally, the Community Winter Trails Program does not have any mapped winter trail routes in the Interior region. This lack of up-to-date information makes it challenging to forecast transportation trends associated with trail use. Rural parts of Alaska are experiencing decreasing populations, which could potentially influence trail usage. However, detailed forecasts are currently not feasible. More general trends that are impacting trail use across the regions are described in this section.

5.1 Significant Use

Traveling between villages for social events, to visit family, and to seek medical care is becoming increasingly common (TCC Regional Transportation Strategy for Rural Villages Located in Alaska's Interior). The use of trails, especially during the winter, provides an affordable transportation option between communities and can be an alternative method of travel when weather conditions ground aircraft.

5.2 Legal Framework and Opportunities for Expansion of Trail System

RS2477 easements offer opportunities for expanding the trail system. RS2477 easements are historic transportation routes that were established for various purposes, including mining, settlement, and resource development. The recognition of RS2477 easements can provide a legal basis for asserting rights-of-way across federal lands. In some cases, these assertions are contentious and may lead to legal disputes with landowners and other stakeholders.

17(b) easements are important in granting the right to use and maintain transportation routes, including roads and trails, across lands conveyed to native corporations and villages under the Alaska Native Claims Settlement Act (ANCSA). These easements are also important for establishing public trails that connect communities and facilitate resource access.

Mapped easements running within and near the Interior are shown in Figure 3.

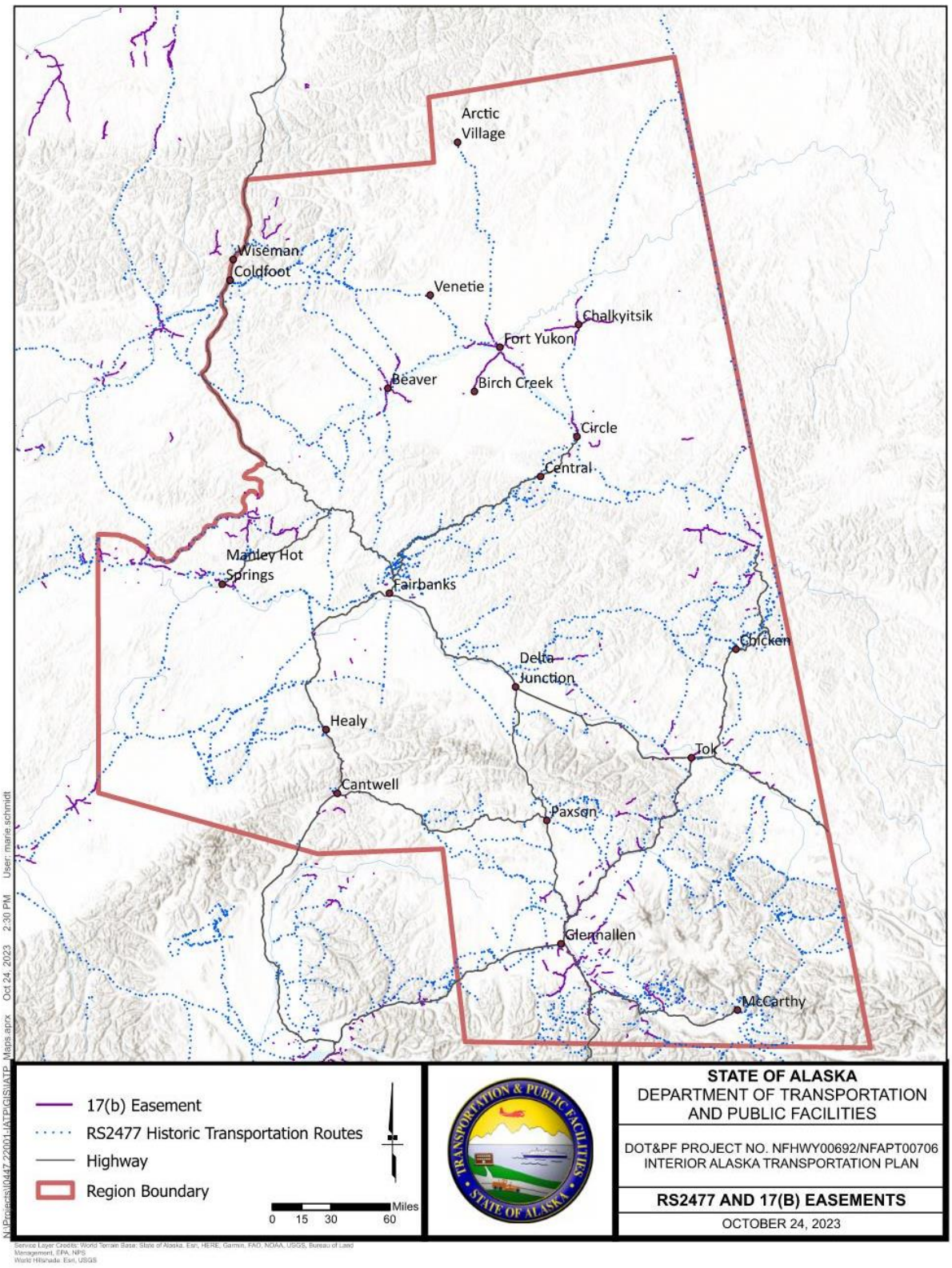

Figure 4. RS2477 and 17(B) Easements

5.3 Increased Road Connectivity

New road construction can greatly improve connectivity and access to supplies for rural communities. The Tanana Road, constructed in 2016, provides a road connection from the Elliott Highway to within six (6) miles of Tanana. Rampart also has plans to complete a road connection to the Elliott Highway that follows the current winter trail (Rampart Community Plan). While road connections may increasingly provide alternative transportation options, winter trails will still play a significant role in connecting communities, accessing resources, and supporting traditional activities like hunting, trapping, and recreational travel. In some cases, new roads could improve access to trail or ice road routes or allow access for new routes.

5.4 Development Impacts to Trails

New development in historically rural and undeveloped areas can impact existing trail routes. One example is Healy, where the construction of new housing developments has occurred across the Historic Stampede Trail, causing travelers along the trail to detour around the new neighborhoods.

5.5 Climate Change

Climate change is causing warmer and more unpredictable winter temperatures, resulting in increasingly unsafe conditions for traveling on frozen water bodies. The length of the winter season is also becoming less predictable, sometimes resulting in shorter windows for winter river travel and longer, warmer shoulder seasons that lack viable transportation options.

6.0 KEY ISSUES

6.1 Funding Limitations

There are several federal transportation funding programs that generally apply to winter trails and ice road projects. Potential funding sources include the Denali Commission, FHWA Surface Transportation Block Grants, as well as The Federal Lands Access Program and TTP, both under the Western Federal Lands Highway Office. Funding programs are often limited in the types of projects that are eligible, and the competitive nature of available programs often restricts the number of projects that can secure financial assistance. A lack of sufficient funding often prevents trail and ice road construction, maintenance, and safety enhancement. The DOT&PF has taken steps to address funding challenges by providing programs to fund trail marking and ice road construction and maintenance projects. However, funding for other needs, including trail maintenance, equipment, markers, and the establishment of safety shelters, currently relies on the initiative and resources of communities.

6.2 Maintenance Issues

Storms can make trails unpassable and create unsafe travel conditions. Trail maintenance is the responsibility of local communities. Better trail maintenance, including the maintenance of winter access trails, has been identified as a transportation need within the Interior region (TCC Regional Transportation Strategy for Rural Villages Located in Alaska's Interior).

6.3 Safety Issues

Traveling on winter trails and ice roads involves navigating very remote areas, often in challenging weather conditions. Programs and resources dedicated to enhancing safety are crucial. The following list highlights key resources and measures that are essential for improving trail and ice road travel safety, along with information about how these needs are being addressed:

6.3.1 Trail Shelters

Unexpected events, such as storms or snow machine breakdowns while traveling on remote trails, can quickly have dire consequences. Trail shelters, strategically located along the trail network, are important in mitigating these risks. The TCC Regional Transportation Strategy includes a map of existing trail shelters, of which there is only one and it is no longer usable. The TCC Regional Transportation Strategy recognizes trail shelters as crucial for improving trail travel safety and has identified key locations for the construction of proposed shelters to fulfill this safety need. The construction of trail shelters is not an eligible use of existing DOT&PF funding programs, although additional federal funding sources such as the TTP can be used.

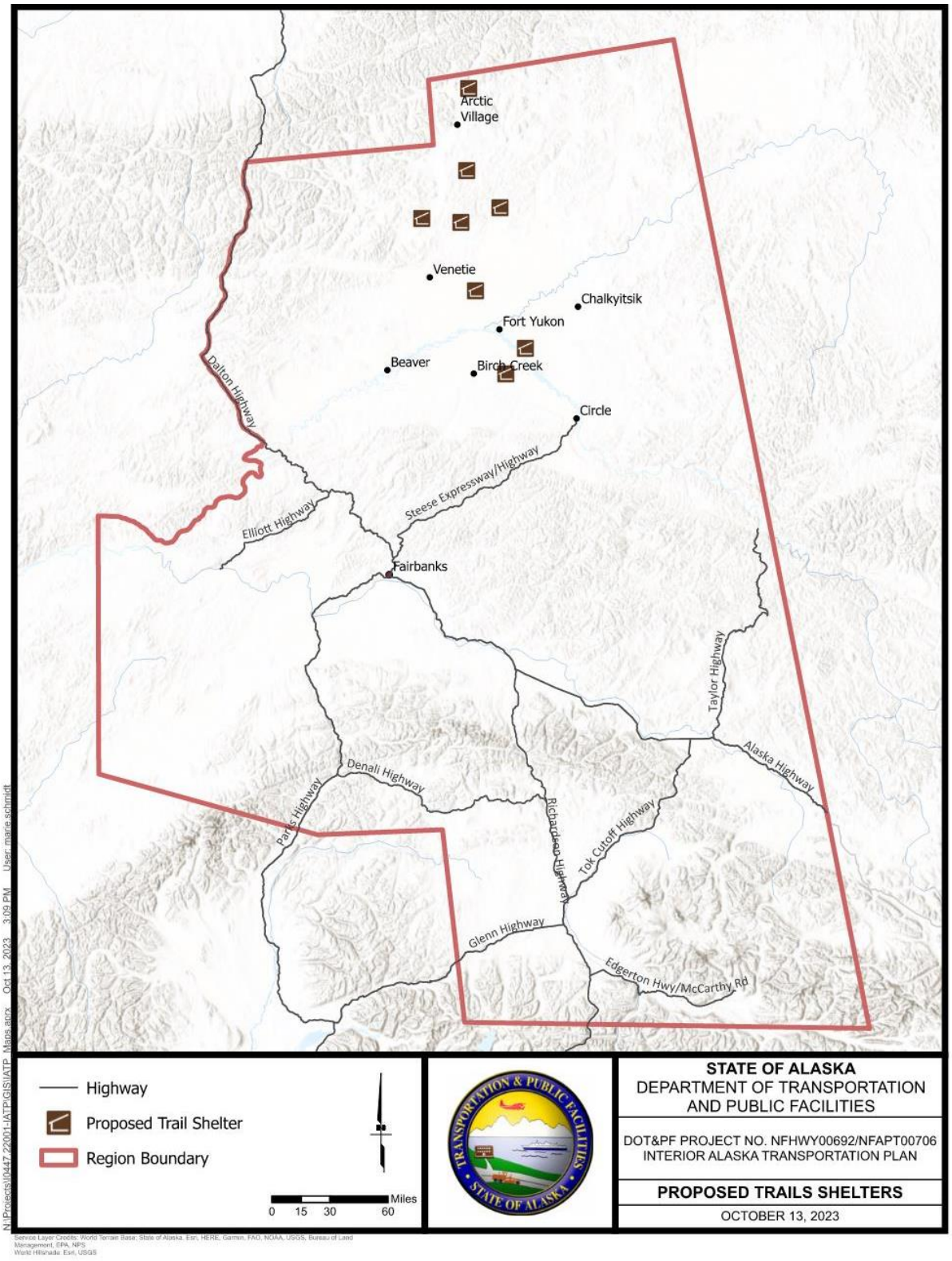

Figure 5. Proposed Trail Shelters

6.3.2 Trail Markers

The marking of commonly traveled routes is an important safety measure for trail and ice road travel. The Community Winter Trails Program provides financial assistance for trail marking, while the Safe Ice Roads for Alaska Program funds marking of ice roads. As of 2023, one community in the Interior region, Arctic Village, has applied for funding through the Community Winter Trails Program.

6.3.3 Frozen River Travel Safety Measures

Traveling on frozen rivers carries the risk of breaking through the ice, posing a significant danger. For example, the Arctic Village Community Plan notes that residents from Arctic Village do not use the Chandler River for winter transportation because it is unsafe due to holes in the ice. The National Weather Service reports ice thickness measurements from several water bodies in the Interior region, with measurements generally taken monthly. However, data collection is focused on areas accessible from the road system, leading to limited ice thickness data being available to the public for more rural parts of the region. Climate change is causing warmer winter temperature and a shorter cold season, which will increase the risk of falling through ice and make traveling on frozen rivers less reliable.

6.3.4 Search and Rescue

Alaska State Troopers are required to lead all search and rescue efforts within Alaska. They are aided by other agencies and volunteer groups, such as the TCC Village Public Safety Officer Program and Alaska Wilderness Search and Rescue. Trained local volunteers and first responders enable fast response times to emergency situations and are critical to search and rescue operations. Sufficient resources, such as snow machines, are also necessary.

6.3.5 Trail Safety Data Collection

There are currently no established procedures for tracking and reporting accidents that occur during winter trail travel. A data collection program to document safety-related incidents that occur on winter trail routes has the potential to identify if any particular stretches of trail are especially risky for travel, and what types of events (e.g., getting lost, weather events, breaking through ice) are most prevalent.

6.3.6 Safety Guidelines for Travelers

The 2015 Northway Transportation Safety Plan identified several concerns with traveler behavior that increase risk when using winter trails. Printed guidelines could help inform winter travelers of risks and best practices, particularly regarding use a SPOT global positioning system (GPS), proper vehicle maintenance, the need to leave travel plans with at least one person, and the risks of having too many passengers on an all-terrain vehicle (ATV) or snow machine.

6.3.7 Distribution of Trail Conditions Information

Trail and ice road conditions can change quickly. Having a mechanism to share up to date condition reports via online platforms and social media is crucial for trail and ice road travel safety. The Interior Region does not currently have an official program in place to provide trail safety.

6.4 Limited Documented Information about Winter Trails

There is a general lack of documented information about winter trails. A comprehensive inventory of the trail system and an inventory of functional trail safety shelters are needed. The DOT&PF Community

Winter Trails Program is working towards creating a public map of winter trails, however most trails in the Interior region are not yet documented.

Additional community outreach targeted towards winter trail and ice road needs should inform future strategies to improve winter off-road travel. For instance, consulting with as many local communities as possible will be important to understand the unique and community-specific needs across the region. Important stakeholders to include for future winter trail and ice road planning efforts include:

- Local community members
- State agencies that distribute winter trail-specific grants, such as Alaska Department of Natural Resources
- Tribal transportation planners
- State and federal agencies that own land within the trail network.

7.0 AN OPPORTUNITY FOR IMPROVEMENT

Numerous safety issues and needs have been identified by communities that use winter trails and ice roads. Although DOT&PF offers some funding and assistance programs, namely the Community Winter Trails and Safe Ice Roads for Alaska programs, support for remote winter travel could be improved by creating a comprehensive program to fund more of the identified safety needs. Having a single overarching program with multiple funding areas would reduce confusion about where to find funding and increase efficiency in communications and logistics, as well as allow DOT&PF to support critical infrastructure without needing to build or own remote assets. DOT&PF should consult with impacted communities to understand the usefulness of and barriers to accessing the existing programs to ensure future collaborative efforts to improve winter safety are effective.

APPENDIX 1: INTERVIEW SUMMARY WITH TCC TRANSPORTATION COORDINATOR

Tanana Chiefs Conference Winter Access Meeting

August 3, 2023, 9:00-10:00 a.m.

NAME	ORGANIZATION
Marina Evans, Transportation Coordinator	Tanana Chiefs Conference
Jessica Smith, Project Manager	DOWL
Joy Huntington, Public Involvement	Uqaqti Consulting
Jessica Herceg	DOWL
Morgan McCammon	DOWL
Megan Flory	RESPEC
Marie Schmidt	RESPEC

Discussion:

Jessica Smith, DOWL Project Manager, and Joy Huntington, Uqaqti Consulting, opened the meeting with an overview of the Interior Alaska Transportation Plan (IATP), project team needs, and introduced the project team. Marina Evans, Tanana Chiefs Conference (TCC) Transportation Coordinator, shared information about the structure of transportation planning at TCC. Marina noted that villages are typically connected to each other by trail systems, often using frozen rivers as winter trails.

Megan Flory and Marie Schmidt, Planners with RESPEC, led the discussion on information needs for the IATP, specifically around winter trails and access. Marie shared that the primary sources of information collected to date are the publicly available tribal transportation plans. Additionally, there is a data gap between the DOT&PF trails inventory and the actual trails between villages.

Marie asked for information on how the Department of Transportation and Public Facilities (DOT&PF) can support the tribal communities and commented that this is a historic issue. In the past, DOT&PF has not provided support for transportation facilities that are not owned by the State of Alaska. She asked for clarification on how DOT&PF could assist tribal organizations. Jessica Smith shared that DOT&PF has recently

made concerted policy changes regarding support for communities to improve transportation facilities, regardless of whether the facilities are tribal, state, local, or other., like the approach taken with aviation facilities.

Marina shared that supporting tribal communities to secure funding for facilities would be helpful support from DOT&PF. Most funding secured is used for maintenance and is insufficient to construct new, needed infrastructure. Additionally, most winter trail maintenance is primarily managed by community volunteers to maintain and mark winter trails.

Marie asked if emergency shelters in communities were potentially a safety gap. Emergency shelters are usually listed in safety plans, which are then used to secure grant funding for construction. This could be an area of support needed from DOT&PF.

Marina shared a list of TCC communities she works with, has transportation knowledge of, and community needs:

- Alatna (outside of IATP project area)
  - Marina is working on the transportation plan.
  - Has summer and winter trails.
  - Has an ice road.
  - Has a need for an access road to a culturally significant area.
  - Has a need for a bridge across the river to Allakaket.
- Allakaket (outside of IATP project area)
- Arctic Village
  - May have an emergency shelter or funding to construct one.
- Central
  - Has a state-owned bridge with recent approval for an upgrade.
- Chalkyitsik
  - Has a need for emergency shelters.
  - Has a winter trail on the river to Circle.
  - Has an overland trail to Fort Yukon.
- Circle
  - Has a trail to Fort Yukon.
  - Has a winter trail on the river to Chalkyitsik.
  - The safety plan has information on winter trails.
  - Has a need for two emergency shelters.
  - Has a state-owned one-lane bridge that the community would like widened for safety. This was rejected by DOT&PF in favor of upgrading a bridge in Central.

    - The Eagle Summit emergency shelter may be damaged and need to be replaced.
- Dot Lake
- Eagle
- Fort Yukon
    - Has an overland trail to Chalkyitsik.
- Grayling (outside of IATP project area)
    - Marina is working on the transportation plan.
- Healy Lake
    - Marina is working on the transportation plan.
    - Has summer and winter trails.
    - Limited access during spring and fall.
- McGrath (outside of IATP project area)
- Rampart
    - Has winter trails.
    - Has a need for two emergency shelters.
    - Has a partially constructed state-owned road to the community that they would like to be connected to the road system, which has previously been rejected. This partially constructed road is passable during certain months but does not have completed stream crossings.
- Shageluk (outside of IATP project area)
- Tanana
    - Has winter trails.
    - Has an ice road.
    - Has a need for emergency shelters.
- Venetie
    - May have an emergency shelter or funding to construct.

Marina mentioned that while tribal communities may experience similar transportation needs, many will need direct communications to determine specific community needs and challenges.

Marina requested the IATP project team share project information and data needs request. TCC will reach out to member communities with this information and request. She also agreed to review the process for sharing tribal transportation and safety plans with the IATP project team and facilitating conversations with TCC tribal communities.

Joy and Jessica Smith thanked Marina and ended the meeting.

Action Items:

- Create a meeting summary.
- IATP project team to send fact sheet and needs requests to Marina and TCC for outreach to member communities.
- Marina to check process for sharing tribal transportation and safety plans with IATP project team.
- Marina to send Rampart request letter and response from DOT&PF.
- IATP project team will coordinate outreach for TCC communities with Marina.

Section Six

Transportation Resiliency: Identifying and Prioritizing Risks to Interior Alaska's Transportation Infrastructure

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Purpose of the Memorandum 1
1.2 Planning Area Defined 1
1.3 Infrastructure Risk & Community Resiliency 3
1.4 Current Regional Climate 3
1.5 Changing Climate 4
1.6 Common Hazards in the Interior Planning Area 5
1.7 Hazard Mitigation Strategies 8

2.0 CURRENT RESILIENCY PLANNING EFFORTS 9

2.1 Infrastructure Investment and Jobs Act 9
2.2 Alaska Long Range Transportation Planning 9
2.3 Hazard Mitigation Planning 10

3.0 RISK TO INFRASTRUCTURE RESILIENCE ASSESSMENT 15

3.1 FEMA Hazards Risk Assessment 15
3.2 FEMA Risk & Resiliency Assessment by Community 16
3.3 Permafrost Risk Assessment by Community 17
3.4 Resiliency Working Group Risk Assessment 17
3.5 Piecing It Together 20
3.6 Yukon Flats and Middle Yukon/Fairbanks Subregion 21
3.7 Upper Tanana Subregion 26
3.8 Denali Borough Subregion 28
3.9 Copper River Census Area 29

4.0 RECOMMENDATIONS 32

4.1 Non-Infrastructure Community-Based Resiliency Efforts 32
4.2 Establish Infrastructure Risk Mitigation Strategies 32
4.3 Develop Evaluation Criteria for a Resiliency Action Program 33

5.0 REFERENCES 34

APPENDIX 1: RESILIENCY WORKING GROUP MEETING SUMMARY 35

APPENDIX 2: FEMA NATIONAL RISK INDEX 46

APPENDIX 3: SNAP PERMAFROST RISK ASSESSMENT TABLE 56

FIGURES

Figure 1. Interior Alaska Transportation Plan Area 2
Figure 2. Interior Planning Area Observed Summer Temperatures 1925 to 2020 (ACRA, NOAA, CISESS 2022) 4
Figure 3. Interior Planning Area Observed Winter Temperatures 1925 to 2020 (ACRA, NOAA, CISESS 2022) 4
Figure 4. 2022 Seismicity Year in Review, University of Alaska Fairbanks Earthquake Center 6
Figure 5. Seasonal Fire Phases and Environmental Drivers, International Arctic Research Center 2020 7
Figure 6. FEMA NRI Definitions for Risk Index Equation and Community Risk Factors 15
Figure 7. Expected Annual Loss Factors 16
Figure 8. Interior Alaska Transportation Plan Working Group Sub-Region Map 18

TABLES

Table 1. Ground Failure Type and Cause 7
Table 2. Hazard Mitigation Plans, Communities Included, and Last Updates within the IATP Area 11
Table 3. Federal and State Resilience Based Programs 13
Table 4. National and State Averages for FEMA Risk Index, Social Vulnerability, and Community Resilience 17
Table 5. Community Working Group Identified High Risk and/or High Priority Actions 19
Table 6. Regional FEMA Risk Index Category Ratings 20
Table 7. Yukon-Koyukuk Census Tract 1 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 21
Table 8. Yukon-Koyukuk Census Tract 2 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 23
Table 9. Fairbanks North Star Borough Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 25
Table 10. Southeast Fairbanks Census Tract 1 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 26
Table 11. Southeast Fairbanks Census Tract 4 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 27
Table 12. Denali Borough Census Area Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 28
Table 13. Copper River Census Area Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 29
Table 14. Matanuska-Susitna Borough Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies 31

ACRONYMS

AAC	Alaska Admin Code
AURA	Arctic Urban Risks and Adaptions
BRIC	Building Resilient Infrastructure and Communities
BRIC DTA	Building Resilient Infrastructure and Communities Direct Technical Assistance
CFR	Code of Federal Regulations
DCRA	Alaska Division of Community and Regional Affairs
DNR, DFFP	Alaska Department of Natural Resources, Division of Forestry and Fire Protection
DOT&PF	Alaska Department of Transportation and Public Facilities
FBX	Fairbanks
FEMA	Federal Emergency Management Agency
FNSB	Fairbanks North Star Borough
GHG	Green House Gases
HMP	Hazard Mitigation Plan
IATP	Interior Alaska Transportation Plan
IARC	International Arctic Research Center
IIJA	Infrastructure Investment and Jobs Act
LRTP	Long Range Transportation Plan
Mat-Su	Matanuska-Susitna
MAGT	Mean and Annual Ground Temperature
MP	Mile Point
NFIP	National Flood Insurance Program
NRI	National Risk Index
SE FBX	Southeast Fairbanks
SHMP	State Hazard Mitigation Plan
SNAP	Scenarios Network for Alaska + Arctic Planning
STIP	Statewide Transportation Improvement Plan
THMP	Tribal Hazard Mitigation Plan
TRAAK	Trails and Recreational Access for Alaska Program
UAF	University of Alaska Fairbanks
USDOT	United States Department of Transportation

DEFINITIONS

Aufeis A mass of sheet-like layered ice that forms from successive flows of ground or river water during freezing temperatures.

Climate A combined average of the experienced conditions in a location over an extended period. The American Geosciences Institute has identified the two most important factors in identifying climate of an area as temperature and precipitation[1]. Much like meteorologists, climatologists have been able to use climate models to create forecasts that project climate. Although, unlike weather predictions, these climate models and forecasts look multiple years into the future.

Cryosphere The parts of the Earth's surface and the subsurface where water is still in solid form. These cold areas are a pertinent part in regulating the Earth's climate and are the first places that scientists observe to identify signs of climate change.

Erosion A surface process that removes soil, rock, or dissolved material from one location and transports it to another. Erosion often occurs gradually over time but in times such as flooding, this process may occur rapidly.

Existing Permafrost Related Problems Identification of problems based on existing documents such as community hazard mitigation plans.

Fault The zone where there is a fracture in the rocks of the Earth's crust allowing space for the two pieces to slide past one another.

FEMA Mitigation Grant Funding Competitive grant funding opportunities administered by the Federal Emergency Management Agency (FEMA) providing capital for eligible mitigation measures that reduce disaster losses.

Flash Flooding Rapid flooding in low-lying areas.

Frost Susceptibility The level of permeability in ground material; loose soils such as sand have a high susceptibility and run a greater chance of developing damage to the infrastructure above.

Ground Failure The result of soil, ice, or rock losing stability and resulting in a collapse, typically with a downward movement.

Hazard An environmental phenomenon that has the potential to affect societies and the human environment.

IIJA Often referred to or known as the Bipartisan Infrastructure Law, the Infrastructure Investment and Jobs Act, or IIJA, focuses on funding investments while acknowledging and addressing the climate crisis in the United States.

Manufactured Disaster Disasters that have an element of human intent, negligence, or error involving a failure of a human-made system, as opposed to natural disasters resulting from natural hazards. These disasters are commonly seen as avoidable when the right systems are in place.

Massive Ice Occurrence The occurrence of large ice bodies near the ground's surface, this occurrence can leave infrastructure and communities vulnerable to experiencing thermokarst sinkholes and extreme thaw settlement even in areas that experience very low permafrost temperatures.

Mitigation Strategies Planning, programs, or actions to reduce, limit, or eliminate the risk generated by a hazard.

Permafrost Any ground that remains at 32° Fahrenheit (F) or 0° Celsius (C) or colder for at least two years straight. Permafrost is an integral part of the Interior Alaska region ecosystem that assists in keeping soils damp and cool, which slows decomposition and growth. This slowing of decomposition and growth creates an entrapment of greenhouse gases, preventing them from being released into the atmosphere.

Permafrost Occurrences When used by SNAP to describe the risk to communities, this refers to current permafrost and the type that is occurring. The SNAP Permafrost Risk Assessment is discussed in section 3.3.

These permafrost types include:

- Isolated – Areas with mostly unfrozen soils and patches of isolated permafrost.

- Discontinuous – Distribution of permafrost is uneven and intermittent among unfrozen soils. Contains many open and/or closed taliks.
- Continuous – Taliks exist but only under large and deep waterbodies.

Permafrost Temperature Measures and documents the mean and annual ground temperature (MAGT).

- Cold – MAGT Colder than negative five degrees Celsius (-5°C)
- Cool – MAGT Equal to negative five degrees Celsius to negative two degrees Celsius (-5°C to -2°C)
- Warm – MAGT Equal to negative two degrees Celsius to zero degrees Celsius (-2°C to 0°C)

Resilience Using the context of risk management, resilience is a system's ability to continue functionality at what is deemed an acceptable level of efficiency in the wake of disruptive or unexpected conditions. [1] For **Transportation Resilience**, this definition varies on the level of scope:

- **Individual Level**: the ability to continue to get around when faced with a broken-down vehicle, injury, disability, or loss of income.
- **Community Level**: accessibility remains for public transit opportunities and traffic is able to continue despite impacts from accidents, emergencies, seasonal construction, or disasters.
- **Design Level**: transportation systems are designed with built-in features to withstand extreme levels of demand as well as critical, unexpected problems.
- **Strategy Level**: the transportation system is created to accommodate future growth and changes that may occur to future usage or access.

Resiliency See definition for **Resilience.**

Repeat Historical Occurrences How often the hazard event has occurred and has been documented in the community.

Risk A function of the nature and magnitude of a threat/hazard, the vulnerabilities to that threat/hazard, and the consequences that could result.

Risk Level Identifies the risk level for communities based on permafrost data. Risk level is assigned based on the following values:

- 0: No Permafrost/No Risk
- 5 – 8: Low Risk Level
- 9 – 11: Medium Risk Level
- 12 – 15: High Risk Level

Riverine Erosion Water flow or movement of ice formations causing the wearing away of rock and soil along a riverbed or embankment.

Seismic Activity Data determining how often, what type, and how large earthquakes being experienced in an area are.

Slope A feature of terrain that describes the gradient.

Scenarios Network for Alaska + Arctic Planning (SNAP) Community Permafrost Data Hub A database that houses data information that serves as a single access point for communities to view permafrost vulnerabilities.

Subduction The sideways and downward movement of the edge of a plate on the earth's crust into the mantle beneath another plate.

Talik A An area of unfrozen ground surrounded by permafrost.

Thermokarst Topographic depressions created in a variety of shapes and sizes as a result of thawing ground ice, typically a type of terrain characterized by very irregular surfaces of marshy hollows and small hummocks formed when ice-rich permafrost thaws.

Threat A natural, technological, or human-caused occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, and/or property.

Transportation System The facility and elements needed for the movement of passengers and goods.

Weather The status of the atmosphere at any given time at any given location. Weather is a dynamic concept that can change quickly without warning. Meteorologists have been able to use weather models to create forecasts that can predict weather for a few days at a time with varying certainty; these models are just as dynamic.

Wildfire Large fires that spread over woodland or brush.

Wind Erosion Wind picking up and carrying soil and debris, seen in the Tanana River area of the Interior Alaska planning area.

1.0 INTRODUCTION

1.1 Purpose of the Memorandum

This memorandum identifies potential hazards and associated risks to regional infrastructure throughout the Interior Alaska Transportation Plan (IATP) area. To assess the hazards in the IATP area, an overview of the current level of community resilience to risk, with focused input from community, government, and business representatives, informs how the Alaska Department of Transportation and Public Facilities (DOT&PF)'s planning efforts are used. The regional Long Range Transportation Planning (LRTP) process integrates with hazard mitigation planning at a state and local level to drive infrastructure risk mitigation efforts and contribute to community resiliency throughout the IATP area.

This memorandum also provides potential mitigation strategies that strive to promote resiliency for both communities and infrastructure. These strategies can be implemented on a community, program, or project basis. At any scale, the highest risk hazards should be identified to prioritize projects and programs focused on increasing and promoting resilient transportation within the IATP area.

At the time of writing, a DOT&PF Statewide Resiliency Plan has been initiated and is undergoing preliminary research. It is the intention of the planning team to ensure that this resiliency and risk analysis for the IATP area will provide insight and information that will assist in the efforts to finalize a Statewide Resiliency Plan.

The identification of risk and related resiliency factors includes analysis of community profiles from the Federal Emergency Management Agency (FEMA) National Risk Index (NRI), climate and permafrost information from the Scenarios Network for Alaska + Arctic Planning (SNAP) in coordination with the University of Alaska Fairbanks (UAF) International Arctic Research Center (IARC), the State of Alaska Hazard Mitigation Plan (SHMP), select community hazard mitigation plans (HMP), tribal hazard mitigation plans (THMP), and the IATP Working Group [1] [2] [3].

The tools, data, community input, and analysis provided in this memorandum serve as ways to guide future planning discussions, policies, projects, funding, and development at a community level. The hazards and identified risks impact the potential for the IATP area's transportation infrastructure to function at the full intended design capacity before, during, and after a hazardous event. Identification of hazards and impacts create the ability to evaluate and analyze the ways in which community, program, or project-based mitigation strategies can be identified, prioritized, and implemented to better serve the needs of the planning area and promote resiliency.

1.2 Planning Area Defined

The IATP area has two international border crossings between Alaska and Canada, 1,250 miles of National Highways, 770 miles of Alaska State Highways, and 62 public-use airports. The planning area shares a border with the North Slope Borough to the north (part of the Northwest Alaska Transportation Plan area), and Canada to the east. The western boundary follows the Dalton Highway from mile point (MP) 232 to MP 57 and then follows a segment of the Yukon River to the west of the Tanana River where it turns south to Lake Minchumina, before heading east to the George Parks Highway at MP 163.2 and continuing to the Susitna River. The boundary turns south, crosses the Glenn Highway at MP 188.4, and continues south before turning east and intersecting with the Richardson Highway at MP 69 continuing east to the Canadian border. Figure 1 identifies the IATP area along with key roadways, communities, and geographic features.

Included in the boundary of this planning area is approximately 132,223 square miles of land, containing forests, mountains, rivers, and lowlands. The main rivers within the area are the Yukon, Tanana, Copper, and Koyukuk Rivers. The mountain ranges making up the area are the Brooks Range, Ogilvie Mountains, Yukon-Tanana Uplands, the Kuskokwim Mountains, the Wrangell Mountains, and the Alaska Range.

These ranges and their peaks play a key role in the formation of the IATP area transportation system. Additionally, four major faults, or locations where two tectonic plates come into contact and slide past each other, have been identified in the area. These are the Kobuk, Tintina, Castle Mountain, and Denali Faults. This varied topography influences the types and number of hazards that are found across the area.

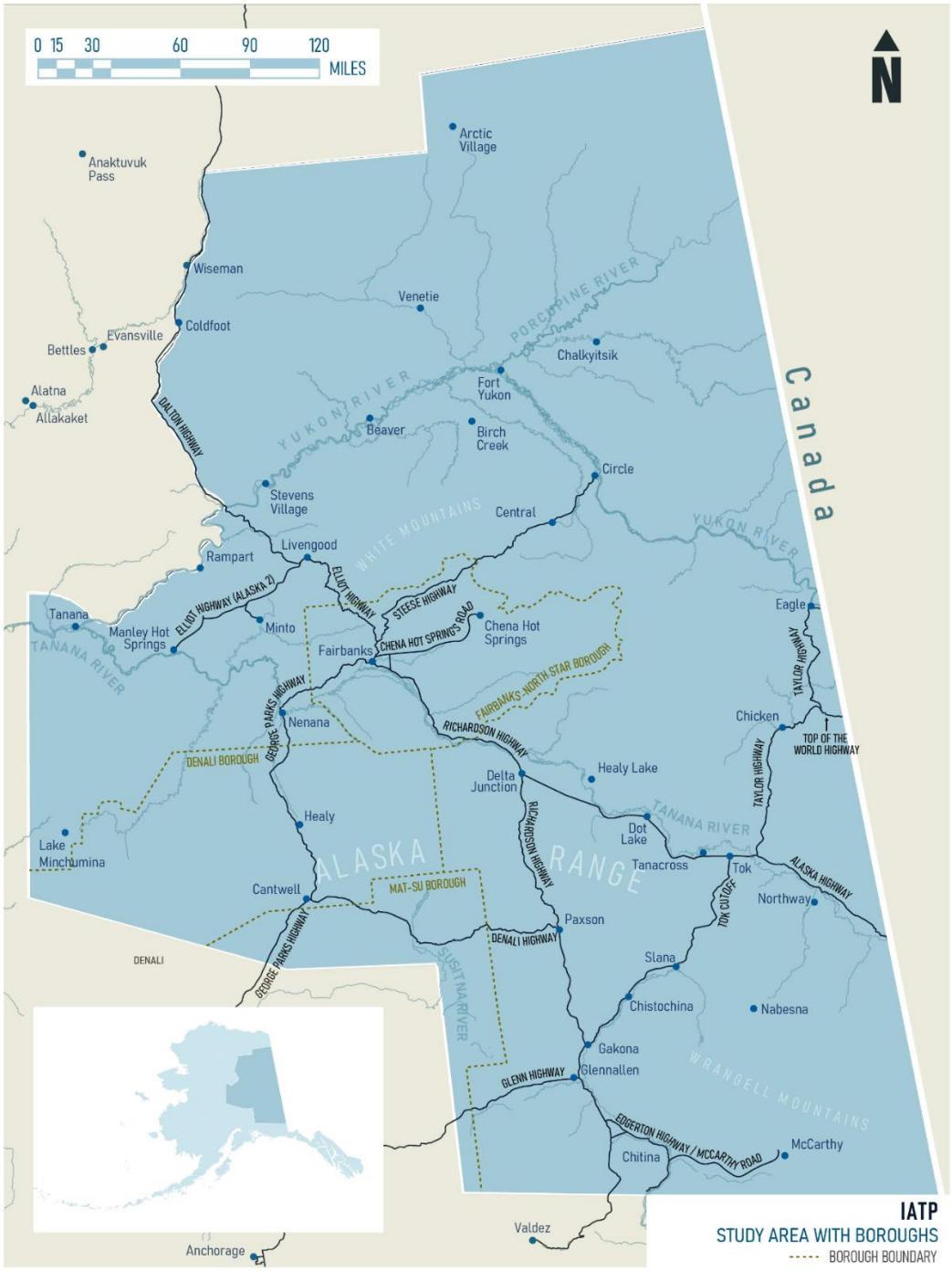

Figure 1. Interior Alaska Transportation Plan Area

1.3 Infrastructure Risk & Community Resiliency

Resiliency has become a key issue in the IATP area, particularly considering recent spring flooding events experienced in the communities of Yukon Flats, Circle, Kuspuk, Crooked Creek, Copper River, the City and Native Village of Eagle, and Glennallen. Many of these community disasters were a result of ice jams and snowmelt on the Yukon and Kuskokwim Rivers, leading to state disaster declarations for these communities. This allows for the identification of affected communities and grants eligibility for future reimbursement for any eligible emergency protective measures, while also activating the State of Alaska's Public and Individual Assistance Disaster Recovery Programs [4]. Each of these hazard events impacted both DOT&PF's physical infrastructure and daily system operations, as well as resulted in emergency response to quickly repair and, in some cases, replace damaged infrastructure.

Planning for and building resilient communities is not a new concept for Alaska and the communities in the IATP area. Generations of Alaskans have been implementing the core fundamentals of resiliency in their values to ensure the survival of their culture, customs, and communities [5]. The lasting presence of Alaska Natives in the existing communities and the focus on community resilience have resulted in innovations such as:

- Efficient and eco-friendly forms of transportation with the ability to traverse through arctic conditions (Snowmachines, dog sleds).
- Innovations in metallurgy (tools, weapons, jewelry).
- Use of physics of light, sound, water, and materials to increase success in hunting in arctic landscapes.
- Creation of tools and devices to assist in resilient survival.

Communities are encouraged at all levels to be prepared to withstand and recover from a wide range of hazards. Resiliency and elasticity, or the ability to 'bounce back' from an event, is not limited to businesses, communities, or governments. Resiliency is important to be considered and applied to systems that allow business, communities, and governments to get from one location to the next.

Without resilient infrastructure and systems, a resilient community is a community on its own. The goal for communities and infrastructure located within the IATP area is to reach a functional level of resiliency, preparedness, and hazard mitigation. This goal requires routine maintenance of planning documents and inspections to verify any major changes that would impact the community's level of resiliency.

1.4 Current Regional Climate

Weather in the IATP area has the greatest temperature variation of any region in Alaska, varying as much as 30 degrees in a single day. The climate of the area in the summer months has dry temperatures averaging mid-70 degrees Fahrenheit and can reach 100 degrees Fahrenheit on the warmest days. Winters tend to have temperatures that stay at or below 0 degrees Fahrenheit and can see snowfall up to 100 inches or more in more mountainous areas. Within the IATP area, there are three main climate zones: arctic in the north, continental in the central region, and transitional in the south-central Interior region. Each of these climate zones have their own characteristics that influence the geography of the land, weather patterns, and hazard events experienced.

1.5 Changing Climate

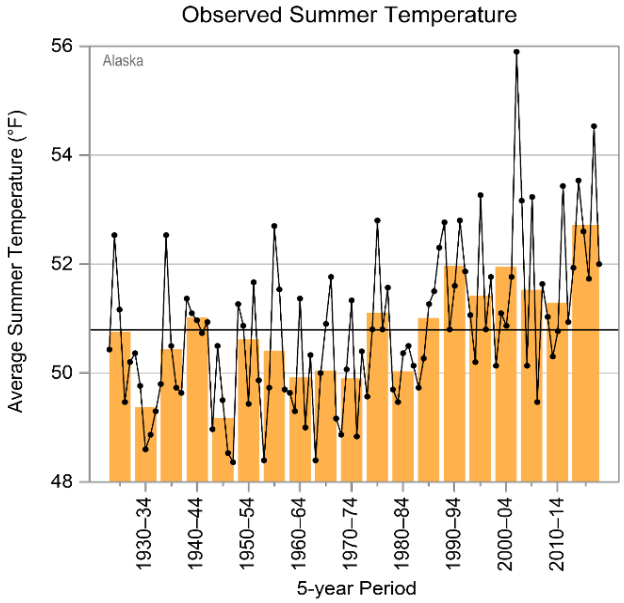

Figure 2. Interior Planning Area Observed Summer Temperatures 1925 to 2020 (ACRA, NOAA, CISESS 2022)

Alaska has been warming at a rate twice as fast as the global average since the middle of the 20th century. Figure 2 shows the average temperature during the summer months of June through August over five-year periods from 1925 to 2020. The black dots show annual values, while the gold bars show averages over the selected five-year periods. The black line across Figure 2 show the long-term average identified as 50.8 degrees Fahrenheit. There is a distinct increase in summer temperatures identified on Figure 2 in the years following 1990, with a peak average around 56 degrees Fahrenheit around 2004 [7] [8].

Figure 3 shows the average temperature during the winter months of December through February over five-year periods from 1925 to 2020. The black dots show annual values while the gold bars show averages over the selected five-year periods. The black line shows the long-term average, identified as 4.4 degrees Fahrenheit. Although the averages in Figure 3 seem to have not experienced much of an increase or decline over the years, the annual values have seen an elevated trend since the mid-1990s [7] [8].

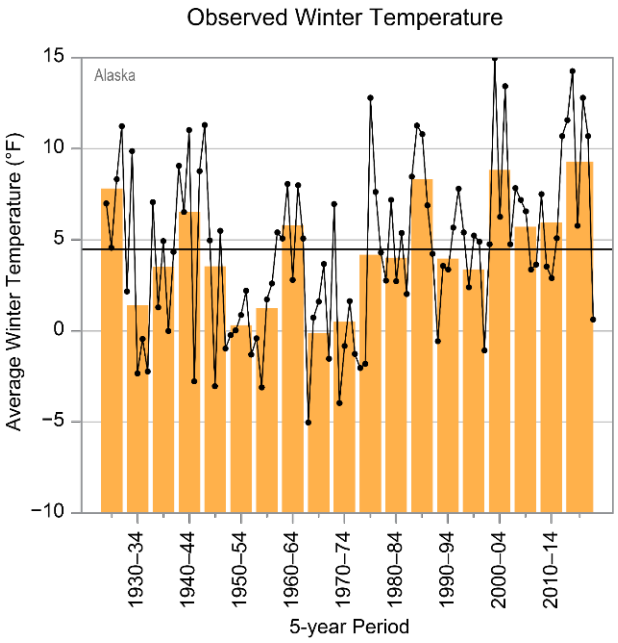

Figure 3. Interior Planning Area Observed Winter Temperatures 1925 to 2020 (ACRA, NOAA, CISESS 2022)

1.6 Common Hazards in the Interior Planning Area

FEMA defines a threat as a natural, technological, or human-caused occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, and/or property. A hazard is defined as an environmental phenomenon having the potential to affect societies and the human environment. For this memorandum, the term hazard will be used in place of threat. This is due to all identified events being categorized as environmental phenomena. The defined terms of threat and hazard relate to how risk is defined as a function of the nature, magnitude, vulnerabilities, and the consequences that could result from a threat/hazard [9].

1.6.1 Flooding and Erosion

Flooding and erosion are often associated with coastal communities, but communities within the IATP area are also at risk to these hazards. The issues associated with flooding and erosion for communities are often recurrent while requiring continued observation and preparation. In recent years, changes in the environment and climate have resulted in increased flooding and erosion within the IATP area, including permafrost degradation.

Flooding is defined as the general and temporary condition of partial or complete inundation of two or more acres of typically dry areas of land. This condition is the result of overflow, unusual and rapid accumulation or runoff of surface water, mud or landslides, or the collapse of land due to erosion. Flooding is a natural phenomenon, but when development is in proximity it becomes a hazard to life and structure.

Riverine flooding in the IATP area is often caused by water overflowing the side of the riverbank due to rainfall or runoff, flash flooding, alluvial fan, and ice jams. Other types of flooding occur from fluctuating lake levels, glacial lake overflow, groundwater, and aufeis.

Erosion occurs from water, ice, or wind and results in the removal of soil, rock, or any other dissolved material from one location to another. While it most often occurs over a lengthy period of time, in instances of flash flooding, erosion will happen rapidly and cause land to disappear without warning. The IATP area experiences riverine erosion and wind erosion.

Erosion vs. Ground Failure

The difference between ground failure and erosion is the location and length of time it takes for the event to occur. Erosion is often seen on riverbanks, caused by wind or water occurring over long periods of time. Ground failure events are defined as rapid events happening without warning and result from another hazard (such as flash flooding) that increases the flow of loose material.

1.6.2 Permafrost Degradation

There are three main cryospheric hazards that impact the IATP area: glaciers, avalanches, and permafrost. Of these hazards, permafrost degradation is not defined by FEMA as a nationwide hazard, as it is only found in Alaska. Glaciers and avalanches are included as nationwide hazards and are addressed in the flooding and erosion and ground failure sections, respectively.

Permafrost is found in approximately 85 percent of Alaska's soil and can be found most densely in Arctic Alaska, north of the IATP area and the Brooks Range. Moving south, permafrost begins to thin but remains present within the IATP area. Permafrost has unique structural importance within Alaska, and permafrost thaw has caused several environmental hazards, which are discussed in further detail in sections that follow.

1.6.3 Earthquake

Alaska has been identified as one of the most active states for seismic activity due to the subduction of the Pacific tectonic plate beneath the North American plate at the Alaska-Aleutian subduction zone. This subduction zone experiences frequent major movement that has resulted in deformation. There is no way to predict where in the state the next "big one" will occur or how large it will be.

The IATP area has not experienced a major earthquake since 2002, but as a state, Alaska experiences approximately one hundred earthquakes per day. The extent of these earthquakes can be seen in Figure 4, which was produced by the University of Alaska Fairbanks, Earthquake Center, and depicts seismic activity throughout the

whole state over the course of 2022[10]. These daily earthquakes often happen in remote, unpopulated locations, but demonstrate the seismic activity the state experiences.

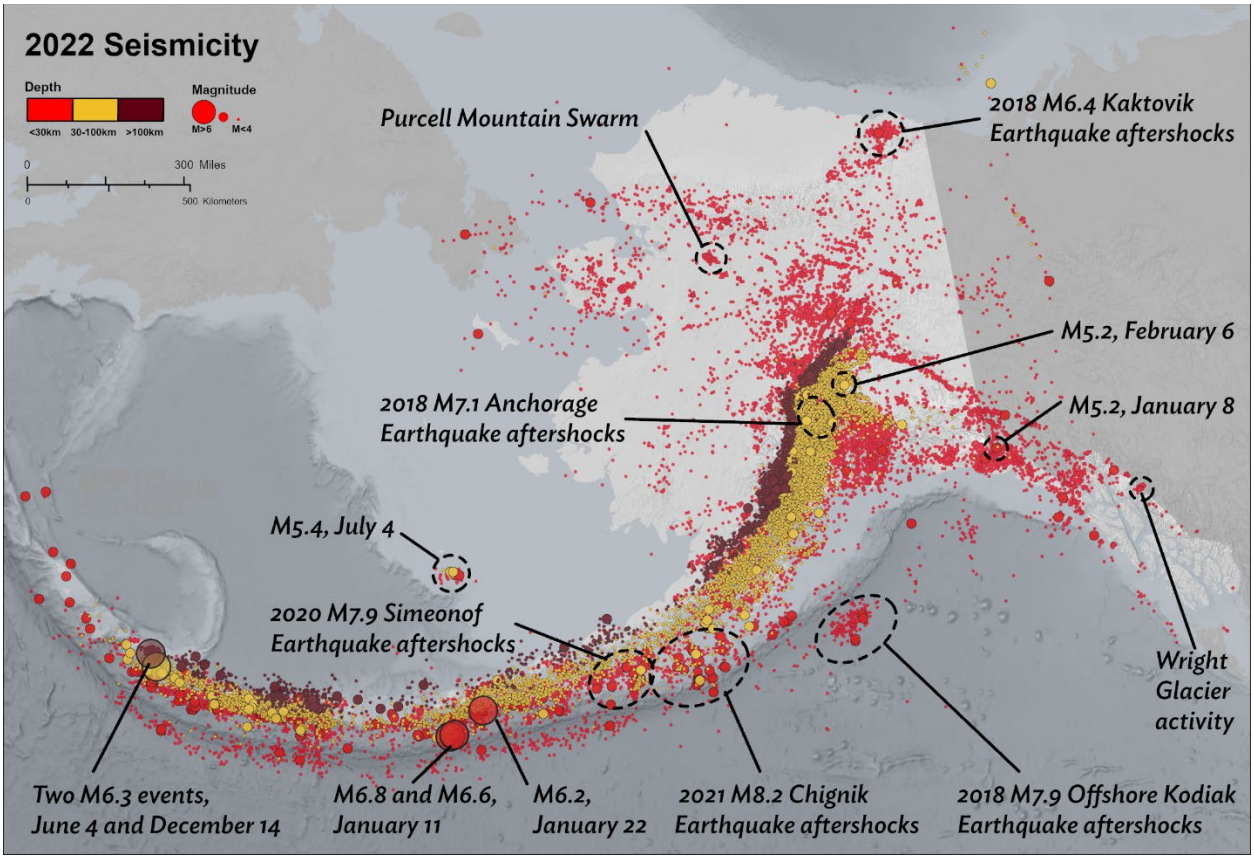

Figure 4. 2022 Seismicity Year in Review, University of Alaska Fairbanks Earthquake Center

1.6.4 Ground Failure

Ground failure has been added to the list of hazards through input from the Working Group, and includes hazards such as landslides, avalanches, mudslides, and rockslides in a single category. Table 1 identifies the several types of ground failure and their causes.

Ground failures are often seen when there is an increased slope to the land. Ground failure is unique in that as a hazard, it is typically a byproduct of another hazard. The type of ground failure is dependent on the type of material moving and the mechanics of it moving.

Table 1. Ground Failure Type and Cause

GROUND FAILURE TYPE	CAUSE
Landslide	Earthquake, human activity, ground water, wildfires, steep slope, Permafrost degradation
Avalanche	Earthquake, human activity, Permafrost degradation
Mudslide	Heavy rain, human activity, ground water, wildfires, steep slope
Rockslide	Heavy rain, human activity, ground water, steep slope, wildfires

1.6.5 Wildfire

Wildfires can ignite and spread quickly while being fueled by the natural vegetation found in the environment. These fires can be caused by both human activities and natural phenomena. Figure 5 depicts the seasonal fire phases within Alaska; included in the graph are acres burned and environmental influence responsible for impacting the spread by driving the wildfire. These drivers are identified as wind, duff, drought, and diurnal effect, all of which can be exacerbated or mitigated based on infrastructural or programmatic changes. [11].

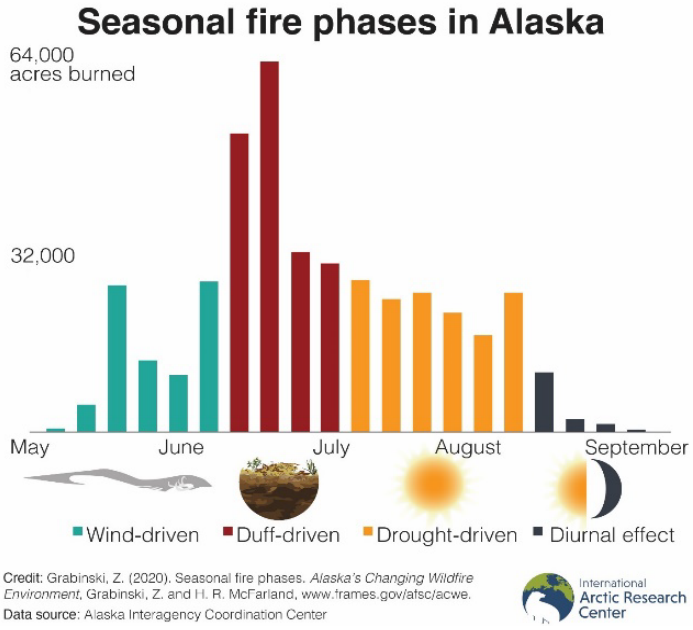

Figure 5. Seasonal Fire Phases and Environmental Drivers, International Arctic Research Center 2020

Many communities in the IATP area are impacted by wildfires due to seasonal effects, such as dry summers with long daylight hours. April marks the start of fire season in the IATP area and much of Alaska, when vegetation is green and begins to become lush while the ground and soil remains frozen. The fires ignited during this time tend to be caused by recreational activities, but typically cannot travel far due to the wet ground conditions. However, due to the cause of these wildfires, the fires are commonly close to communities' infrastructure. With the ability for strong winds to carry flames and embers, these communities' infrastructure remains at risk [11].

June and July are peak fire season, as well as the time of year with the most daylight hours. The IATP area can experience up to 24 daylight hours per day. Long days with sun exposure dries vegetation on the ground and creates an ideal environment for a wildfire hazard. Fires during this time of year are most often caused by lightning strikes. For the remainder of the summer season, the risk of wildfire occurrences continues based on the amount of precipitation. If the summer has been particularly dry and hot, the chances of experiencing a wildfire increase, while a cooler, wetter summer decreases the risk of continued wildfire hazards [11].

Wildfires occurring internationally and nationally in places such as Russia, Canada, Washington, and California can cause dense smoke. This dense smoke within the state and the IATP area can lead to visibility hazards when operating motor vehicles or human health hazards associated with poor air quality, such as asthma. Dense smoke is also a byproduct of wildfires occurring in Alaska and could become a hazard to the surrounding areas.

1.7 Hazard Mitigation Strategies

Being unable to control natural phenomena, experts within the field have come to together to develop potential mitigation strategies. These strategies can be based in planning practices and work to provide community education and preparedness, infrastructure inspections and repairs, and even community relocation as a last resort option. Under the Disaster Mitigation Act of 2000 community hazard mitigation planning is a requirement for communities to be eligible to receive FEMA disaster mitigation funding [12].

1.7.1 Protect in Place

"Protect in place" is a mitigation strategy that focuses on keeping the hazard at a manageable level. These practices can include providing community outreach and education on preparedness, environmental restoration or addition of hardening efforts, safety committees and policy boards, and implementation of management plans. Protect in place mitigation strategies require the identification of hazards and at-risk locations, collaboration, and community outreach [13].

1.7.2 Accommodate

"Accommodate" is a mitigation strategy that focuses on ways to enhance community and infrastructure without actively managing a hazard but limiting potential damage. This mitigation strategy is implemented with engineering practices that stabilize, maintain, and prepare for what could happen. Accommodating hazards requires funding for infrastructure inspections, staffing to carry out tasks such as inspections, design, implementation of safe and effective designs, construction, and agency and community collaboration [13].

1.7.3 Managed Retreat

"Managed retreat" is a last resort mitigation strategy seen most often in communities that experience hazards repeatedly. This mitigation strategy requires collaboration with FEMA, and communities must have an HMP with a managed retreat plan [13]. HMPs work to permanently move a community or infrastructure away from the hazard after exhausting all other efforts. HMPs are often developed to support a whole community moving at once, not just a single piece of infrastructure moving.

2.0 CURRENT RESILIENCY PLANNING EFFORTS

Resiliency in transportation planning is required by federal legislation. States are given the opportunity to set legislative guidance for resilience through transportation planning efforts. As mentioned, a Statewide DOT&PF Resiliency Plan is currently underway and will provide a more coherent framework for the current resiliency planning efforts in the state of Alaska.

The Alaska Administrative Code (AAC) currently does not include specific resiliency objectives, but rather includes a broader consideration for various objectives in the statewide planning process to include resiliency as a critical component of planning. 17 AAC 05.125 includes objective (5) which states that the statewide transportation planning process will consider the "preservation of existing transportation systems [14]". While the LRTP and STIP play pivotal roles in increasing the safety of the state's transportation system, ensuring proper maintenance of the transportation system, promoting economic growth, and enhancing resilience and sustainability in Alaska's systems and communities.

Federal legislation for transportation planning is established in Title 23 Part 450 of the Code of Federal Regulations (CFR). This includes 23 CFR 450.206(a)(9) which addresses the inclusion of resiliency within transportation planning. This regulation expresses that statewide transportation planning should improve the resilience and reliability of the transportation system and reduce or mitigate stormwater impact of surface transportation [15].

The United States Department of Transportation (USDOT), FEMA, and the State of Alaska have initiated several plans and programs to promote resiliency. These plans develop policy for regional long-range resiliency planning as well as create criteria-based documentation to aid in project selection.

2.1 Infrastructure Investment and Jobs Act

The Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL), focuses on funding investments while acknowledging and addressing climate change in the United States. Among the infrastructure investments supported by IIJA, investments focused on the reduction of greenhouse gas (GHG) emissions and promoting an increase in the overall resilience of transportation infrastructure in the United States are at the forefront of this legislation [16].

2.2 Alaska Long Range Transportation Planning

Alaska's Statewide LRTP is created under federal mandate 23 CFR 450.216 and AAC 17. The statewide transportation planning process serves as a guide to help establish transportation funding policy within the state of Alaska [17]. At the time of writing, *Alaska's 2050 Long Range Transportation Policy Plan Update – Alaska Moves* is in a public review draft form. This draft LRTP includes resiliency as a goal for Alaskans to "assess risk and invest in solutions to develop a transportation agency and system that will adapt to and recover from the effects of climate change, natural disasters, and other disruptions." Two focus areas of resiliency in the LRTP are agency resiliency, which focuses on a resilient workforce, and resilient infrastructure, which focuses on resilient transportation infrastructure, facilities, and plans [18].

The older *2036 Long Range Transportation Policy Plan Update – Let's Keep Moving 2036* includes a focus on improvements to the transportation system and addition of redundancy to address safety and security risks. Some of the policies included focus on working with federal, local, and state agencies to provide safe, secure, and resilient transportation systems and emergency preparedness for all modes with an improved resiliency for events such as earthquakes, climate change, and manufactured disaster [19].

2.3 Hazard Mitigation Planning

Hazard mitigation planning is provided for under 44 CFR 206.401, which works to identify and profile hazards, provide an analysis of the people and facilities at risk, and assist in the development of actions to reduce and/or eliminate hazard risks [20]. These plans are pertinent to maintaining statewide and local eligibility for certain FEMA mitigation grant funding opportunities for mitigation planning. The elements required to be included in hazard mitigation plans are defined by FEMA in their Local Mitigation Planning Policy Guide. This guide is informed by 44 CFR 201.6(c)(2)(i) [21] [22].

2.3.1 State Hazard Mitigation Plan

The SHMP assists in identifying the planning process for HMPs based on criteria provided by FEMA, prior to identifying all hazards found within Alaska. With Alaska being a large state, with many diverse climates and ecosystems, there are many hazards identified within the SHMP. These hazards include:

- Cryosphere and Permafrost Degradation
- Earthquake
- Flooding and Erosion
- Ground Failure
- Tsunami and Seiche
- Volcano
- Severe Weather
- Wildland Fire and Community Fire
- High Hazard Potential Dams

The capabilities and assistance through hazard mitigation laws, regulations, policies, and programs available throughout Alaska are also identified within this SHMP, creating a single location to view information. The SHMP has identified obstacles, challenges, and solutions to hazard mitigation capabilities, such as the lack of coordinated code adoption statewide or the lack of participation in the National Flood Insurance Program.

The SHMP serves as a framework for the types of mitigation strategies that can be developed for communities for identified hazards. It is focused on providing communities and planning entities with the information, tools, and resources needed to conduct local hazard and mitigation planning.

2.3.2 Community Hazard Mitigation Plans

Communities throughout the IATP area have developed local HMPs, or for Native Villages/Tribes, Tribal Hazard Mitigation Plans (THMPs). Local HMPs and THMPs, like the SHMP, are required to be updated every five years to be considered compliant with FEMA-guiding legislation. HMPs and THMPs should, at a minimum, include:

- Identification of the planning area
- Completion of a risk assessment, including:
  - Identification and description of hazards
  - Identification of community assets
  - Analysis of potential hazard impacts to community and assets
  - Summary of vulnerability
- Review of community mitigation capabilities.

- Development of a mitigation strategy, including:
  - Mitigation goals
  - Mitigation actions
  - Prioritization of actions
  - Implementation plan
- Strategies to keep the plan current.

Approximately half of the communities in the IATP area have a hazard mitigation plan, although 12 of the plans have not been updated within the last five years. Currently, six of these communities meet the required elements to be eligible for funding and recognition as current by FEMA, and the remaining plans are either overdue for an update or do not include required plan elements. Without an established or updated local HMP, a community may be ineligible to receive funding in the event of a hazard event and may be unprepared to mitigate hazards of particular concern to those communities. Table 2 provides an overview of the HMPs within the IATP area, the communities included in the plan, and the last known update to the plan.

Table 2. Hazard Mitigation Plans, Communities Included, and Last Updates within the IATP Area

HAZARD MITIGATION PLAN TITLE	COMMUNITIES INCLUDED	LAST UPDATE
The City of Nenana Hazard Mitigation Plan	City of Nenana	2010
Native Village of Tanacross Hazard Mitigation Plan	Native Village of Tanacross	2013
Matanuska-Susitna Borough Hazard Mitigation Plan	Lake Louise	2013
City of Eagle Native Village of Eagle Hazard Mitigation Plan	City of Eagle and Native Village of Eagle	2014
Native Village of Circle Hazard Mitigation Plan	Circle Village	2014
Native Village of Chitina Hazard Mitigation Plan	Native Village of Chitina	2015
Copper Center Hazard Mitigation Plan/Village of Kluti-Kaah Hazard Mitigation Plan	Native Village of Kluti-Kaah (Copper Center) and some aspects of Wrangell-St. Elias National Park	2015
City of Fort Yukon, Alaska Hazard Mitigation Plan	City of Fort Yukon	2017
Tanana Hazard Mitigation Plan	City of Tanana and Tanana Tribal Council	2017
Delta Junction and Deltana Local Hazard Mitigation Plan	Delta Junction and Deltana Region (Big Delta, Whitestone, Healy Lake, and Fort Greely)	2017
Community of Tok, Alaska Hazard Mitigation Plan	Tok	2018
Native Village of Venetie Tribal Hazard Mitigation Plan	Native Village of Venetie and Arctic Village	2018
Glennallen and Native Village of Tazlina Multi-Jurisdictional Hazard Mitigation Plan	Glennallen and Native Village of Tazlina	2019
Denali Borough and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan	Denali Borough (Cantwell, Ferry, Healy, and Denali Park (formerly McKinley Village)) and the City of Anderson	2020
Fairbanks North Star Borough – FNSB Hazard Mitigation Plan	Fairbanks, North Pole, Fort Wainwright, Eielson Airforce Base	2021
Gulkana Village Tribal Hazard Mitigation Plan	Tribal Planning Area of Gulkana	2023
Native Village of Gakona Tribal Hazard Mitigation Plan	Tribal Planning Area of Gakona	2023
Northway Village Tribal Hazard Mitigation Plan	Northway Junction, Northway Native Village, and Northway Airport	2023

Thirty-one (31) communities within the planning area are currently without an established HMP. Identified by census designated place (CDP), these communities include Chisana, Chistochina, Kenny Lake, McCarthy, Mendeltna,

Mentasta Lake, Nabesna, Nelchina, Paxson, Silver Springs, Slana, Tolsona, Tonsina, Willow Creek, Alcan Border, Chicken, Dot Lake, Dot Lake Village, Tetlin, Beaver, Birch Creek, Central, Chalkyitsik, Coldfoot, Four Mile Road, Lake Minchumina, Livengood, Manley Hot Springs, Minto, Rampart, and Stevens Village.

Funding is available to establish a HMP through FEMA's Hazard Mitigation Grant Program. This program provides funding to qualified state, local, tribal, and territorial governments to develop HMPs and have opportunities to rebuild in ways that reduce or mitigate future losses due to disaster. This grant funding is available to communities following a presidentially declared disaster. An additional option for funding through FEMA that does not require a community to have recently experienced a disaster includes Building Resilient Infrastructure and Communities (BRIC). BRIC funding focuses on shifting reactive emergency response to proactive emergency response and is the appropriate funding source for communities seeking assistance to update their HMP. These funding sources are competitive processes and require communities seeking assistance to complete applications detailing their purpose and need for funding [23].

In addition to funding assistance, technical assistance is offered through Building Resilient Infrastructure and Communities Direct Technical Assistance (BRIC DTA). This technical assistance program focuses efforts to support local and tribal communities that may not have the needed resources to carry out a resilience planning project. Communities receiving assistance under BRIC DTA may or may not be receiving monetary assistance from FEMA, while all activities under BRIC DTA are non-financial support services, such as climate risk assessment, community engagement, partnership building, mitigation planning, and assistance applying to and finding grant opportunities [24].

2.3.3 State and Federal Resilience Programs

On federal and state levels, several resilience focused programs have been created and are available for reference and implementation in Alaska's communities. The functionality of these programs ranges from managing and distributing funding to providing technical tools, training, and education. These resilience-based programs not only focus on the overarching theme of resilience but also address other areas, such as mitigation, sustainability, and climate.

State programs support Alaskan communities to conduct hazard mitigation, education, and planning. State agencies providing programs include the Division of Community and Regional Affairs (DCRA), DOT&PF, and Department of Natural Resources Division of Forestry and Fire Protection (DNR, DFFP), while the efforts of the federal programs provided by agencies and programs such as FEMA, USDOT, and IIJA focus on providing competitive grant funding opportunities.

The identification of these programs, the agency responsible, a brief description, and their area(s) of focus are included in Table 3.

Table 3. Federal and State Resilience Based Programs

PROGRAM	ENTITY	DESCRIPTION	FOCUS AREA(S)			
			RESILIENCE	MITIGATION	SUSTAINABILITY	CLIMATE
Community Resilience Programs	DCRA	Provides tools, training, and funding to educate, prepare, respond, and recover, with a focus on risk assessment, planning, and implementation.	✓	✓		
Village Inter-Agency Planning Groups	DCRA	Establishes Planning Groups that involve multiple agencies, including those within threatened communities, to collaborate on establishing strategies and solutions, while reducing duplication of efforts, and increasing engagement.	✓	✓		
Alaska Climate Change Impact Mitigation Program	State of Alaska	Established in 2008 and completed in 2016, this program created materials that remain available and valuable. This program supplied technical assistance and funding to communities experiencing immediate impacts from natural hazards resulting from environmental climate changes. The program assisted in developing planned mitigation approaches using hazard impact assessment and community adaption planning grants.		✓		✓
Firewise	DNR, DFFP	Focuses on community-based practices for preparing communities and homes to be compatible with the area's ecosystem to withstand wildfires. Three communities are currently regarded as Firewise communities, two of which are within the IATP planning area: Kennicott/McCarthy and Ester Lump.	✓	✓		

PROGRAM	ENTITY	DESCRIPTION	FOCUS AREA(S)			
			RESILIENCE	MITIGATION	SUSTAINABILITY	CLIMATE
Carbon Reduction Program	IIJA	Supplies funding for projects designed to reduce transportation emissions (strictly defined as carbon dioxide emissions from on-road highway sources).			✓	✓
Congestion Mitigation and Air Quality Improvement	USDOT	Supplies funding for transportation projects and programs that aid in meeting the Clean Air Act.			✓	✓
Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT) Formula Program	IIJA	Provides funding for projects that focus on creating surface transportation that is resilient to natural hazards through planning, resilience improvements, community resilience, evacuation routes, and at-risk costal infrastructure.	✓	✓		
Hazard Mitigation Grant Program	FEMA	Funding provided to state, local, tribal, and territorial governments for purposes such as developing hazard mitigation plans and opportunities to rebuild in ways that reduce or mitigate future losses in the community.	✓	✓		
Building Resilient Infrastructure and Communities (BRIC)	FEMA	Provides funding to state, local, tribal, and territorial governments to undertake hazard mitigation projects that reduce the risks faced from disasters and other natural hazards. BRIC focuses on supporting communities by being a flexible, consistent program that builds capabilities and capacities, encourages, and promotes innovation, promotes partnerships and collaborations, and creates the possibility of large-scale projects.	✓	✓		

3.0 RISK TO INFRASTRUCTURE RESILIENCE ASSESSMENT

The risk assessment considers hazards specific to the IATP area that may impact the resilience of transportation infrastructure. This assessment uses data-driven risk assessment tools from FEMA and SNAP, as well as the input from the IATP Working Group, which includes stakeholders throughout the IATP area. The assessment concludes with a matrix outlining each community's anticipated FEMA hazard(s) and associated risk level, the assigned permafrost risk level, facilities identified to be at risk, the overall recommended mitigation strategy, and whether the risk has been identified in a community or state hazard mitigation plan.

3.1 FEMA Hazards Risk Assessment

3.1.1 FEMA Hazards: Wildfire, Flooding, Cold Wave, Avalanche, Earthquake, Winter Weather, and Ice Storm

The FEMA National Risk Index is an online interactive mapping tool that depicts the 18 most common natural hazards and their risk throughout the United States. The risk index tool provides data on risk index, expected annual loss, social vulnerability, and community resilience, which are the components of assessing a community's resilience to hazards [1]. For the IATP area, the FEMA hazards assessed include wildfire, flooding, cold wave, avalanche, earthquake, winter weather, and ice storm hazards, but does not currently include all hazards found within the Interior planning area, namely permafrost. These hazards are addressed with Alaska's SNAP models in **Section 3.3.**

The FEMA National Risk Index is a representation of the combined elements of **Expected Annual Loss** (EAL) due to an event and the **Community Risk Factor**, as shown in Figure 6. Each element contains data associated with the natural hazard occurrence related to economic loss (for expected annual loss) and overall community vulnerability and resilience (for Community Risk Factor).

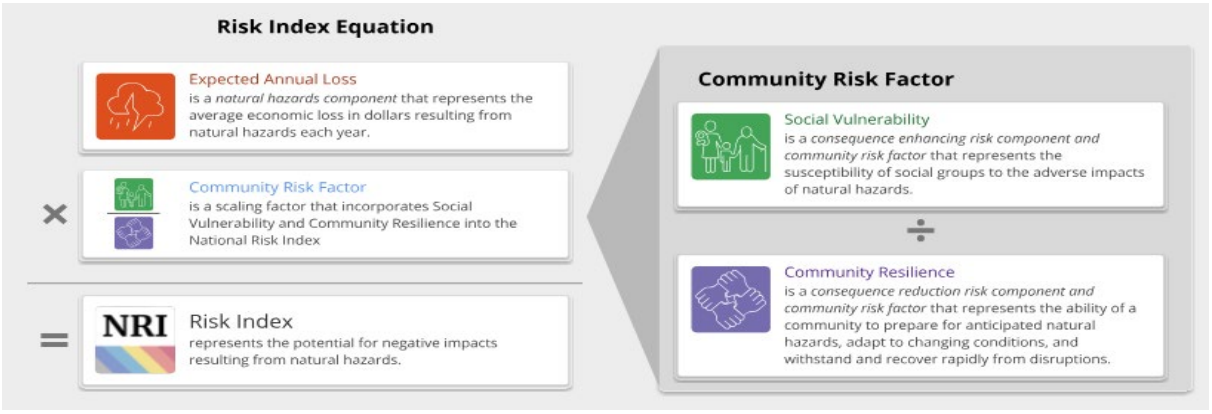

Figure 6. FEMA NRI Definitions for Risk Index Equation and Community Risk Factors

Expected Annual Loss is calculated from three criteria reduced to a representative number. Figure 7 outlines how loss is estimated due to a natural hazard consequence factor ("Exposure"), the probability of the event each year ("Annualized Frequency"), and the estimated percentage of exposed infrastructure value expected to be lost due to the natural hazard occurrence ("Historic Loss Ratio").

- **Exposure** – Represents the value of buildings, population, or agriculture that would be exposed to a natural hazard. These are often referred to as assets. Used in calculating expected annual loss.
- **Annualized Frequency** – Represents the expected frequency or probability of a natural hazard occurring per year. Used in calculating expected annual loss.
- **Historic Loss Ratio** – Represents the estimated percentage of exposed building value, population, or agriculture (assets) value expected to be lost due to a natural hazard occurrence. Used in calculating expected annual loss.

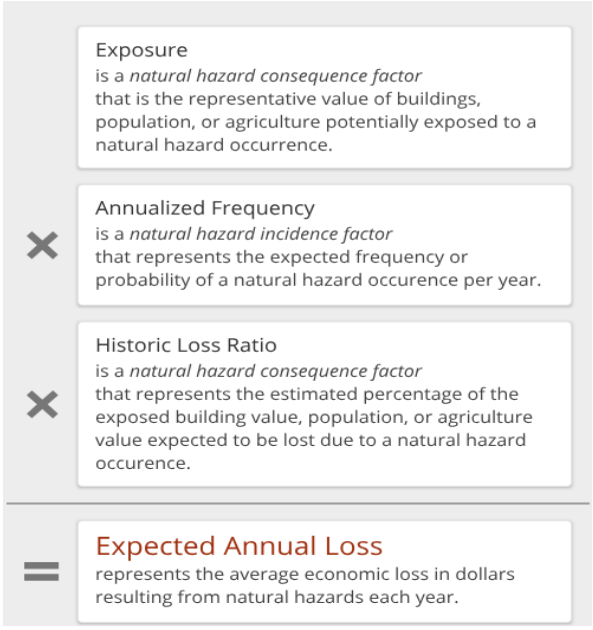

Figure 7. Expected Annual Loss Factors

The **Community Risk Factor** incorporates Social Vulnerability and Community Resilience to create a scaling factor into the National Risk Index.

Social Vulnerability – Represents the susceptibility of social groups to the adverse impacts of natural hazards.

Community Resilience – Represents the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover from disruptions.

Risk Index – The potential for negative impacts resulting from natural hazards.

Risk Value – A value used to measure risk within the National Risk Index. Used to generate all Risk Index percentiles and ratings [1].

3.2 FEMA Risk & Resiliency Assessment by Community

The FEMA Risk Index Score and associated resiliency assessment for each community are compiled in Appendix 2. The assessments are detailed to the census tracts level to assess risk levels and estimated resiliency levels for each individual community located within the IATP area boundary.

Each community is assigned a score between 0 and 100 based on its level of risk for each hazard, the overall risk, social vulnerability, and community resiliency. These scores are compared to communities of the same type (i.e., tracts compared to tracts, counties compared to counties) and then given a category label as "very high," "relatively high," "relatively moderate," "relatively low," or "very low" [1].

Table 4 outlines the national and state averages for FEMA Risk Index score and category and the associated social vulnerability and community resilience to provide a baseline to compare the individual borough, census area, or census tract information provided for each community in the planning area.

Table 4. National and State Averages for FEMA Risk Index, Social Vulnerability, and Community Resilience

INDEX AVERAGE CATEGORY	RISK INDEX SCORE / CATEGORY		SOCIAL VULNERABILITY		COMMUNITY RESILIENCE	
National	45.05	Very Low Risk	86.57	Very High	3.21	Very Low
Alaska	80.00	Relatively Moderate Risk	83.30	Relatively High	6.70	Relatively Low

3.3 Permafrost Risk Assessment by Community

SNAP has created and implemented tools to assist Alaskan communities, including many in the IATP area, identify their vulnerability to permafrost. Part of SNAP's research involves collecting and analyzing data pertaining to permafrost and permafrost degradation in rural Alaska through the SNAP Community Permafrost Data Hub. The data hub allows for SNAP to create, score, and assign each of the rural communities identified with risk levels. The risk level assignment is based on the following scoring and evaluations:

- Risk level – The sum of ranking for each identified category.
- Massive ice occurrence.
- Thaw susceptibility.
- Existing permafrost related problems.
- Permafrost occurrences.
- Permafrost temperature.

The table identifying the scoring and evaluations for the communities identified within the IATP area can be found in Appendix 3. SNAP identified 24 communities within the IATP area, which are included in detail in Appendix 3, from which to collect permafrost data. Of the communities in the planning area, Circle has been identified as having a high permafrost risk level. Other communities identified have been assigned risk levels of either medium or low. Many factors influencing the overall risk level are community dependent, while there is a commonality of warm permafrost temperatures in many of the communities identified. This overall warming permafrost temperature plays an important role in the cryosphere changes being observed.

3.4 Resiliency Working Group Risk Assessment

On August 16, 2023, a working group meeting was held via video conference. The meeting provided attendees an update on the IATP process and outlined the purpose of the working group meeting: identify the most prominent risks within the IATP area and identify key infrastructure locations at risk. A summary of the Resiliency Working Group is found in Appendix 1.

Attendees were grouped according to representative geography. These geographic groupings were based on the working group's representative attendees and are shown on Figure 8, Interior Alaska Transportation Plan Working Group Sub-Region Map. The geographic groupings include Yukon Flats, Upper Tanana, Copper River, Middle Yukon/Fairbanks, and the Denali Borough. The sub-regions are general locations; the boundaries shown on Figure 8 cover the IATP area, not necessarily any census-designated or otherwise official governmental boundary. The geographic divisions are a simplified representation of regional planning organization (RPO) and census subarea boundaries being considered in a DOT&PF effort to form and collaborate with regional transportation planning organizations.

During the breakout discussions, attendees identified hazards, locations, and infrastructure in their communities that are at risk while also providing input on the associated risk level and suggested mitigation strategies. Hazards identified included FEMA-recognized hazards (Flooding, Wildfire, Earthquake and Erosion), as well as permafrost. The groups shared knowledge to identify the location of infrastructure at risk to a hazard event, level of risk to the identified infrastructure, priority, and recommended mitigation strategy. Table 5 outlines the at-risk infrastructure perceived as a high risk and/or high priority to the sub-region and recommended mitigation actions for DOT&PF and partner agencies tasked with infrastructure management and maintenance.

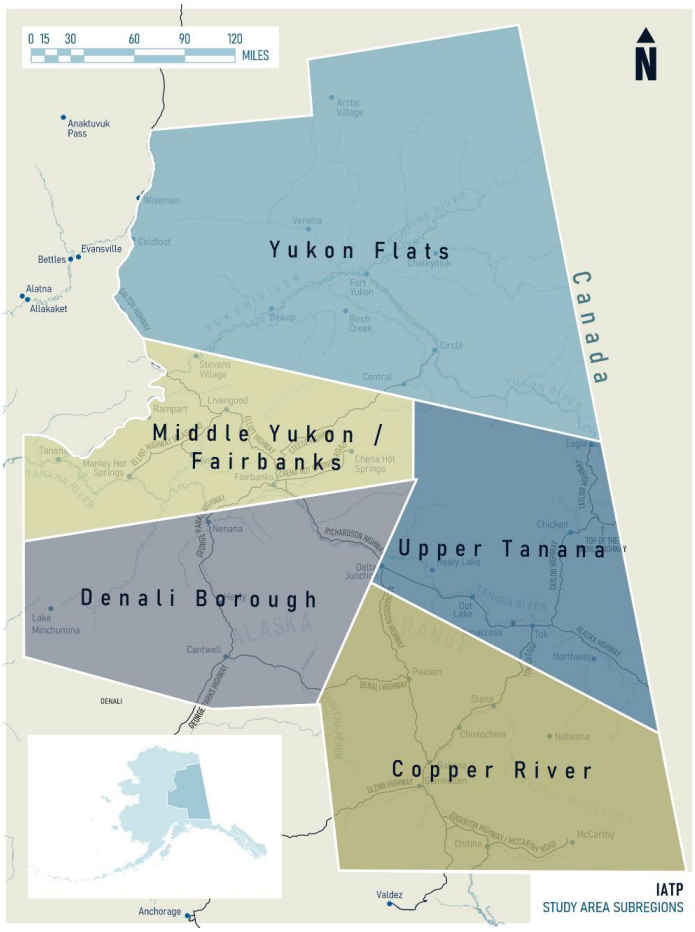

Figure 8. Interior Alaska Transportation Plan Working Group Sub-Region Map

Table 5. Community Working Group Identified High Risk and/or High Priority Actions

SUB-REGION	HAZARD	AT-RISK INFRASTRUCTURE IDENTIFIED	RECOMMENDED ACTION
Yukon Flats	Wildfire	Roads, Utility/Communication Infrastructure	Appropriate clearing to protect right-of-way to mitigate fire destruction of infrastructure.
	Flooding	Roads, equipment, structures	Improve policy and collaboration with community leadership.
	Erosion	Homes, structures	
	Earthquake	Homes, structures, roads, utilities	
	Permafrost	Roads	Align design, construction, and maintenance standards to mitigate the impact.
Upper Tanana	Wildfire	Any infrastructure impacted blocks evacuation from communities with limited access (Examples: Dot Lake and Sand Lake)	Provide appropriately customized information to community.
	Flooding	Johnson River Bridge Robertson River Bridge	Replace Bridges to withstand flooding events.
Copper River	Flooding (continues to occur annually)	Flooding locations: O'Brien and Hidden Creek near the Edgerton Highway, Glennallen, Copper River	Continue to monitor and replace infrastructure in response to historical flooding challenges.
	Erosion	Access road to Copper River, McCarthy Road to Kennecott (one access in/out); this includes landslides	Repair / replace roadway segments experiencing failure
	Wildfires	Limited access via road or air for evacuation	Additional access and/or improved evacuation routes (road or air).
Middle Yukon/Fairbanks	Wildfire	Roads, Utility/Communication Infrastructure	Appropriate clearing to protect right-of-way to mitigate fire destruction of infrastructure.
	Flooding, Erosion, Permafrost	Homes, roadways	Plan and prepare for appropriate mitigation of flooding, erosion due to climate change.
	Earthquake	Deficient bridges with possible subsurface structure	Replace bridges with seismic retrofits as needed.
Denali Borough	Wildfires, Flooding/Ice Jams	Dry Creek Infrastructure, Community of Anderson Dyke	Community Programs, Awareness, and on-going collaboration with state and federal agencies to address maintenance needs (Anderson Dyke).

3.5 Piecing It Together

Likely hazards and community risk factors using information from the FEMA National Risk Index, available community based HMPs, SNAP, and input from the IATP Working Group creates an overview of the planning area's most at-risk communities and infrastructure. A summary of the risks to the IATP area's infrastructure is found in this section by considering the risk index, historical occurrence, social vulnerability, and community resilience levels of each community by census track or borough census area. The summary also includes input by local community members through the IATP working group during a workshop focused on community infrastructure resiliency.

From a regional perspective, most of the IATP area shows "very high" or "relatively high" risk in the area of Social Vulnerability and "very low" or "relatively moderate" Community Resilience. Table 6 provides a regional overview of the FEMA Risk Index Categories by each census-designation (tract, borough, or area), noting opportunities for improvement for all communities within the IATP area. For detailed FEMA Risk Index Category Rankings detailed by local communities, Appendix 2 includes the full assessment details for each census tract or area included in Table 6.

The overview scores in Table 6 are representative of scoring factors such as repeat historical occurrences of flooding, winter weather, and avalanche as common in communities having the topography to support land movement. Additional hazards identified as being a higher risk due to their historical occurrences include wildfires and earthquakes.

Table 6. Regional FEMA Risk Index Category Ratings

	YUKON FLATS/MIDDLE YUKON/FAIRBANKS SUBREGIONS				UPPER TANANA SUBREGION		DENALI SUBREGION	COPPER RIVER SUBREGION	
	Y-K Census Tract 1	Y-K Census Tract 2	Y-K Census Tract 4	Fairbanks North Star Borough	SE FBX Census Tract 1	SE Census Tract 2	Denali Borough Census Area	Copper River Census Area	Mat-Su Census Tract 2
Risk Index	Relatively Moderate Risk	Relatively Moderate Risk	Relatively Low Risk	Relatively Low Risk	Relatively High Risk	Very High Risk	Relatively Moderate Risk	Relatively Low Risk	Relatively High Risk
Social Vulnerability	Very High	Very High	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively High	Relatively Moderate
Community Resilience	Very Low	Very Low	Very Low	Relatively Moderate	Very Low	Very Low	Very Low	Relatively Moderate	Very Low

It should be noted that the FEMA Risk Index assessment data does not include evaluation due to instances of major flooding events caused by snow melt or ice jams. Using information from community members provided at the working group, additional communities at risk due to these type of flooding events were able to be identified. These communities include Eagle, Eagle Village, and Glennallen.

While the aspect of social vulnerability and community resilience was not addressed directly in the working group, these concepts occurred naturally during discussion between attendees. Concerns addressing social vulnerability and community resilience include the quantity and availability of evacuation routes (including air), interagency coordination, policy implementation and planning, community education and preparedness, state and local government officials' education on hazards, and medical facility/medication surplus access.

The following sections and their accompanying tables take a deeper look into the information obtained via FEMA's National Risk Index, SNAP's Permafrost Risk Levels, the IATP Resiliency Working Group, and a desktop analysis using geographic information systems (GIS) to identify facilities in proximity to identified hazards. These tables identify the specific at-risk facilities for communities and mitigation strategies that can be used to address vulnerabilities.

3.6 Yukon Flats and Middle Yukon/Fairbanks Subregion

YUKON FLATS

Table 7. Yukon-Koyukuk Census Tract 1 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

YUKON-KOYUKUK CENSUS TRACT 1					
LOCATION	**IDENTIFIED HAZARDS**	**FEMA RISK INDEX CATEGORY FOR THE COMMUNITY FOR ALL HAZARDS**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Arctic Village	Wildfire Flooding Permafrost	Relatively Moderate	Medium	Arctic Village Airport Mountain Street Airport Street Village Center	Protect in Place
Venetie	Flooding Wildfire	Relatively Moderate	Low	Venetie Airport Fort Yukon Trail and Landfill Access Road (responsible for providing access to Airport)	Protect in Place
Beaver	Flooding Wildfire	Relatively Moderate	Medium	Government Road Beaver Airport Landfill Access Road	Protect in Place
Fort Yukon	Flooding Wildfire Permafrost	Relatively Moderate	Medium	Fort Yukon Airport Fort Yukon Long Range Radar Site FAA Site Road First Avenue	Protect in Place

YUKON-KOYUKUK CENSUS TRACT 1					
LOCATION	**IDENTIFIED HAZARDS**	**FEMA RISK INDEX CATEGORY FOR THE COMMUNITY FOR ALL HAZARDS**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Chalkyitsik	Flooding Wildfire	Relatively Moderate	Low	Fishhook Drive Kutchin Street Gravel Pit Road Ridge Road	Protect in Place
Birch Creek	Flooding Wildfire	Relatively Moderate	Low	Landfill Road Fort Yukon Trail Birch Creek Airport	Protect in Place
Circle	Flooding Wildfire Permafrost	Relatively Moderate	High	River Street (Steese Highway) Circle City Airport Steese Expressway Town Center	Protect in Place/ Accommodate
Central	Flooding Wildfire	Relatively Moderate	No Risk Level Assigned	Steese Expressway Montana Creek M&O Station Crooked Creek Bridge Circle Hot Springs Road Deadwood Creek Bridge	Protect in Place

YUKON FLATS/MIDDLE YUKON

Table 8. Yukon-Koyukuk Census Tract 2 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

YUKON-KOYUKUK CENSUS TRACT 2					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Stevens Village	Flooding Wildfire Permafrost	Relatively Moderate	Medium	Harding Road Airport Road Stevens Village Airport	Protect in Place
Livengood	Wildfire	Relatively Moderate	No Risk Level Assigned	Livengood Camp Airport Livengood M&O Station Elliott Highway Dalton Highway	Protect in Place
Rampart	Flooding Wildfire Permafrost	Relatively Moderate	Medium	1st Avenue 6th Avenue 2nd Avenue Rampart Airport Minook Creek Road	Protect in Place/ Accommodate
Minto	Flooding Wildfire	Relatively Moderate	Low	Minto Road Minto Al Wright Airport	Protect in Place

YUKON-KOYUKUK CENSUS TRACT 2					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Nenana	Flooding Wildfire Ground Failure	Relatively Moderate	Low	Alaska Native Veterans Honor Bridge Shirley Demientieff Memorial Bridge Parks Highway Totchaket Road 10th Street Cemetery Road Port of Nenana Airport Service Road Nenana Municipal Airport	Protect in Place/ Accommodate
Manley Hot Springs	Flooding Wildfire	Relatively Moderate	Medium	Elliott Highway (Near the Tanana River)	Protect in Place
Tanana	Flooding Wildfire Permafrost	Relatively Moderate	Medium	Ralph M Calhoun Airport All Roadways along Tanana River White Alice Road Tanana Road (Elliott Highway)	Protect in Place/ Accommodate

MIDDLE YUKON/FAIRBANKS

Table 9. Fairbanks North Star Borough Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

FAIRBANKS NORTH STAR BOROUGH HAZARDS					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Chena Hot Springs Road	Permafrost Riverine Flooding	Relatively Low Risk	No Risk Level Assigned	Roadway Flat Creek Bridge Little Chena River Bridge	Protect in Place/ Accommodate
Goldstream Road	Permafrost	Relatively Low Risk	No Risk Level Assigned	Roadway	Protect in Place/ Accommodate
Ballaine Road	Permafrost Earthquake	Relatively Low Risk	No Risk Level Assigned	Roadway Goldstream Creek Bridge	Protect in Place/ Accommodate
Elliott Hwy	Permafrost Flooding	Relatively Low Risk	No Risk Level Assigned	Roadway Washington Creek Bridge	Protect in Place/ Accommodate

3.7 Upper Tanana Subregion

Table 10. Southeast Fairbanks Census Tract 1 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

SOUTHEAST FAIRBANKS CENSUS TRACT 1					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Eagle/Eagle Village	Avalanche Flooding	Relatively High Risk	Medium	Taylor Highway Eagle Airport American Creek	Protect in Place
Northway	Flooding Wildfire Erosion Permafrost	Relatively High Risk	Low	Fish Camp Creek Bridge Northway Airport Alaska Highway Northway Road All Facilities Near Nabesna River Population Center	Protect in Place/ Accommodate
Tanacross	Flooding Wildfire Permafrost	Relatively High Risk	Medium	Tanacross Airport Alaska Highway Richardson Highway	Protect in Place
Tok	Wildfire	Relatively High Risk	No Risk Level Assigned	Alaska Highway Tok Junction Airport	Protect in Place
Tetlin	Wildfire	Relatively High Risk	Low	Tetlin Airport	Protect in Place
Dot Lake/Dot Village	Wildfire	Relatively High Risk	No Risk Level Assigned	Alaska Highway	Protect in Place
Dry Creek	Wildfire	Relatively High Risk	No Risk Level Assigned	Alaska Highway Dry Creek Road	Protect in Place

Table 11. Southeast Fairbanks Census Tract 4 Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

SOUTHEAST FAIRBANKS CENSUS TRACT 4					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Healy Lake	Flooding Wildfire	Very High Risk	No Risk Level Assigned	Landfill Access Road	Protect in Place
Fort Greely	Wildfire Flooding	Very High Risk	No Risk Level Assigned	Alaska Highway Meadows Road	Protect in Place
Delta Junction/ Deltana/ Big Delta	Ground Failure Flooding	Very High Risk	No Risk Level Assigned	Delta Junction Airport Alaska Highway Richardson Highway Tanana River Big Delta Bridge Delta Junction M&O Station	Protect in Place

3.8 Denali Borough Subregion

Table 12. Denali Borough Census Area Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

DENALI BOROUGH CENSUS AREA					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Anderson	Flooding Wildfire Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Anderson Road	Protect in Place
Clear	Flooding Wildfire Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Bear Creek Bridge	Accommodate
Healy	Wildfire Flooding Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Healy River Airport Dry Creek Bridge Stampede Road Panguinegue Creek Bridge	Protect in Place
Ferry	Flooding Wildfire Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Ferry/Eva/Moose Creek Road	
North of McKinley/Denali Park Area	Wildfire Ground failure Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Kantishna Airport Denali National Parks Road Alaska Railroad Parks Highway Railroad Underpass	Accommodate by updating infrastructure and design
Cantwell	Wildfire Earthquake	Relatively Moderate Risk	No Risk Level Assigned	Parks Highway Jack River Bridge	Protect in Place

3.9 Copper River Census Area

Table 13. Copper River Census Area Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

COPPER RIVER CENSUS AREA					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Whole Census Area	Wildfire	See all communities in the Census Area	No Risk Level Assigned	All Transportation Facilities	Protect in Place, provide additional maintenance opportunities, additional road access spots, improve evacuation routes, and increase air transportation facilities
Slana	Flooding - Low	Relatively Low Risk	No Risk Level Assigned	Tok Cutoff Highway Nabesna Road	Protect in Place
Chistochina	Flooding - Low	Relatively Low Risk	Low	Chistochina Airport	Protect in Place
Gulkana	Flooding - Low	Relatively Low Risk	Medium	Richardson Highway Gulkana Airport	Protect in Place
Glennallen	Flooding	Relatively Low Risk*	No Risk Level Assigned	Glenn Highway Richardson Highway Glenn Highway Crossing	Protect in Place

COPPER RIVER CENSUS AREA					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK CATEGORY**	**SNAP ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Copper Center Area	Flooding – Low Erosion	See all communities in the Census Area	Low	Richardson Highway Copper Center Airport Brenwick-Craig Road Edgerton Highway/McCarthy Road Tazlina M&O Station Tazlina River Bridge Klutina River Bridge Old Richardson Highway	Protect in Place
Chitina	Permafrost Flooding - Low	Relatively Low Risk	Medium	Edgerton Highway/ McCarthy Road Copper River Spur	Protect in Place
Tonsina/ Chisnana	Flooding - Low Wildfire	Relatively Low Risk	No Risk Level Assigned	Chisana Airport	Protect in Place
McCarthy	Flooding - Low Erosion Wildfire	Relatively Low Risk	No Risk Level Assigned	Edgerton Highway/McCarthy Road May Creek Airport McCarthy Airport	Protect in Place/ Accommodate

*Hazards for Glennallen Alaska are identified as relatively low risk; this includes flooding events. Although, flooding in Glennallen has become common place in recent years. Many of the flooding events in Glennallen are not documented as FEMA categorized events as they are the result of situations such as log and ice jams, which FEMA does not track.

Table 14. Matanuska-Susitna Borough Hazards, FEMA NRI, SNAP Risk, Facilities at Risk, and Mitigation Strategies

MATANUSKA-SUSITNA BOROUGH CENSUS TRACT 2					
LOCATION	**IDENTIFIED HAZARD(S)**	**FEMA RISK INDEX CATEGORY**	**ASSIGNED PERMAFROST RISK LEVEL**	**FACILITIES AT RISK**	**MITIGATION STRATEGY(S)**
Lake Louise	Avalanche Earthquake	Relatively High Risk	No Risk Level Assigned	Richardson Highway Glenn Highway Lake Louise Airport	Protect in Place/ Accommodate

4.0 RECOMMENDATIONS

4.1 Non-Infrastructure Community-Based Resiliency Efforts

Engaging the local population in a planning process to mitigate disasters will result in better understanding of the potential hazard, historical events, and how the community can best respond to an event until additional help can be deployed. Additionally, HMPs provide an organized method for communities to engage in preparing for events through education and organization, while simultaneously having the minimum requirements met for funding eligibility. This planning process will help to empower the local community, provide clear steps in the event of hazard occurrence, and guide prioritization of infrastructure rehabilitation and repair post event. For DOT&PF, on-going and focused engagement as a partner by encouraging and collaborating, when possible, in HMP development and implementation might include:

- Make sure DOT&PF facilities are accounted for in state, local, and tribal HMPs.
- Lead creation of hazard mitigation plans where communities have no local government.
- Work with local organizations to promote community education on local hazards.
- Facilitate and maintain interagency coordination and community communications for emergency response.
- Invest in the production of rock (rip rap) in areas of high flooding or erosion risk as a preparedness measure not as a response.

During the working group discussion on resiliency and risk, attendees were grouped by geographic regions to identify the location of infrastructure at risk to a hazard event, level of risk to the identified infrastructure, priority, recommended mitigation strategy, and any potential actionable ideas by the breakout group (Appendix 1). The breakout groups identified specific infrastructure, as well as discussed non-infrastructure solutions to better prepare and share knowledge about how to improve community resiliency. The key recommendations identified by the working group attendees included:

- Improve policy regarding preparation for hazard events.
- Include all infrastructure in hazard event planning: homes and local buildings used by all and possibly used for dual purpose during hazard events (grocery stores, libraries, etc.).
- Improve collaboration between government agencies, support organizations, and members of the community through defined communication strategies during hazard events and on-going knowledge-sharing for continuous improvement to response and updating preparation efforts.

4.2 Establish Infrastructure Risk Mitigation Strategies

In a brief working group session, specific infrastructure, location, and level of priority for those community member representatives were quickly established. This preliminary effort is an opportunity to begin prioritizing community infrastructure and the appropriate mitigation strategy, including:

1. Protect in Place: Focuses on engineering solutions that keep the threat at a manageable level while staying in-place (Short to Mid-Term).
2. Accommodate: Enhances the infrastructure in a way that allows the threat to continue but keeps extreme damage from happening (Mid to Long-Term).
3. Managed Retreat: Requires moving infrastructure away from the threat completely, often after attempting other mitigation efforts (Long-Term).

Each mitigation strategy type is an opportunity for DOT&PF to lead the next steps to improve the resiliency of the community through infrastructure improvement.

4.3 Develop Evaluation Criteria for a Resiliency Action Program

As resiliency continues to be a key strategy for DOT&PF's service to Alaskan communities, it is crucial to partner with the local community when determining how a resiliency program should be implemented, including the evaluation criteria to determine actions that will support resiliency of Alaskan's communities. No matter the selected mitigation strategy, evaluating at-risk infrastructure to determine a prioritized program for improvement will help guide next steps in DOT&PF's resiliency efforts.

For all communities within the IATP area, recommended evaluation criteria for prioritizing at-risk infrastructure mitigation should consider:

- Access to the road system.
- One entry/exit access point.
- One transportation mode access point.
- Communities that do not have up-to-date emergency communication systems.
- Improvements to emergency evacuation points.
- Improvements to emergency evacuation aviation facilities for off-road and remote communities.

DOT&PF's infrastructure resiliency efforts are built into current planning that coincide with various state departments, federal agencies, and local government processes. These efforts include HMPs, THMPs, educational outreach, and on-going mitigation strategy implementation. Continued partnerships with community-based programs, focused risk mitigation strategies appropriate to the community's infrastructure risk levels, and consideration of resiliency in statewide action programs are the key elements in executing an effective resiliency strategy for DOT&PF infrastructure.

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APPENDIX 1: RESILIENCY WORKING GROUP MEETING SUMMARY

Working Group Meeting No. 3

Wednesday, August 16, 2023, 10:00 a.m. – 12:00 p.m., via Zoom

Meeting Objective

To provide working group members with an update on the Interior Alaska Transportation Plan (IATP) and discuss resiliency as it is associated with transportation infrastructure within the IATP planning area. The goal is to identify the most prominent risks within the identified planning area and identify key infrastructure locations that are at risk.

Attendees

Name	Organization
Sara Lucey, Project Manager	Department of Transportation and Public Facilities
Brett Nelson, Environmental Manager	Department of Transportation and Public Facilities
Yvonne Adams, Regional Planner	Department of Transportation and Public Facilities
Randi Bailey, Fairbanks Area Planner	Department of Transportation and Public Facilities
Adison Spafford, Commissioner's Office	Department of Transportation and Public Facilities
Jessica Smith, Project Manager	DOWL
Jessica Herceg, Assistant Project Manager	DOWL
Morgan McCammon, Project Communications Lead	DOWL
Jovie Garcia, Project Communications Support	DOWL
Talli Vittetoe, Project Communications Support	DOWL
Kendal Ramage, Transportation Planner	DOWL
Kate Silber, Land Use Planner	DOWL
Joy Huntington, Public Involvement Lead	Uqaqti Consulting
Lindsay Johnson, Public Involvement Support	Uqaqti Consulting
Megan Flory, Community and Sustainability Planner	RESPEC
Marie Schmidt, Environmental Analyst	RESPEC
Jackson Fox, Executive Director	Fairbanks Area Surface Transportation Planning
Erin Shine, Staff	Senator Bishop's Office
Billy Connor, Director	University of Alaska Fairbanks Arctic Infrastructure Development Center
Clay Walker, Mayor	Denali Borough
Don Galligan, Transportation Planner	Fairbanks North Star Borough

Cary Fremin, Director of Health and Social Services	Village of Dot Lake
Sarah Obed, Lands and Natural Resources	Doyon, Limited
Cheyenne Dibert, Government and Rural Affairs Coordinator	Doyon, Limited
Cheyenna Kuplack, Communications Manager	Doyon, Limited
Fred Dahl, Chitina EPA/IGAP Director	Native Village of Chitina
Marina Evans, Transportation Manager	Tanana Chiefs Conference
Melanie Herbert, Executive Director	Gwichyaa Zhee Gwich'in (Fort Yukon) Tribal Government

Agenda

10:00 am	Welcome, Land Acknowledgement, Introductions, Housekeeping	Joy Huntington / Sara Lucey
10:10 am	What is Resiliency in Alaska's Interior Planning Area Transportation?	Joy Huntington / Sara Lucey
10:20 am	Risks to Infrastructure in IATP Planning Area	Kendal Ramage
10:30 am	Resiliency Mitigation Strategies	Jessica Smith
10:40 am	Breakout Group Discussions	Joy Huntington
11:30 am	Reconvene as a Large Group to Discuss	Joy Huntington
11:50 am	Action Items and Next Steps	Joy Huntington

Acronyms

Department of Transportation and Public Facilities	DOT&PF
Fairbanks North Star Borough	FNSB
Bureau of Land Management	BLM
Interior Alaska Transportation Plan	IATP

Summary

Joy Huntington, Uqaqti Consulting, welcomed participants, invited introductions from the project team and participants, reviewed general housekeeping items for Zoom, shared the land acknowledgement, and presented an update on the project schedule.

Joy presented an overview of transportation resiliency in Alaska and welcomed Sara Lucey, Department of Transportation and Public Facilities (DOT&PF) Project Manager, to share her perspective on resiliency. Sara discussed that transportation resiliency in Interior Alaska is a strategic investment area for the Commissioner and a frequent topic of discussion at DOT&PF. There is the need to plan resiliency and mitigation strategies for the next twenty years.

Adison Spafford, Commissioner's Office, asked participants to think about resiliency from an Alaskan perspective and commented that this effort would feed into the statewide resiliency plan. She expressed the need for resiliency plans to be realistic, especially for rural Alaska. She added that the Commissioner's Office has access to a legislative liaison and asked that participants consider topics within resiliency that need to be addressed in the next legislative session.

Joy opened the discussion to participants by asking "What does resilient transportation infrastructure in Interior Alaska look like?"

Clay Walker, Mayor of the Denali Borough, responded that resiliency is both organizational and institutional and added that plans need to be in place for emergencies, as well as appropriate physical infrastructure. What advanced planning have you done as an organization, ready? In terms of infrastructure, engineering, and design, referencing the earthquake 20-years ago, the pipeline was engineered to withstand the 8+ earthquake. Increase the resiliency of infrastructures.

Sarah Obed, Doyon Limited, responded that community communication is important, especially for requesting repairs on roads and infrastructure and when/where it will be scheduled/happen. She emphasized that with position turnover, there needs to be clear guidelines on who oversees various regions within the Interior. She provided an example, Elliott Highway – who's overseeing the region, area, the quality, and attention to road work, ensuring communication is open between DOT&PF and the community.

Adison mentioned FEMA, assisting with funding on repairs. She suggested a policy discussion and is interested in the participants' input.

Cary Fremin, Dot Lake Village, responded that communication is especially important in these situations. Each community is so unique and that community needs are different from each other. Listen to what the communities have to say. Sometimes over-communication is the key, especially in emergency situations, make sure that everyone is on the same page. Sometimes it seems like State and Government Agencies are very siloed and they don't communicate very well to each other which trickles down and doesn't communicate to the communities either. Be more transparent and over-communicate when a situation arises.

Yvonne Adams, DOT&PF Regional Planner (originally from Ruby), shared an example of a fire incident outside of Ruby, where the Bureau of Land Management (BLM) contacted her needing to borrow specialized equipment to help fight the fire. It took a lot of effort, work, and you must be flexible in these situations. There was a lot of communication between her department, BLM, and the tribe. If you don't help each other, you won't survive, there has to be a willingness to be community and tribal minded in the sense of looking out for each other – be a team player.

Kendal Ramage, DOWL Transportation Planner, discussed the 'Risks to Interior Alaska's Transportation Infrastructure.' The project team identified some of the top hazards that exist in the Interior. She provided a basic overview for the following risks:

FLOODING

- Occurs in the spring and summer seasons.
- Rivers and water bodies can't handle the increased amount of water and spill over into infrastructure. Richardson Highway Bear Creek Washout.
- Recent flooding in Glennallen area.

WILDFIRES

- Summers continue to get hotter and drier.
- The heat/fire causes destruction to the infrastructure.
- Fire and thick smoke cause visual impairments to drivers on the road, whether or not the fire is local.
- Wildfire rages cross dirt road of interior Kobe Ag, July of 2022.

PERMAFROST

- Unique to the Alaska climate.
- Freeze/thaw cycle: Ice under roadways and other existing infrastructure undergoes freeze / thaw cycles. Roads become bumpy and creates rutting in the roads.
- Costly to fix, repaving and depending on how deep the permafrost.

EARTHQUAKES

- Seismic activity is frequent in Alaska and infrastructure can become damaged and needs to be planned and ready for.
- Earthquakes creates hazards, avalanches, mudslides, landslides, snow/ice, etc.
- Pipelines in the 2002 Denali Fault Earthquake experienced minor damage because of improved infrastructure.

EROSION

- Dalton Highway wash out is currently happening.
- Rivers continue to get closer to roadways.
- Dredging is a mitigation operation to assist in removing silt from river erosion.

Jessica Smith, DOWL Project Manager, discussed the three Resiliency Mitigation Strategies and Strategies Not Requiring Relocation, responding to risks and how would we approach diverse types of emergency situations:

1. Protect in Place: Focuses on engineering solutions that keep the threat at a manageable level. Prepare for an event and ready to stay where we are (Short to Mid-Term)
2. Accommodate: Enhances the infrastructure in a way that allows the threat to continue but keeps extreme damage from happening. (Mid to Long-Term)
3. Managed Retreat: Requires moving infrastructure away from the threat completely often after attempting other mitigation efforts. (Long-Term)

Breakout Group Discussion & Summaries

Attendees were grouped in a "breakout group" according to representative geography. The geography groupings included:

- Yukon Flats
- Upper Tanana
- Copper River
- Middle Yukon / Fairbanks
- Denali Borough

Each break out group included a facilitator and note taker from the project team. The objective of the breakout was to give smaller groups the opportunity to discuss specific risks to the infrastructure in each respective geographic region.

The breakout groups identified the location of infrastructure at risk to a hazard event, level of risk to the identified infrastructure, priority, recommended mitigation strategy, and any potential actionable ideas by the breakout group. The following summary tables include summaries of the breakout groups' discussions and decisions.

YUKON FLATS: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
Wildfire Wildfire - Closer to the communities	Medium	Roads – Fire could jump road, visibility Communications, utilities	Medium High	Protect in place Managed retreat/protect in place	For all areas, be proactive and promote better policy and coordination with community leadership.
Flooding	High	Roads, equipment, structures	High	Protect in place	Proactively engage in improving policy and fostering collaboration with community leaders.
Erosion	Medium	Homes, structures	High	Accommodate	For all areas, we need to be proactive and promote better policy and coordination with community leadership.
Earthquake	Low	Homes, structures, roads, utilities	High	Protect in place	Proactively engage in improving policy and fostering collaboration with community leaders.
Permafrost	Medium/High	Roads	Medium	Accommodate	Take initiative to enhance policy development and collaboration with community leaders.

UPPER TANANA: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
Wildfire – Dot Lake, Sand Lake	High	Blocks access to Tok, major medical center, no other access around	High	Close contact with Forestry, weather, and wind information. Structured and appropriate community communication - few homes have phones.	Small camp monitoring fires.
Flooding	Undecided	Johnson River and Roberson River Bridges – would be cut off from health care and goods/services if inaccessible	High	Accommodate	Replace older bridges.
Emergency Communication Systems	Undecided	Unknown	Undecided	Unknown	Track lessons learned; Share as much information as possible.

COPPER RIVER: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
Flooding O'Brien and Hidden Creek near the Edgerton Highway Glennallen Copper River	Medium to high risk – flooding occurs annually, but not to the extent experienced this past year.	Recent culverts were added to protect existing infrastructure.	High priority	Protect in Place Accommodate	Undecided.
Erosion Copper `River McCarthy Road to Kennecott	Low to medium risk	Highway comes close to the river in several locations and creates undercutting and severe drainage problems. Weak points in the asphalt due to annual freeze/ that cycles.	High priority – one highway in and out of communities	Protect in Place Accommodate	Undecided.
Wildfires	High risk	Limited emergency transportation access via road or air. Poor air quality due to smoke.	Low to medium priority	Protect in Place	Additional maintenance opportunities. Additional road access spots. Improved evacuation routes. Air transportation facilities.

MIDDLE YUKON / FAIRBANKS: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
Wildfire (random), all throughout Interior.	High	Active fires on Elliott and Richardson Hwy, main highways. Structure	High	Accommodate	Bury power/communication lines, underground, less risk to

MIDDLE YUKON / FAIRBANKS: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
Climate change, lightning strikes, challenges with access to the large-remote areas, high winds		protection – overhead powerlines, communications (cut off). Yearly fires in the Anderson areas.			the fires. Actively clearing the brush to wider area – fire break to prevent jumping the hwy. Develop an evacuation plan/strategy – where to go, what to do.
Earthquake	High	Deficient bridges that may not hold earthquakes. Anything built on fill – review/develop construction methods on fill sites.	High	Accommodate	Replace bridge, earthquake seismic retrofits.
Bridges	High	Yearly construction on bridges – repairing cracks on major bridges.	High	Accommodate	Assessment and Maintenance.
Flooding	High	Circle area damage. Impacts to housing.	High	Accommodate	Plan and prepare in the rural villages. Review the standards for flooding elevation (2-3 ft).
Permafrost	High	Building homes – needs assistance with where/how to build these homes. Roadways – continue to be built in these areas, cannot get away from it. I.e., Chena Hot Springs Rd, Old Steese Hwy (yearly frost heaves, summer dips)	High	Accommodate	Plan and prepare in the rural villages. Doyon supports planning groups – Climate change and mitigation programs to help prevent. DOT&PF yearly overlays asphalt in the dips.
Erosion	High	Riverbanks	Undecided	Accommodate Protect in Place	Plan and prepare in the rural villages

DENALI BOROUGH: HAZARD AND INFRASTRUCTURE RISK AND PRIORITY IDENTIFICATION					
IDENTIFY HAZARD	**RISK LEVEL**	**IDENTIFY INFRASTRUCTURE**	**PRIORITY LEVEL**	**MITIGATION STRATEGY**	**POTENTIAL ACTION**
LANDSLIDE @ Nenana River/Canyon	Medium/High	HWY/Rail	Undecided	Unknown	Unknown
MUDSLIDE	Medium/High	Unknown	Undecided	Unknown	Unknown
AVALANCHE	Undecided.	Power	Undecided	Unknown	Unknown
Earthquake	Medium	Glitter Gulch Bridge	High	Accommodate	Infrastructure and Design
Flooding	High	Dry Creek Infrastructure	Undecided	Accommodate	Gravel extraction
Ice Jams, Anderson	High	Community of Anderson Dyke	Undecided	Protect in Place	M&O Asset Management?
Wildfires	Medium/High	Unknown	Undecided	Protect in Place	Community programs? Awareness? Collaboration with federal

APPENDIX 2: FEMA NATIONAL RISK INDEX

YUKON FLATS & MIDDLE YUKON/FAIRBANKS SUBREGION

YUKON FLATS

Yukon-Koyukuk Census Tract 1 – 02290000100

COMMUNITIES INCLUDED: Arctic Village, Venetie, Beaver, Fort Yukon, Chalkyitsik, Birch Creek, Circle, Central						
Social Vulnerability: Very High Community Resilience: Very Low Community Risk Factors: 1.76						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Flooding	$373,638	$659,259	1.5 events	36	1996-2019 (24 years)	97.4
Wildfire	$276,823	$488,439	0.722% chance	N/A	2021 Dataset	98.1
Cold Wave	$123,543	$217,983	.9 events	15	2005-2021 (16 years)	99.4
Avalanche	$61,612	$108,710	0 events	1	1960-2019 (60 years)	38.9
Earthquake	$15,136	$26,706	.266% chance	N/A	2021 Dataset	64.3
Winter Weather	$2,065	$3,644	4.2 events	69	2005-2021 (16 years)	68
Ice Storm	$140	$246	0 events	1	1946-2014 (67 years)	8.9

Risk Index

The risk index for Y-K Census Tract 1 identified from the FEMA NRI report generated in 2023 was 81.24 which FEMA considers a "relatively moderate" risk index. This overall risk index considers the risk index assigned for all identified hazards for Y-K Census Tract 1.

Social Vulnerability

Census Tract 1 in the Y-K census area is identified as having a social vulnerability score of 88.99 which is categorized as very high susceptibility to facing adverse impacts following a natural hazard.

Community Resilience

Y-K Census Tract 1 received a community resilience score of 0.95, which indicates a very low ability to prepare, adapt, and rebound from changing conditions. This community resilience score is lower than 97 percent of census tracts across Alaska.

YUKON FLATS/MIDDLE YUKON

Yukon-Koyukuk Census Tract 2 – 02290000200

COMMUNITIES INCLUDED: Coldfoot, Stevens Village, Livengood, Rampart, Minto, Nenana, Four Mile Road, Manley Hot Springs, Tanana						
Social Vulnerability: Very High Community Resilience: Very Low Community Risk Factors: 1.76						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Flooding	$845,612	$1,487,760	1.5 events	36	1996-2019 (24 years)	98.9
Wildfire	$247,947	$435,720	0.832% chance	N/A	2021 Dataset	97.9
Avalanche	$61,612	$108,271	0 events	1	1960-2019 (60 years)	38.7
Earthquake	$60,461	$106,248	0.531% chance	N/A	2021 Dataset	78.2
Cold Wave	$37,616	$66,103	.6 events	10	2005-2021 (16 years)	96.1
Winter Weather	$3,191	$5,608	4.9 events	80	2005-2021 (16 years)	76.2
Ice Storm	$191	$336	0	1	1946-2014 (67 years)	11.6

Risk Index

The risk index for Y-K Census Tract 2 identified from the FEMA NRI report generated in 2023 was 88.9, which FEMA considers as relatively moderate. This identified risk index considers the risk index scores assigned to all identified hazards within the census tract.

Social Vulnerability

Census Tract 2 in the Y-K census area is identified as having a social vulnerability score of 88.67, which is categorized as very high susceptibility to facing adverse impacts following a natural hazard.

Community Resilience

Y-K Census Tract 2 is identified as having a very low ability to prepare, adapt, and rebound from changing conditions by having a community resilience score identified as 0.95. This community resilience score is lower that 99 percent of community resilience scores for census tracts across the U.S. and 97 percent of census tracts across Alaska.

MIDDLE YUKON/FAIRBANKS

Fairbanks North Star Borough

COMMUNITIES INCLUDED: Fairbanks, North Pole, Fort Wainwright, Eielson AFB						
Social Vulnerability: Relatively Moderate Community Resilience: Relatively Moderate Community Risk Factors: 1.08						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Wildfire	$11,056,562	$10,895,490	0.997% chance	N/A	2021 Dataset	97.9
Earthquake	$8,551,433	$10,338,607	0.632% chance	N/A	2021 Dataset	95
Cold Wave	$1,119,510	$1,251,367	0.2 events	3	2005-2021 (16 years)	94.6
Flooding	$603,367	$631,564	1.1 events	27	1996-2019 (24 years)	56.3
Ice Storm	$9,558	$10,829	0 events	1	1946-2014 (67 years)	19.6
Winter Weather	$2,646	$2,955	3.4 events	55	2005-2021 (16 years)	4.7

Risk Index

The risk index for Fairbanks North Star Borough (FNSB) identified from the FEMA NRI report generated in 2023 was 82.4 which FEMA considers as "relatively low risk." This overall risk index considers the risk index scores assigned for all identified hazards for FNSB.

Social Vulnerability

FNSB is identified as having a social vulnerability score of 52.64 which is categorized as relatively moderate susceptibility to facing adverse impacts following a natural hazard.

Community Resilience

FNSB received a community resilience score of 51.69 which is categorized as relatively moderate. This reflects FNSB being relatively moderate in their ability to prepare, adapt, and rebound to changing conditions.

UPPER TANANA SUBREGION

The Upper Tanana Subregion considers the Southeast Fairbanks Census Area (SE FBX), which is identified as 022400 and is composed of multiple Census Tracts, two of which contain communities identified within the limits of the IATP area. These Census Tracts were identified as Census Tract 1 and Census Tract 4 and are represented by 02240000100 and 02240000400. Although both Census Tracts are within the same regional Census Area, they are represented by different risk indexes, EALs, social vulnerabilities, and community resilience scores.

Southeast Fairbanks Census Tract 1 – 02240000100

COMMUNITIES INCLUDED: Eagle, Eagle Village, Chicken, Northway, Alcan Boarder, Tetlin, Tok, Tanacross, Dot Lake, Dot Lake Village, Dry Creek						
Social Vulnerability: Relatively High Community Resilience: Very Low Community Risk Factors: 1.42						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Wildfire	$1,602,113	$2,273,191	1.28% chance	N/A	2021 Dataset	99.7
Avalanche	$485,151	$688,366	0.1 events	6	1960-2019 (60 years)	80
Earthquake	$47,745	$67,745	0.560% chance	N/A	2021 Dataset	74.8
Cold Wave	$7,087	$10,056	0.3 events	4	2005-2021 (16 years)	76.8
Ice Storm	$173	$245	0 events	0	1946-2014 (67 years)	8.9
Winter Weather	$49	$70	3.4 events	55	2005-2021 (16 years)	20.8

Risk Index

The risk index for SE FBX Census Tract 1 identified from the FEMA NRI report generated in 2023 was 93.4, which FEMA categorizes as “relatively high risk.” This overall risk index considers the risk index assigned for all identified hazards for SE FBX Census Tract 1.

Social Vulnerability

SE FBX Census Tract 1 is identified as having a social vulnerability score of 72.57 which is categorized as “relatively high susceptibility” to facing adverse impacts following a natural hazard.

Community Resilience

SE FBX Census Tract 1 received a community resilience score of 6.8, which indicates a very low ability to prepare, adapt, and rebound from changing conditions.

Southeast Fairbanks Census Tract 4 – 02240000400

COMMUNITIES INCLUDED: Healy Lake, Deltana, Fort Greely, Delta Junction, Big Delta, Whitestone						
Social Vulnerability: Relatively High Community Resilience: Very Low Community Risk Factors: 1.42						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Wildfire	$2,797,342	$3,977,719	0.533% chance	N/A	2021 Dataset	99.9
Avalanche	$485,151	$689,867	0.1 events	6	1960-2019 (60 years)	80.2
Earthquake	$439,165	$624,476	0.886% chance	N/A	2021 Dataset	88
Flooding	$233,017	$331,342	0.7 events	17	1996-2019 (24 years)	94.6
Cold Wave	$12,111	$17,221	0.3 events	5	2005-2021 (16 years)	83.8
Ice Storm	$391	$557	0 events	0	1946-2014 (67 years)	17.4
Winter Weather	$79	$112	3.9 events	63	2005-2021 (16 years)	22.7

Risk Index

The risk index for SE FBX Census Tract 4 identified from the FEMA NRI report generated in 2023 is 98.1, which FEMA categorizes as “very high risk.” This overall risk index considers the risk index assigned for all identified hazards for SE FBX Census Tract 4.

Social Vulnerability

SE FBX Census Tract 4 is identified as having a social vulnerability score of 72.8, which is categorized as “relatively high susceptibility” to facing adverse impacts following a natural hazard.

Community Resilience

SE FBX Census Tract 4 received a community resilience score of 6.8, which indicates a “very low” ability to prepare, adapt, and rebound from changing conditions.

DENALI BOROUGH SUBREGION

The Denali Borough considers the Denali Bough Census Area and the Yukon-Koyukuk Census Tract 4. The Denali Borough is its own Census Area that contains a single Census Tract identified as 02068000100. This Census Tract represents Anderson, Healy, Ferry, Denali Park, and Cantwell.

Denali Borough Census Area

COMMUNITIES INCLUDED: Anderson, Healy, Ferry, Denali Park, Cantwell						
Social Vulnerability: Relatively Moderate Community Resilience: Very Low Community Risk Factors: 1.09						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Avalanche	$758,667	$824,561	0.2 events	10	1960-2019 (60 years)	82.5
Wildfire	$557,069	$605,453	0.529% chance	N/A	2021 Dataset	98.5
Earthquake	$332,497	$361,375	1.20% chance	N/A	2021 Dataset	84.9
Cold Wave	$4,389	$4,770	0.2 events	3	2005-2021 (16 years)	67.1
Ice Storm	$153	$166	0 events	0	1946-2014 (67 years)	6.3
Winter Weather	$35	$39	3.2 events	51	2005-2021 (16 years)	19

Risk Index

The risk index for the Denali Borough census area identified from the FEMA NRI report generated in 2023 is 85.1, which FEMA categorizes as “relatively moderate risk.” This overall risk index considers the risk index assigned for all identified hazards for the Denali Borough census area.

Social Vulnerability

The Denali Borough census area is identified as having a social vulnerability score of 41.7, which is categorized as “relatively moderate susceptibility” to facing adverse impacts following a natural hazard.

This social vulnerability score of 41.7 is the highest seen across all areas analyzed within the IATP area. Some factors that contribute to boosting this score include mitigation programs in place, the existing HMP, and active and educated community.

Community Resilience

The Denali Borough census area received a community resilience score of 11.8, which indicates a very low ability to prepare, adapt, and rebound from changing conditions.

Yukon-Koyukuk Census Tract 4 – 02290000400

COMMUNITIES INCLUDED: Lake Minchumina						
Social Vulnerability: Very High Community Resilience: Very Low Community Risk Factors: 1.83						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Wildfire	$158,697	$290,677	0.812% chance	N/A	2021 Dataset	97
Flooding	$117,263	$214,784	1.5 events	36	1996-2019 (24 years)	91.9
Avalanche	$61,612	$112,851	0 events	1	1960-2019 (60 years)	39.8
Earthquake	$12,387	$22,689	0.582% chance	N/A	2021 Dataset	61.5
Cold Wave	$5,356	$9,810	0 events	0	2005-2021 (16 years)	76.5
Winter Weather	$3,058	$5,651	6.1 events	99	2005-2021 (16 years)	76.3
Ice Storm	$135	$247	0 events	0	1946-2014 (67 years)	8.9

Risk Index

The risk index for Y-K Census Tract 4 identified from the FEMA NRI report generated in 2023 was 57.4, which FEMA considers as "relatively low risk". This overall risk index considers the risk index assigned for all identified hazards for Y-K Census Tract 4.

Social Vulnerability

Census Tract 4 in the Y-K census area is identified as having a very high susceptibility to facing adverse impacts following a natural hazard. Although the social vulnerability category assigned is equal to that of Y-K Census Tracts 1 and 2, this social vulnerability score (92.04) is higher than those identified in both Census Tracts 1 and 2 for the same Census Area.

Community Resilience

Census Tract 4 in the Yukon-Koyukuk Census Area is identified as having a very low ability to prepare, adapt, and rebound from changing conditions by having a community resilience score identified as 0.95. This community resilience score is lower that 99 percent of community resilience scores for Census Tracts across the U.S. and 97 percent of Census Tracts across Alaska.

COPPER RIVER SUBREGION

A single Census Tract within the Copper River Census Area contains all of Copper River Census Area and communities identified within the IATP study area. This Census Tract is Census Tract 1 identified as 02066000100.

Copper River Census Area

COMMUNITIES INCLUDED: Paxson, Mentasta Lake, Slana, Chistochina, Nabesna, Gakona, Glennallen, Gulkana, Tolsona, Mendeltna, Nelchina, Tazlina, Copper Center, Silver Springs, Willow Creek, Kenny Lake, Tonsina, Chitina, Chisana, McCarthy						
Social Vulnerability: Relatively High Community Resilience: Relatively Moderate Community Risk Factors: 1.27						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (Per Year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Earthquake	$255,829	$324,972	.905% chance	N/A	2021 Dataset	84.3
Wildfire	$94,825	$120,453	.076% chance	N/A	2021 Dataset	94.4
Avalanche	$36,967	$46,958	0 events	0	1960-2019 (60 years)	8
Volcanic Activity	$28,373	$36,042	0 events	1	9310BC – 2022 (11331 years)	54
Winter Weather	$1,915	$2,433	1 event	16	2005-2016 (16 years)	59.7
Ice Storm	$460	$584	0 events	0	1946-2014 (67 years)	18.1

Risk Index

The risk index for the Copper River census area identified from the FEMA NRI report generated in 2023 is 50, which FEMA categorizes as “relatively low risk.” This overall risk index considers the risk index assigned for all identified hazards for the Copper River census area.

Social Vulnerability

The Copper River census area is identified as having a social vulnerability score of 66.2, which is categorized as “relatively high susceptibility” to facing adverse impacts following a natural hazard.

Community Resilience

The Copper River Census Area was identified as having a community resilience score of 58.9, which is identified as being “relatively moderate” in the ability to prepare, adapt, and rebound from changing conditions.

Matanuska-Susitna Borough

A single community, identified as Lake Louise, within the IATP study area exists within the Matanuska-Susitna (Mat-Su) Borough. This community is found within Census Tract 2, identified as 02170000102. This Census Tract contains other communities such as Talkeetna, which borders Denali State Park and is not included within the IATP area. For consistency and due to the size of the community of Lake Louise, viewing the National Risk Index scores through the lens of the Census Tract was most beneficial.

Matanuska-Susitna Census Tract 2

COMMUNITIES INCLUDED: Lake Louise						
Social Vulnerability: Relatively Moderate Community Resilience: Very Low Community Risk Factors: 1.14						
Hazard	**Expected Annual Loss**	**Risk Value**	**Estimated Annualized Frequency (per year)**	**Historical Occurrence**	**Period of Record Provided**	**Risk Index Score**
Avalanche	$1,823,094	$2,083,478	0.4 events	25	1960-2019 (60 years)	94.9
Earthquake	$712,008	$814,843	1.11% chance	N/A	Based on 2021 Data	89.7
Flooding	$237,590	$271,524	0.3 events	7	1996-2019 (24 years)	93.5
Wildfire	$71,396	$81,593	0.051% chance	N/A	Based on 2021 Data	93.1
Ice Storm	$317	$363	0 events	0	1946-2014 (67 years)	12.4
Winter Weather	$77	$87	2.2 events	35	2005-2021 (16 years)	21.7

Risk Index

The risk index for Mat-Su Census Tract 2 identified from the FEMA NRI report generated in 2023 is 94.2, which FEMA categorizes as “relatively high risk.” This overall risk index considers the risk index assigned for all identified hazards for Mat-Su Census Tract 2.

Social Vulnerability

Mat-Su Census Tract 2 is identified as having a social vulnerability score of 47 which is categorized as “relatively moderate susceptibility” to facing adverse impacts following a natural hazard.

Community Resilience

Mat-Su Census Tract 2 received a community resilience score of 4.4, which indicates a very low ability to prepare, adapt, and rebound from changing conditions.

APPENDIX 3: SNAP PERMAFROST RISK ASSESSMENT TABLE

SNAP conducted permafrost risk assessments for communities in rural Alaska, many of which are found within the IATP area.

SNAP Permafrost Risk Levels for Specified IATP Area Communities

Community	Massive Ice	Thaw Susceptibility	Existing Problems	Occurrence	Temp.	Rating	Assigned Permafrost Risk Level
Chistochina	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Chitina	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Copper Center	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Gakona	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Gulkana	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Mentasta Lake	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Tazlina	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Eagle	Sparse: Ice wedges & buried ice (2)	Medium (2)	Moderate (2)	Discontinuous (2)	Cool (2)	10	Medium
Northway	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Discontinuous (2)	Warm (3)	8	Low
Tanacross	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Tetlin	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Discontinuous (2)	Warm (3)	8	Low
Arctic Village	Sparse: Ice wedges & buried ice (2)	Medium (2)	Moderate (2)	Continuous (3)	Cool (2)	11	Medium
Beaver	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Birch Creek	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Discontinuous (2)	Warm (3)	8	Low
Chalkyitsik	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Discontinuous (2)	Warm (3)	8	Low
Circle	Sparse: Ice wedges & buried ice (2)	High (3)	Moderate (2)	Continuous (3)	Warm (3)	13	High
Fort Yukon	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Minto	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Manley Hot Springs	Sparse: Ice wedges & buried ice (2)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	11	Medium
Nenana	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Isolated (1)	Warm (3)	7	Low
Rampart	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Continuous (3)	Warm (3)	11	Medium
Stevens Village	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Tanana	Absent: No massive ice (1)	Medium (2)	Moderate (2)	Discontinuous (2)	Warm (3)	10	Medium
Venetie	Absent: No massive ice (1)	Low (1)	Minimal or Minor (1)	Discontinuous (2)	Warm (3)	8	Low

Section Seven

Funding and Implementation

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Purpose of the Memorandum 1
1.2 Goals and Objectives of the IATP 3

2.0 FUNDING OPPORTUNITIES AND SOURCES 5

2.1 Funding Overview 5
2.2 Community Funding Opportunities 6
2.2.1 CTP – Community Transportation Program | Remote Communities and Urban and Rural Communities 6
2.2.2 TAP – Transportation Alternatives Program 6
2.2.3 SIRA – Safe Ice Roads for Alaska 6
2.2.4 CWTP – Community Winter Trails Program 6
2.3 Internal DOT&PF Funding Programs 6
2.4 Funding Opportunities Through Federal and State Partners 7
2.5 Tribal Funding Opportunities 8
2.6 Discretionary Federal Grants and Programs 8
2.7 Technical Resources 9

3.0 HISTORICAL FUNDING 10

3.1 Aviation Funding 10
3.2 Surface Transportation Funding 11
3.2.1 CTP 11
3.2.2 TAP 12
3.2.3 SIRA 12
3.2.4 Overall Funding 13

4.0 UNDERSTANDING THE ISSUES AND NEEDS 16

4.1 Aviation 16
4.2 Surface Transportation 17
4.3 Resiliency 17
4.4 Riverine 18
4.5 Maintenance and Operations 18
4.6 Other Agency Needs 18
4.6.1 Denali Commission 18
4.6.2 Alaska Railroad Corporation 18
4.6.3 Fairbanks Area Surface Transportation Planning 19

5.0 HIGH INTEREST INVESTMENT AREAS AND PROJECTS BY SUBREGION AND MODE 20

5.1 High Interest Investment Areas 20
5.2 High Interest Projects 20
5.3 Region Wide 20
5.3.1 High Interest Investment Areas 20
5.3.2 High Interest Projects 21
5.4 Yukon Flats 21
5.4.1 High Interest Investment Areas 21
5.4.2 High Interest Projects 22

5.5 Middle Yukon/Fairbanks 22
5.5.1 High Interest Investment Areas 22
5.5.2 High Interest Projects 23
5.6 Upper Tanana 23
5.6.1 High Interest Investment Areas 23
5.6.2 High Interest Projects 24
5.7 Denali 25
5.7.1 High Interest Investment Areas 25
5.7.2 High Interest Projects 26
5.8 Copper River 29
5.8.1 High Interest Investment Areas 29
5.8.2 High Interest Projects 29

FIGURES

Figure 1 Interior Alaska Transportation Plan Sub Regions 2

TABLES

Table 1 Funding Categories, Funding Available, and Number of Grants and Programs 9
Table 2 AIP Investment in IATP Airports (Nonprimary Facilities Only) 10
Table 3 TAP Funding Available 2016-2022 12
Table 4 SIRA Funding Awarded 2022-2024 13
Table 5 Funds Expanded in the IATP Area 14
Table 6 FLAP Funds Authorized FY13-22 15
Table 7 FLAP Funds Expended in IATP Area FY20-22 15

APPENDICES

Appendix 1: FHWA Tribal Funding Opportunities
Appendix 2: Comprehensive List of Discretionary Grants
Appendix 3: Denali Commission Needs
Appendix 4: Alaska Railroad Corporation Needs and Projects
Appendix 5: FAST Planning Metropolitan Transportation Plan, Needs and Projects
Appendix 6: All IATP Needs and Projects
Appendix 7: Waysides Needs and Projects

ACRONYMS

ADA	Americans With Disabilities Act
AIP	Airport Improvement Program
AML	Alaska Municipal League
ARRC	Alaska Railroad Corporation
BIL	Bipartisan Infrastructure Law
CTP	Community Transportation Program
CWTP	Community Winter Trails Program
DOT&PF	Alaska Department of Transportation and Public Facilities
FAA	Federal Aviation Administration
FAST Planning	Fairbanks Area Surface Transportation, Metropolitan Planning Organization
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLAP	Federal Lands Access Program
FTA	Federal Transit Administration
FY	Fiscal Year
HSIP	Highway Safety Improvement Program
IATP	Interior Alaska Transportation Plan
M&O	Alaska Maintenance and Operations
Memo	Memorandum
MPA	Metropolitan Planning Authority
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
NOFO	Notice of Funding Opportunity
NPIAS	National Plan of Integrated Airport Systems
RPO	Regional Planning Organization
SIRA	Safe Ice Roads for Alaska
STBG	Surface Transportation Block Grant
TAP	Transportation Alternatives Program
TRAAK	Trails and Recreation Access for Alaskans
UAS	Unmanned Aerial Systems
USDOT	United States Department of Transportation
USPS	United States Postal Service
WFLHD	Western Federal Lands Highway Division

1.0 INTRODUCTION

1.1 Purpose of the Memorandum

This Technical Memorandum (memo) provides information and guidance on potential funding mechanisms for capital projects and transportation programs at federal, state, and regional levels. It also highlights high-interest investment areas and project needs identified in the Interior Alaska Transportation Plan (IATP) area. The two main themes of this memo, funding and implementation, are presented as potential funding sources, historical funding, and the identification of key needs, investment areas, and projects to address these needs.

This memo's potential funding sources section provides a general overview of funding allocated to the State of Alaska for transportation needs and how allocated funds are expended. It looks at funding sources and funding use and identifies potential programs available to provide funds for transportation projects and programs in Alaska and the IATP area.

The historical funding portion of this memo establishes the funding expended in the IATP area since the 2010 IATP. Additionally, this historical funding portion allows a look at the capital projects completed in the IATP area since the 2010 plan. This analysis of historical funding and comparison of projects completed from the 2010 IATP allows insight into the efficiency of this regional plan as a guide for statewide projects. It identifies legacy projects that will be included in the IATP update.

In the implementation section of this memo, the high-interest investment areas and projects that address the needs of the IATP area are identified. These areas, needs, and projects have been identified throughout the planning process and the subsequent Technical Memos. High-interest projects are presented for each identified subregion (Figure 1) and have been identified with their targeted transportation mode and the goals the project intends to meet. As the IATP is not a fiscally constrained plan, projects do not have accompanying cost estimates.

Figure 1. Interior Alaska Transportation Plan Sub Regions

1.2 Goals and Objectives of the IATP

The following goals and objectives have been established for the IATP based on input from stakeholders and key agencies. These goals and objectives are informed by the goals and objectives from the 2010 IATP, the Statewide Long Range Transportation Plan, the Federal Planning Factors, and community needs.

Goal 1 – Support Economic Vitality

Support the economic vitality of the State metropolitan and non-metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency. Prioritize projects that support, protect, or enhance economic development.

- **Objective 1A:** Facilitate access to mineral resources when economically feasible and supported by local communities.
- **Objective 1B:** Support upgrades to roads, bridges, and airports to meet industry needs.
- **Objective 1C:** Support Alaska Railroad Corporation improvements and expansion to facilitate economic development.
- **Objective 1D:** Support access from rural communities to the State transportation system.
- **Objective 1E:** Support the continued existence of backcountry airstrips, which serve an important role in the area economy as well as provide emergency landing areas.
- **Objective 1F:** Minimize transportation system directional flow imbalance by developing backhaul potential.
- **Objective 1G:** Maximize the potential of scenic byway programs to increase tourism.
- **Objective 1H:** Upgrade airport facilities for the design aircraft, appropriate level of instrument approach, and forecast demand.

Goal 2 – Health, Safety, and Security

Improve the overall Interior regional transportation system to support the health, safety, and security of residents and visitors and for all motorized and non-motorized travelers.

- **Objective 2A:** Eliminate at-grade railroad crossings were practicable and provide adequate safety features where at-grade crossings are unavoidable.
- **Objective 2B:** Continue to implement on dust control measures where appropriate and practicable on transportation facilities.
- **Objective 2C:** Work with villages in increase trail marking on inter-village trails and roads where desired.
- **Objective 2D:** Provide rest stops or waysides along highways at reasonable intervals, and provide appropriate notice (wayfinding signage etc.,) of the presence of rest stops and waysides.
- **Objective 2E:** Promote projects that help to provide Interior communities with usable and safe access to clean water and basic sanitation.
- **Objective 2F:** Evaluate highway vertical and horizontal alignments, accident statistics, and pavement design to address existing deficiencies in the transportation system.
- **Objective 2G:** Implement the National Highway Safety Improvement Program and the Strategic Highway Safety Plan, including goals for accommodating pedestrians and bicyclists.
- **Objective 2H:** Identify and work to address potential conflicts between civilian and military aviation.
- **Objective 2I:** Identify solutions to aviation problems such as improved weather information, navigation aids, and instrument approaches.

Goal 3 – Accessibility and Mobility for People and Freight

Continue to provide accessibility and mobility options for both people and freight throughout the Interior.

- **Objective 3A:** Continue to support transportation projects included in the Denali Access System Priority List.
- **Objective 3B:** Continue partnerships with local Tribal governments to coordinate use of BIA funds.
- **Objective 3C:** Encourage National Scenic Byway System designation to increase funding opportunities for highway improvements and enhancements.
- **Objective 3D:** Recommend appropriate inclusions and exclusions of airports in the National Plan of Integrated Airport Systems (NPIAS).
- **Objective 3E:** Maximize the use of competitive discretionary funding streams to support development and improvement of transportation infrastructure in the Interior.

Goal 4 – Preserve and Enhance the Existing Transportation System

Emphasize preservation and enhancement of the existing transportation facilities to prolong their life.

- **Objective 4A:** Implement programs to address deficient highways and bridges.
- **Objective 4B:** Improve pavement structures to reduce the need for seasonal weight restrictions.
- **Objective 4C:** Extend the life of existing pavement.
- **Objective 4D:** Promote access management strategies along State owned highway corridors.
- **Objective 4E:** Promote land use compatibility and unobstructed airspace around airports to maintain safe operating conditions and allow for future growth.
- **Objective 4F:** Promote airfield system preservation projects (i.e., surface and lighting) and surface preservation projects.

Goal 5 – Intermodal Connectivity

Provide efficient and cost-effective regional transportation facilities that promote connection between modes and support multiple transportation modes. Promote efficient transportation system management and operations and enhance the integration and connectivity of the system.

- **Objective 5A:** Use “life cycle costs” financial analysis to determine the trade-offs in capital investments to minimize ongoing operating and maintenance costs.
- **Objective 5B:** Maintain or acquire rights-of-way for future access corridors.
- **Objective 5C:** Support multimodal connectivity projects for people and freight.
- **Objective 5D:** Support transit projects within and between Interior communities and areas outside the region.
- **Objective 5E:** Review gaps and overlaps in service area coverage in the system of public use airports; identifying minimum facility and service improvements needed for airports, based on their roles within the system.

2.0 FUNDING OPPORTUNITIES AND SOURCES

2.1 Funding Overview

TRANSPORTATION INVESTMENTS

Transportation investments are funded from private, state, and federal funding. Federal investment is drawn from multiple sources, which are appropriated by Congress to the United States Department of Transportation (USDOT) and authorized through transportation programs based on national priorities. From there, the USDOT and its operating administrations provide fundings for programs to invest in transportation infrastructure, safety, and innovation across the United States[1].

THE BIPARTISAN INFRASTRUCTURE LAW (BIL)

The Bipartisan Infrastructure Law (BIL), signed into law in November 2021, is the most significant long-term infrastructure investment in United States' history. It provides $550 billion over fiscal years 2022 through 2026 in new Federal investment in infrastructure, including transportation infrastructure[2]. BIL dedicates the most considerable portions of its investment to bridges ($40bn), the Infrastructure for Rebuilding America (INFRA) Program ($8bn), Rebuilding American Infrastructure Sustainably and Equitably (RAISE) grants ($7.5bn), and National Infrastructure Project Assistance ($5bn)[3].

FORMULA GRANTS

Formula grants are the most common way to distribute federal transportation funding. The USDOT distributes these funds to States, federally recognized Tribal recipients, and transit agencies. The recipient (State, Tribal, or agency) of the USDOT funds may further allocate their funds to localities at their discretion. One of the most prominent formula funding programs is the Federal-Aid Highway Program, which apportions funding to state departments of transportation by formula, and the Urbanized Area Formula Grants that fund transit capital and operating assistance. Formula Grants for Rural Areas provide capital, planning, and operating assistance to states and federally recognized tribes to support public transportation in rural areas[4].

DISCRETIONARY GRANT PROGRAMS

In addition to formula grant funding programs, USDOT administers competitive discretionary grant programs through their operating administrations and the Office of the Secretary of Transportation. Each operating agency (e.g., Federal Highway Administration (FHWA), Federal Transit Administration (FTA)) solicits applications through a Notice of Funding Opportunity (NOFO) and selects projects based on program eligibility, evaluation criteria, and departmental or program priorities.

STATE FUNDING

State funds are used to fund capital projects, as match funds for federally funded projects, to maintain the transportation system, and for transportation system operations. State funding is allocated every fiscal year to maintain and operate the transportation system[5].

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[1] *https://www.transportation.gov/grants/dot-navigator/overview-funding-and-financing-usdot*

[2] *https://www.fhwa.dot.gov/bipartisan-infrastructure-law/*

[3] *Alaska Federal Funding, Transportation Funding Opportunity Hub*

[4] *https://www.transportation.gov/grants/dot-navigator/overview-funding-and-financing-usdot*

[5] *https://publicinput.com/Customer/File/Full/eaf4a719-5016-44b7-ac4a-99f5f1d6ca46*

State transportation funding sources in Alaska include:

- State motor fuel taxes: revenue generated from state-level taxes on gasoline and diesel.
- Vehicle rental tax: fees collected from vehicle rentals within the state.
- General fund: The State of Alaska's primary operating fund.

2.2 Community Funding Opportunities

State programs in Alaska that are available to communities include the Community Transportation Program (CTP), Transportation Alternatives Program (TAP), Safe Ice Roads for Alaska (SIRA), and Community Winter Trails Program (CWTP). The following programs are federally funded and administered by the Alaska Department of Transportation and Public Facilities (DOT&PF) locally.

2.2.1 CTP – Community Transportation Program | Remote Communities and Urban and Rural Communities

The CTP is a competitive surface transportation program with a call for applications held every three years and administrated by DOT&PF. The Remote Communities opportunity is available to communities not connected to the road system by direct road connection or ferry. All other communities are considered part of the Urban and Rural communities' opportunity. The allocated grant amount for the state is $15 million (total CTP grant amount), and the most recent call for projects was in 2023.

2.2.2 TAP – Transportation Alternatives Program

The TAP funds set-aside from the Surface Transportation Block Grant (STBG) Program provides funding for a variety of small-scale transportation projects such as non-motorized facilities, construction of turnouts, overlooks and viewing areas, community improvements such as historic preservation and vegetation management, environmental mitigation for stormwater, habitat connectivity, recreational trails, Safe Routes to School projects, and vulnerable road user safety assessments. The total award amount is $5 million, and the last call for projects was in early 2022.

2.2.3 SIRA – Safe Ice Roads for Alaska

This competitive grant opportunity provides reimbursement-based funding from DOT&PF to Alaska's Tribes, cities, boroughs, and local organized governments for ice roads. Funding can be used for the development, maintenance, and operations of seasonal ice roads. The program is intended to be an annual program with an estimated total funding of $4 million and all projects require a 9.03 percent local match.

2.2.4 CWTP – Community Winter Trails Program

The CWTP is available to provide funding and support to rural communities to mark public winter trails. The CWTP aims to facilitate connections between rural communities, public roads and/or highways, and public use areas through the support for installation of high visibility trail markers.

2.3 Internal DOT&PF Funding Programs

The following are programs identified for State-Managed Infrastructure, including infrastructure in the IATP area.

Highways

- Pavement and Bridge Preservation
- Americans with Disabilities Act (ADA) Implementation and Compliance
- Culvert Repair and Replacement
- Highway Safety Improvement Program
- Rock Slope Stabilization Program

- State of Good Repair (National and Alaska Highway Systems) these projects are identified using:
    - Asset data
    - Alaska Maintenance and Operations (M&O) discussions
    - Community discussions
    - Planning documents
- Light up the Highways (NEW in 2024)

Airports

- Airport Project Evaluation Board

2.4 Funding Opportunities Through Federal and State Partners

WESTERN FEDERAL LANDS HIGHWAY DIVISION

Federal Lands Highway Division is an office of the USDOT, FHWA. It is represented by three regions: western (responsible for Alaska), central, and eastern. The Western Federal Lands Highway Division (WFLHD) serves the transportation needs of Federal and Indian lands through various partnerships and cooperative agreements with state and local governments and other federal agencies such as the Bureau of Indian Affairs, National Park Service, US Forest Service, etc.

The most commonly used funding supplied by WFLHD is the Federal Lands Access Program (FLAP). This funding improves transportation facilities that provide access to, are adjacent to, or are located within Federal lands. FLAP funding emphasizes high-use recreation sites and economic generators.

The Highway Trust Fund contract authority funds FLAP and is subject to obligation limitation. Funding is allocated per fiscal year among the States using a statutory formula based on road mileage, number of bridges, land area, and visitation. Projects to be funded by FLAP are selected by a programing decision committee established for each state. Each state runs its own application and funding cycle as established by the programming decision committee. Alaska's next request for proposals is projected to be January 2025.

FEDERAL EMERGENCY MANAGEMENT AGENCY

The Federal Emergency Management Agency (FEMA) has grant funds available for pre-and post-emergency or disaster-related projects, including support for critical recovery initiatives, innovative research, and many additional programs. Grants through FEMA are the main funding mechanisms used to commit and award federal funding to state, local, tribal, territorial, and certain private non-profits, individuals, and institutions of higher learning.

FEMA grant categories include preparedness, hazard mitigation assistance, resilience, continuing training, shelter and services, emergency food and shelter, national dam safety program, state assistance, national earthquake hazards reduction program, earthquake state assistance, and next-generation warning systems.

FEMA is committed to providing those who are eligible with the tools they need to succeed. In addition to grants, FEMA offers various tools to assist with grant applications. These include authorized equipment lists, benefit cost analysis, informational bulletins, and grants management technical assistance.

DENALI COMMISSION

The Denali Commission is an independent federal agency introduced by Congress in 1998. It is designed to provide critical utilities, infrastructure, and economic support throughout Alaska.

As a grant-making agency, the Denali Commission is dedicated to fulfilling its mission through strategic partnerships. It collaborates with tribal, federal, state, and local governments, as well as all Alaskans, to

enhance the efficiency of government services, cultivate a skilled workforce for a diverse and sustainable economy, and ensure the operation and maintenance of Alaska's basic infrastructure.

Through their ongoing partnerships and commitment to Alaska, the Denali Commission has invested over $1.2 billion and leveraged over $900 million from other sources to fund rural infrastructure, workforce and economic development, and community resilience projects in over three hundred communities across the state. In addition to housing grant opportunities and working to uplift rural Alaskan communities, the Denali Commission has technical assistance resources and guides for other funding resources, knowing that many projects require funds in excess of the amount the Commission can contribute.

2.5 Tribal Funding Opportunities

BIL includes historic investments in Tribal transportation through the Tribal Transportation Program (TTP). These investments include increased funding for programs dedicated to tribal needs and increased tribal eligibility. Additionally, BIL contains resources to assist Tribes in advancing projects and works with Tribes to support the inclusion of project elements that proactively address racial equity, workforce development, economic development, and removing barriers to opportunity.

Tribal funding opportunities through FHWA and USDOT can be accessed through the Office of Tribal Transportation or by working with a representative of the Bureau of Indian Affairs. Appendix 1, Transportation Funding Opportunities for Tribal Nations (Updated June 2023) provides an overview of all funding opportunities, eligibilities, and how to apply.

2.6 Discretionary Federal Grants and Programs

Categories for discretionary federal grants and programs can be grouped into the following categories:

- Roads, Bridges, and Major Projects
- Public Transportation
- Electric Vehicles, Buses, and Ferries
- Passenger and Freight Rail
- Ports and Waterways
- Other

The total funding available over the course of BIL for each of the identified categories is included in Table 1. A comprehensive list of the identified federal grants and programs is located in Appendix 2.

Table 1. Funding Categories, Funding Available, and Number of Grants and Programs

Category	Total Funding Available	Number of Grants and Programs in Category
Roads, Bridges, and Major Projects	$36,850,000,000	11
Public Transportation	$13,973,103,203	9
Electric Vehicles, Buses, and Ferries	$8,374,550,890	4
Passenger and Freight Rail	$5,250,000,000	2
Ports and Waterways	$2,275,000,000	2
Safety	$8,350,000,000	3
Other	$317,500,000	4

2.7 Technical Resources

FEDERAL

Planners at all levels (federal, state, regional, and community) can use the USDOT Discretionary Grants Dashboard. This dashboard is designed as a way for users looking for grant funding opportunities to be able to search all current offerings using prescribed filters. As of June 2024, there are 99 discretionary grants listed on the dashboard, which surpasses the 35 most prominent discretionary grants identified in Table 1 and Appendix 2.

STATE

In Alaska, the DOT&PF has established the Alaska Transportation Funding Opportunity Hub to provide a single webpage that hosts access to state programs and federal grants available to Alaska communities for transportation improvements across the state. It provides a dashboard of submitted projects for various funding programs, including state-regulated funding programs such as TAP and CTP, as well as federal NOFOs. The hub aims to provide details of all funding opportunities in one place and help communities identify which opportunities align best with their projects6. Communities access the hub by submitting a project intake survey, and DOT&PF, in partnership with the Alaska Municipal League (AML), works with communities to match projects with a funding program that best suits the project's goals.

6

https://experience.arcgis.com/experience/02a40551dbc64236b5ff6d6c4c43451a/page/Home/?data_id=dataSource_16-0%3A11

3.0 HISTORICAL FUNDING

Funding in the IATP area has shifted over the years since the publication of the 2010 IATP. A majority of the funding in the area for aviation capital projects has come from the Airport Improvement Program (AIP), and the majority of funding for surface transportation capital projects has come from Highway Safety Infrastructure Project (HSIP) grants. The funding amounts included in this section are all approximate numbers and include projects that are marked as complete or closed between fiscal years FYs 1982 - 2022 for aviation and (FY) 2014 and 2022 for surface transportation. These numbers do not include funds earmarked for DOT&PF M&O or total awarded grant funds for programs such as HSIP.

3.1 Aviation Funding

Aviation funding primarily comes from AIP and other special funding sources. The 2010 IATP recommended capital improvements totaling approximately $185 million in 2010 dollars. Since that time, about $62.5 million in has been spent on airport improvements in the region, and much of the work recommended by the 2010 IATP remains unaccomplished.

Major airport projects completed since the 2010 IATP evaluation was conducted include:

- Fort Yukon (FYU) – runway, taxiway, and apron improvements and Snow Removal Equipment Building (SREB) accomplished with a combination of AIP and American Recovery and Reinvestment Act (ARRA) funds.
- Lake Louise (Z55) – reconstructed and reopened shortly after the 2010 IATP with AIP funding.
- Livengood Camp (4AK) – major improvements, including runway extension from 1,425 ft to 3,000 ft sometime between 2012 and 2014, completed with State of Alaska Deferred Maintenance funding.
- Manley Hot Springs (MLY) – full reconstruction in 2016/2017 with AIP funding
- Minto Al Wright (51Z) – reconstructed with a longer, wider, lighted runway shortly after the 2010 IATP with AIP funding.
- Northway (ORT) – reconstruction was not a recommendation of the 2010 IATP, but the airport suffered major damage from the 2002 Denali Fault Earthquake, and FEMA funding was used to restore Northway to pre-earthquake conditions.
- Stevens Village – new airport completed (was under construction at the time of the 2010 IATP)

Table 2. AIP Investment in IATP Airports (Nonprimary Facilities Only)

	2007-2011 NPIAS	2023-2027 NPIAS
Alaska Nonprimary Airports in NPIAS	234	226
IATP Nonprimary Airports in NPIAS	36	33
Percent of Alaska Nonprimary Airports in IATP Region	15%	15%
	FY82-FY08	**FY09-FY22**
Total AIP Grants - all Nonprimary Alaska Airports	$1.18 billion	$1.50 billion
Total AIP Grants at IATP Nonprimary Airports	$124.5 million	$65.2 million
Percent of AIP Grant Total for IATP Nonprimary Airports	10.5%	4.3%

Note: "AIP Investment" includes other special funding, such as American Recovery and Reinvestment Act (ARRA), Coronavirus Aid, Relief, and Economic Security Act (CARES Act), and American Rescue Plan Act (ARPA) funding

At the time the 2010 IATP was developed:

- Approximately 15 percent of NPIAS nonprimary facilities were within the IATP region (the 2007-2011 NPIAS lists 234 nonprimary airports in Alaska, 36 of which are within the IATP region).
- The IATP region nonprimary airports received approximately 10.5 percent of total AIP grant funding during the FY82-FY08 period (approximately $1.18 billion for all Alaska nonprimary airports, roughly $125 million of which was awarded to IATP nonprimary airports).
- Thus, 15 percent of the state's nonprimary airports received about 10.5 percent of the nonprimary funding during this time period.
- Since the 2010 IATP, the percentage of total grant funding awarded to IATP nonprimary airports (FY09-FY22) has dropped considerably.
- The IATP region still has roughly 15 percent of the state's nonprimary airports (33 of the 226 listed in the 2023-2027 NPIAS).
- The percentage of AIP grant funding awarded to these facilities has dropped to approximately 4.3 percent of the total during the FY09-FY22 period (approximately $65 million of $1.5 billion awarded to all nonprimary facilities).
- Thus, 15 percent of the state's nonprimary airports received about 4.3 percent of the nonprimary funding during the FY09-FY22 time period following the data reported in the 2010 IATP.
- In the FY09-FY22 period, the IATP region nonprimary airports received less than half the share of total nonprimary funding than they received prior to FY09.

3.2 Surface Transportation Funding

Surface transportation funding comes from various means including state funded programs designed to benefit the local community and federal funded programs designed to benefit the state. State funded programs like CTP, TAP, and SIRA are opportunities for local communities to apply for funding for their specific needs. However, these funding opportunities are competitive and are subject to a review board to determine the projects most advantageous to receive funding.

The 2010 IATP included 28 capital projects for surface transportation totaling approximately $698.8 million dollars. Of the 28 capital projects recommended, all but four have been completed in the area. Of the four legacy projects, one project on the Richardson Highway for rehabilitation from MP 65-80 with the replacement of the Tonsina River Bridge has had funds allocated and went to bid in July of 2024.

The three remaining legacy projects are:

1. Elliott Highway MP 108-120
2. Parks Highway MP 113-163 Passing Lanes
3. Richardson Highway Tanana River Bridge (#524) Replacement

In addition to funding for capital project, since the 2010 IATP several state DOT programs have continued to operate and have provided funding in the IATP area.

3.2.1 CTP

CTP information is available dating back to 2012. In 2012 the project awards also included Trails and Recreation Access for Alaskans (TRAAK) projects. The total amount of funding available in 2012 is unavailable, but in 2011 two projects in the IATP area were chosen to receive funding under CTP and one was chosen to receive funding under TRAAK:

CTP

- Goldmile Trail Road Upgrade
- Rosie Creek Road Improvement

TRAAK

- Fairbanks to North Pole Bike and Pedestrian Path

The next call for projects occurred in 2020, with $56 million in federal funding available. Two projects in the IATP area were selected to receive funding under CTP:

- Fort Yukon Road Improvements and ROW Safety
- Healy Spur Road

3.2.2 TAP

TAP information is available for the 2016 and 2019 project award rounds, with limited information available for the 2022 project awards.

Table 3. TAP Funding Available 2016-2022

Year	Funding Available		
Population Size	**2016**	**2019**	**2022**
Rural (5,000 or less)	$3,731,000	$2,640,000	*
Urban (5,000 to 200,000)	$2,083,000	$2,040,000	*
Statewide (any area)	$9,892,000	$7,320,000	*
Total	**$15,706,000**	**$12,000,000**	**Expecting to award close to $20-30 million overall**

In 2016, one project within the IATP area received TAP funding, Yukon Drive Sidewalks at the University of Alaska Fairbanks. In 2019, two projects in the Fairbanks area received TAP funding, one project being outside the Fairbanks Area Surface Transportation (FAST) Metropolitan Planning Authority/Metropolitan Planning Organization (MPA)/(MPO) boundary and one inside the MPA boundary:

- Fairbanks North Star Borough Growden Park Path (Outside the MPA/MPO boundary)
- City of Fairbanks 5th Avenue Sidewalks (Inside MPA/MPO Boundary)
- The award amounts for these projects are not provided.

TAP projects awarded for 2022-2025 were announced in March 2024, two projects in the IATP area have been selected to be awarded funding, although their award amount and the overall award amount given to the State of Alaska has not been provided.

- Denali Borough: Healy to Antler Ridge Separated Path
- Denali Borough: Healy Area and School Pedestrian Path

3.2.3 SIRA

SIRA first awarded funding in the winter of 2022. During that season (October 2022 – May 2023) four entities received awards to assist in the development, maintenance, and management of ice roads. During the winter 2023 season (October 2023 – May 2024), two entities received awards. The funding amounts, communities, and the entities responsible are contained in Table 4.

Table 4. SIRA Funding Awarded 2022-2024

Community	Entity for SIRA Funds	2022-2023	2023-2024
Healy Lake	Healy Lake Village	$200,000.00	$300,000.00
North Slope Borough	North Slope Borough	$250,000.00	-
Tanana	Tanana Native Council	$35,176.43	-
Whitestone	Whitestone Community Association	$80,000.00	$100,000.00

3.2.4 Overall Funding

The estimated historical funding expended for surface transportation in the IATP area has been identified for FYs 2014 through 2022. These amounts have been estimated by evaluating the total dollars for each identified project within the region that has been categorized as closed or completed. The following information is important to consider when viewing these numbers:

- Totals originally included funding lines showing the overall amounts awarded to the northern region for the categories such as HSIP and M&O for the FY and marking the funding line as complete to indicate the funding had been fully expended once it was assigned to projects. To more accurately portray the amounts expended, the totals were adjusted to not include the overall awarded amounts. Instead, only completed and or closed projects identified as being funded under HSIP have been included in the total estimated funding amounts expended for each FY.
- Funding for the Fairbanks area has been filtered to exclude projects associated with an MPO/MPA, but they have not been filtered to exclude all projects within the FAST Planning boundary. Therefore, if a project occurred in the FAST Planning boundary without being marked as associated with the MPO/MPA, it is included.
- Some projects have been identified as uncategorized and included under regionwide. These projects are primarily larger highway projects that span multiple communities or are in areas that not associated with a designated community.

Table 5 identifies the estimated funds expended for surface transportation in communities within the IATP area. Funds expended are initially identified for each community and have been filtered based on the established IATP subregions to provide a more holistic overview. Each subregion is color coordinated with its associated communities.

Table 5. Funds Expanded in the IATP Area

Location	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
Region Wide	$20,641,286.38	$24,778,742.49	$33,272,164.99	$9,196,477.20	$2,749,722.66	$8,938,298,225.00	$25,298,225.00	$18,438,676.00	$5,364,327.13
Uncategorized (Region Wide)	$713,122.00	$519.509.00	-	$3,569,418.00	$927,775.00	$145,180.00	-	-	-
Yukon Flats	**$43,494,530.11**	**$70,966,659.00**	**$8,813,830.57**	**$25,489,770.00**	**$11,770,125.00**	**$90,160.00**	**$45,149,899.00**	**$0.00**	**$0.00**
Dalton Highway	$43,174,530.11	$61,048,311.00	$4,317,242.57	$25,413,019.00	$9,965,362.00	-	$45,149,899.00	-	-
Central	-	-	-	$46,900.00	$459,287.00	$41,890.00	-	-	-
Nenana	$320,000.00	$9,918,348.00	$4,496,588.00	$29,851.00	$1,345,476.00	$48,270.00	-	-	-
Middle Yukon/Fairbanks	**$68,786,589.50**	**$30,494,815.00**	**$32,749,379.00**	**$17,490,181.39**	**$42,937,625.57**	**$66,590,890.00**	**$11,258,743.47**	**$12,639,262.02**	**$862,764.00**
Eielson Airforce Base	-	-	-	$1,906,242.00	$315,187.14	-	-	-	-
Fairbanks	$38,548,716.50	$9,873,703.00	$26,015,001.00	$10,320,854.00	$42,307,459.00	$45,048,748.00	$2,568,973.00	$9,436,971.02	$21,128.00
Fairbanks North Star Borough	$571,651.00	$124,105.00	$1,362,909.00	$62,966.00	$160,000.00	$5,494,387.00	$355,060.00	$3,202,291.00	$841,636.00
Fox	-	-	$75,000.00	-	$140,353.00	-	-	-	-
Livengood	$556,134.00	$290,369.00	$262,849.00	-	-	-	-	-	-
Minto	$23,898,215.00	$17,398,251.00	$3,996,754.00	$4,394,076.36	-	-	-	-	-
North Pole	$4,351,978.00	$308,387.00	$420,000.00	$513,182.03	-	$16,047,755.00	$8,334,710.47	-	-
Tanana	$859,895.00	$2,500,000.00	$616,866.00	$292,861.00	$14,653.43	-	-	-	-
Denali Borough	**$28,742,873.00**	**$12,734,787.00**	**$21,060,601.00**	**$7,089,180.00**	**$2,592,809.02**	**$90,169.00**	**$147,941.07**	**$10,595,177.59**	**$4,668,357.00**
Cantwell	$245,000.00	$1,666,953.00	-	-	-	-	-	$5,291,013.00	-
Denali	$346,644.00	-	$380,000.00	$345,000.00	$1,230,000.00	$77,949.00	$60,000.00	$4,688,306.00	$4,588,306.00
Healy	$28,151,229.00	$11,067,834.00	$20,680,601.00	$6,744,180.00	$1,362,809.02	$12,220.00	$87,941.07	$615,858.59	$80,051.00
Southeast Fairbanks	**$15,892,603.26**	**$54,858,292.49**	**$9,286,230.00**	**$2,482,578.04**	**$12,744,172.71**	**$38,211,096.36**	**$8,161,640.58**	**$472,855.00**	**$0.00**
Chicken	-	-	-	-	$719,405.00	-	-	-	-
Delta Junction	$2,824,179.26	$37,173,575.00	$8,378,068.00	$150,900.00	-	-	$3,853,432.00	$178,883.00	-
Tok	$13,068,424.00	$17,684,717.49	$908,162.00	$2,331,678.04	$12,024,767.71	$38,211,096.36	$4,308,208.58	$293,972.00	-
Copper River	**$9,956,491.00**	**$9,225,944.00**	**$1,358,301.00**	**$470,233.99**	**$0.00**	**$14,494,715.30**	**$2,565,816.35**	**$21,541,746.80**	**$2,422,461.00**
Chitina	$9,028,567.00	$9,050,062.00	-	-	-	-	-	-	-
McCarthy	$877,924.00	-	$350,000.00	-	-	$250,000.00	$109,926.35	$3,162,607.80	-
Tazlina	$50,000.00	$175,882.00	$1,008,301.00	$470,233.99	-	$34,693.30	-	$18,379,139.00	$2,422,461.00
Tonsina	-	-	-	-	-	$14,210,022.00	$2,455,890.00	-	-
Full IATP Area	**$188,227,495.60**	**$203,578,748.98**	**$106,540,497.56**	**$65,787,838.62**	**$73,722,256.96**	**$128,560,453.66**	**$92,582,265.47**	**$108,837,616.41**	**$13,317,909.13**

Based on the values presented in Table 5, the following can be deduced:

- The most funds were expended on projects in the IATP area in FY15.
- A large portion of funds have been expended on the Dalton Highway
- The subregion with the most funds expended during funding period was the Middle Yukon/Fairbanks subregion.
- Many of the funds spent in FY22 are not fully accounted for. This is likely because the projects are still open, in design, in the planning phase, etc.

During the funding period of FY14 to FY22, HSIP funding stood out from additional funding sources, as it is the only funding where the project titles included the moniker "HSIP" as an identifier clearly stating the funding source. Additionally, FLAP funding was identified for the communities of Healy and McCarthy starting in FY20.

HSIP

Of the 23 locations identified in the overall funding Table 5, nine received HSIP funding for projects identified as closed and/or complete during the period of FY14 to 22 for a total of $110,863,287.60 in HSIP funding spent.

Of the total HSIP funding spent, the majority was expended in FY19 and FY 16 with $29,798,003.00 and $27,906,853.00 being expended respectively.

HSIP projects in the IATP area include but are not limited to the following:

- Northern Region Guardrail Updates – Alaska Highway (FYs 20 and 21)
- Alaska Dalton, Elliott, and Steese Highways Signing and Striping (FYs 14, 15, 16, 17)
- Parks Highway Milepost 253 ARRC Signal Upgrades (FYs 17, 18, 19)
- Richardson Highway Edgeline Rumble Strips (FY 14)

FLAP

The IATP area is rich with federal lands meaning it is a prime location to pursue and use WFLHD's FLAP funding. Table 6 identifies the authorized funds allocated each fiscal year for the State of Alaska through WFLHD.

Table 6. FLAP Funds Authorized FY13-22

FY Authorized Funds	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
	$7.10M	$7.15M	$7.01M	$7.96M	$7.96M	$7.50M	$7.51M	$7.69M	$7.64M	$8.04M

FLAP funding expended in the IATP area is seen starting in FY20 for the communities of Healy and McCarthy. Between FY 20 and FY 22, FLAP funds were expended in Healy for the Bison Gulch Parking Area and Trail Enhancement and in McCarthy for the McCarthy Road MP 41 Crystal Creek Culvert Replacement. The funds expended and associated FY and community is included in Table 7.

Table 7. FLAP Funds Expended in IATP Area FY20-22

Location	FY20	FY21	FY22	TOTAL
Healy	$87,941.07	$615,858.59	$80,051.00	**$783,850.66**
McCarthy	$109,926.35	$1,233,097.35	-	**$1,343,023.70**
Total	**$197,867.42**	**$1,848,955.94**	**$80,051.00**	**$2,126,874.36**

4.0 UNDERSTANDING THE ISSUES AND NEEDS

The following information is derived from the technical memoranda associated with each transportation mode/subject area and summarizes the key findings, issues, and needs.

4.1 Aviation

Technical Memorandum 2 identifies the key issues and needs for the 63 public use airports in the IATP area. This memo identified gaps in the investment of capital projects for aviation and overall recommended prioritizing funding identified airports. Additional key issues needs are listed below.

- **Key Issue: Airport Roles and Classification**

  Need: Evaluate the classification for Healy Lake airport.

- **Key Issue: Airport Coverage**

  Need: Improve airports at Tok and Gulkana. Study a potential new airport serving the Denali Borough. Preserve and improve backcountry airstrips and landing strips.

- **Key Issue: Infrastructure (pavement, runways, and lighting)**

  Need: Provide infrastructure improvements based on priority for pavement, runways, and lighting.

- **Key Issue: Amenities (fuel and broadband connectivity)**

  Need: Although DOT&PF is not in the business of providing fuel service, airport improvement and development plans should include suitable locations for fuel service to be provided by private parties. DOT&PF should be engaged in the process of implementing high-speed internet access and identify ways to connect airports not currently connected or unserved by broadband service.

- **Key Issue: Airspace and Navigation**

  Need: DOT&PF continue to engage in conversations on proposals for changes to airspace.

- **Key Issue: Weather Reporting and Communication**

  Need: Continue to promote the Federal Aviation Administration (FAA) program to add/upgrade weather reporting, navigation, and communication equipment at rural airports.

- **Key Issue: Bypass Mail Program**

  Need: Continue to monitor of the Bypass Mail program and continue communications with the United States Postal Service (USPS) to make sure Alaska's rural communities are adequately considered by USPS actions.

- **Key Issue: Wildland Firefighting Support**

  Need: DOT&PF maintain all facilities used for wildland firefighting support as appropriate for field operations and take-offs/landings.

- **Key Issue: Unmanned Aerial Systems**

  Need: Continue support for communications/broadband and real-time weather reporting to position airports to be well positioned to take advantage of Unmanned Aerial Systems (UAS) and Advanced Air Mobility.

- **Key Issue: Funding Landscape**

  Need: Prioritize deferred capital need aviation projects in the IATP area.

4.2 Surface Transportation

Technical Memorandum 1 reviews the major highways of the IATP area, which include the Richardson, Steese, Parks, Denali, Glenn, Alaska, Tok Cutoff, Edgerton, Taylor, and Top of the World Highways. Additional summaries were provided of major community roads have higher traffic volumes, such as Chena Hot Springs Road, Nabesna Road, and McCarthy Road, which is a part of Edgerton Highway. This technical memo identified key issues in data collection practices in Alaska, as well as non-motorized uses and safety for all users. The key issues and needs are listed below.

- **Key Issue: Roadway User Safety Risks**

  Need: Collaboration with local communities to address safety risks.

- **Key Issue: Non-Motorized Facilities**

  Need: Continue to implement the recommendations detailed in the Alaska Statewide Active Transportation Master Plan to address increased desire for additional non-motorized facilities and fill network gaps.

- **Key Issue: Roadside Amenities/Waysides**

  Need: Increase location and maintenance of public rest stops, including restroom facilities, along all major highways.

- **Key Issue: Forecasting Tools**

  Need: Create and maintain a statewide traffic/travel demand model tool.

- **Key Issue: Data Gaps**

  Need: Create an inventory of road user amenities including rest stops, pull outs, and toilets. Create an inventory of existing non-motorized facilities.

- **Key Issue: Recreation and Tourism Access**

  Need: Continue to build on the “Last ‘Fun’tier” initiative by collaborating with landowners, communities, and other agencies to conduct tourism and recreation corridor studies.

4.3 Resiliency

Technical Memorandum 4 addressed resiliency and risk. This memo focuses on community preparedness and infrastructure risk. Key issues identified included the need for DOT&PF to be involved in community planning efforts and assist in identifying and assigning infrastructure risk. Additional key issues and needs are listed below.

- **Key Issue: Non-Infrastructure Community Based Resiliency Efforts**

  Need: Provide on-going and focused engagement as a partner by encouraging and collaborating in the development of hazard mitigation plan development and implementation.

- **Key Issue: Establish Infrastructure Risk Mitigation Strategies**

  Need: Identify and prioritize community infrastructure and assign appropriate mitigation strategies.

- **Key Issue: Resiliency Action Program**

  Need: Establish evaluation criteria for a resiliency action program that assists in identifying at-risk infrastructure.

4.4 Riverine

Issues and needs for the riverine system are addressed in Memorandum 5, which analyzes use, facilities, and communities on the Yukon and Tanana rivers. The key issues and needs are listed below.

- **Key Issue: Erosion and Washout**

  Need: Implement erosion control methods and mitigation.

- **Key Issue: Funding Opportunities and Limitations**

  Need: Prioritize development of and funding for barge facilities.

4.5 Maintenance and Operations

Maintenance and operation needs are addressed in all the memos. These include the following key issues:

Road maintenance:

- **Pavement preservation**
- **Clearing and grubbing**
- **Winter maintenance**

Airport maintenance:

- **Clearing and grubbing**
- **Winter maintenance**

Additionally, there is an overwhelming need for additional maintenance staffing and funding in all areas of the state but particularly in the IATP area.

4.6 Other Agency Needs

Separate agencies within the IATP area that have their own established needs lists are the FAST Planning MPA/MPO, the Denali Commission, and the Alaska Railroad Corporation (ARRC). These agencies have a hand in improving the transportation system within the IATP area and supporting the overarching goals set forth by the DOT&PF.

The DOT&PF is currently coordinating to establish Regional Planning Organizations (RPOs). To date, one RPO has been established in the IATP area and several more are being considered. RPOs will have a role in the future in managing the transportation system, addressing needs, and delivering the goals set forth by DOT&PF.

4.6.1 Denali Commission

The Denali Commission is committed to developing and executing programs, projects, and activities that improve the living conditions of Alaskans, primarily in rural Alaska, like much of the IATP area. Projects, programs, and activities developed by the Denali Commission are meant to compliment and assist efforts by other federal agencies, not duplicate. The Denali Commission's most recent needs list is included as Appendix 3.

4.6.2 Alaska Railroad Corporation

The ARRC operates throughout Alaska with major connections between Fairbanks and Anchorage through Denali National Park. For the vast majority of the IATP area, the ARRC rail line is grade separated and the key issues and needs identified by ARRC are bridge replacements, slope stabilization, track rehabilitation and realignment, and various rail line extension projects. The needs established by the ARRC are included in the IATP in Appendix 4. These needs were identified by the ARRC as the agency responsible for the planning, study, design, and construction of projects on the rail line.

4.6.3 Fairbanks Area Surface Transportation (FAST) Planning

The FAST Planning MPO operates in the urbanized areas of the Fairbanks North Star Borough, which includes both the city of Fairbanks and North Pole and is a cooperative effort with priorities set forth by a Technical Committee and Policy Board. The MPO boundary is omitted from the IATP area. Long-range planning for the MPO is included in the Metropolitan Transportation Plan (MTP). The needs and key issues identified by the MPO have been reviewed and are included in the IATP by reference only (Appendix 5).

5.0 HIGH INTEREST INVESTMENT AREAS AND PROJECTS BY SUBREGION AND MODE

The cumulative list of needs for the IATP area began with over 1,000 needs and potential projects identified, spanning years of work, outreach, and effort undertaken by the DOT&PF. Through the evaluation of the needs in conjunction with the IATP planning process, it became evident that that there are systemic issues across the IATP area that require immediate and comprehensive attention. These issues span multiple modes and sectors, highlighting inefficiencies and barriers that hinder progress. One critical aspect is the inadequate and inconsistent allocation of funding, which directly impacts the capability to implement strategic solutions that would most benefit the region.

Addressing these systemic challenges will require a coordinated approach, strategic resource allocation, and targeted investments to support the ability for long-term effective change. To assist in bridging the gap between identified needs and potential projects and the identified systemic issues inhibiting functional implementation and progress, the IATP identifies high interest investment areas in addition to high interest projects.

5.1 High Interest Investment Areas

High interest investment areas are areas of focus in the region or sub-region which require additional consideration or thought when choosing where, when, and how to invest in the area. These high interest investment areas are identified prior to listing the high interest projects and are focused on addressing systemic issues and guiding the allocation of funding for the transportation system within the IATP area.

5.2 High Interest Projects

High interest projects on the region-wide and sub-regional level are guided by community and agency input, existing conditions, statewide goals, and the established goals for the IATP. To best frame the high interest project recommendations for the region and the identified sub-regions, the high interest investment areas dedicated to each area also must be identified.

High interest projects are included on both a region-wide and sub-regional level with their transportation mode. Each high interest project has a need identification number (ID #) which is used by DOT&PF to track the project through its lifecycle. Each identified project also has the location, cost range, funding type, and the IATP goal(s) that are met by the project. These identifiers ultimately assist planners, at the state, regional, and community level to view the needs and project recommendations in the IATP area and swiftly understand where to focus efforts in the short- medium- and long- term, and which funding and grant opportunities best align. In addition to the recommended priority projects, all identified needs for the sub-regions in the IATP are included with their descriptions in Appendix 6.

5.3 Region Wide

5.3.1 High Interest Investment Areas

Dust Mitigation

- Invest in dust mitigation for rural communities in the IATP area.

Maintenance and Operations

- Invest in maintenance and operations for all modes and facilities throughout the IATP region.

Pavement Preservation

- Invest in the preservation of pavement throughout the region.

Aviation Lighting and Infrastructure

- Invest in evaluating and replacing aging aviation lighting systems throughout the IATP area.

Riverine Facilities

- Invest in creating new riverine facilities for both recreation access and barge movement throughout the IATP area.

Waysides/Roadside Amenities

- Invest in identifying wayside typography, level of service, and maintenance needs throughout the IATP area. All wayside needs are identified in Appendix 7.

Railroad

- Support investment for system upgrades and maintenance by the ARRC.

Rural Community Winter Trails and Ice Roads

- Invest in community winter trails and ice roads using CWTP and SIRA. Support rural communities through the application and budgeting process.

5.3.2 High Interest Projects

Aviation

- **Aviation Facility Study**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Conduct further study of specific airports as regionally significant facilities, including Tok Junction Airport and Gulkana Airport.

- **Backcountry Airstrip Work Group**

  IATP GOALS MET: Health, Safety, and Security | Preservation and Enhancement | Intermodal Connectivity.

  Revive the Backcountry Airstrip Work Group to explore volunteer and stakeholder maintenance of critical landing strips.

5.4 Yukon Flats

5.4.1 High Interest Investment Areas

Winter Access

- **Rural Community Winter Trails and Ice Roads***

  Invest in community winter trails and ice roads using CWTP and SIRA.

Riverine

- **Community Barge Landings***

  Invest in community barge landings to promote accessibility for commerce via the riverine system for rural communities in the IATP area.

Rail

- **Railroad Investments**

  Continue to support ARRC in the pursuit of projects that address the needs identified for the Yukon Flats sub-region. These needs include bridge rehabilitations and replacements, desired railway extensions that would accommodate and/or facilitate future economic activity, and the continued maintenance of the railway. See Appendix 4.

These are high interest investment areas that have been identified for the whole region, they are repeated in sub-regions with additional investment priorities.

5.4.2 High Interest Projects

Surface

- **MP 137-148 Erosion/Brich Creek Bridge| Circle/Central**

  IATP GOALS MET: Economic Vitality | Preservation and Enhancement.

  Replace Birch Creek Bridge (#355) at MP 144 of the Steese Highway and construct erosion protection measures from MP 137 to MP 148.

- **Steese Highway MP 53-74 Rehabilitation | Central**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement

  Rehabilitate the Steese Highway from MP 53 to MP 74.

See the 2022 Northwest Alaska Transportation Plan for Elliott and Dalton Highway Priorities

Aviation

- **Beaver Airport Lighting Improvements| Beaver**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity

  Complete lighting improvements for Beaver Airport.

- **Birch Creek Airport Lighting and Rehabilitation| Birch Creek**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity

  Complete lighting improvements and rehabilitation for Birch Creek Airport.

5.5 Middle Yukon/Fairbanks

5.5.1 High Interest Investment Areas

Rail

- **Railroad Investments***

  Continue to support ARRC in the pursuit of projects that address the needs identified for the Middle Yukon/Fairbanks sub-region. These needs include bridge rehabilitations and replacements, facility upgrades, and the continued maintenance of the railway. See Appendix 4.

  *These are high interest investment areas that have been identified for the whole region, they are repeated in sub-regions with additional investment priorities.

5.5.2 High Interest Projects

Surface

- **Chena Hot Springs Road MP 13-20 Rehabilitation| NEED ID: 32998 | Fairbanks**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Rehabilitate Chena Hot Springs Road from MP 13-20. Work includes roadside hardware, drainage improvements, and utilities.

- **Steese Highway MP 10-17 Rehabilitation | Fairbanks**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Rehabilitate the Steese Highway from MP 10 to MP 17.

- **Elliott Highway MP 29-50 Rehabilitation | Fairbanks**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Rehabilitate the Elliott Highway from MP 29 to MP 50.

See the 2022 Northwest Alaska Transportation Plan for additional Elliott Highway Priorities

Active

- **Fairbanks to Salcha Pedestrian Path | Fairbanks**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility.

  Multi-phased pedestrian and bicycle trail construction.

Aviation

- **Stevens Village Airport Lighting and Resurfacing| Stevens Village**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Rehabilitate surfacing and apply dust palliative at the Stevens Village Airport on the runway, taxiway, apron and access road. Replace and upgrade airport lighting and electrical components. Remove and replace and culvert at the taxiway.

5.6 Upper Tanana

5.6.1 High Interest Investment Areas

Surface

- **The Alaska Highway, including improvements and passing lanes.**

  Invest in improvements on the Alaska Highway, including passing lanes.

- **Pavement Preservation***

  Invest in pavement preservation on all major roadways in the Upper Tanana sub-region, including the Alaska Highway, Taylor Highway, and Richardson Highway.

Winter Access

- **Healy Lake Ice Road***

  Invest in winter access, including continued investment in the Healy Lake ice road providing the community of Healy Lake affordable year-round access to goods and the ability to access larger communities in the area for work, social events, and medical appointments.

Aviation

- **Tok Junction Airport**

  Invest in the Tok Junction Airport, including future improvements.

*These are high interest investment areas that have been identified for the whole region, they are repeated in sub-regions with additional investment priorities.

5.6.2 High Interest Projects

Surface

- **Johnson Bridge Replacement| Alaska Highway**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Preservation and Enhancement.

  Replace Johnson River Bridge #518 on the Alaska Highway at Milepost 1380. The project includes drainage improvements, roadside hardware, and utilities.

- **Gerstle Bridge Replacement| Alaska Highway**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Preservation and Enhancement.

  Replace the Gerstle River Bridge #520 located on the Alaska Highway at Milepost 1393. The project includes drainage improvements, road reconstruction, roadside hardware, and utilities.

- **Robertson Bridge Replacement| NEED ID:34126 | Alaska Highway**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Preservation and Enhancement.

  Replace the Robertson River Bridge #509 located on the Alaska Highway at Milepost 1348. The project includes drainage improvements, roadside hardware, roadway reconstruction, and utilities.

- **Taylor Highway PEL|**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility

  Use a Planning and Environmental Linkage Study to identify future investments on the Taylor Highway and work towards solving existing right of way issues.

- **Richardson Highway MP 234-256 Rehabilitation | Fort Greely**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Preservation and Enhancement.

  Rehabilitate the Richardson Highway from MP 234 to MP 256.

Active

- **Delta to Fort Greely Bike Path | Delta**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a bike/ped path from the Alaska/Richardson Hwy intersection to Ft. Greely.

- **MP 1314 – 1326 Tok Bike Path Rehabilitation| Tok**

  IATP GOALS MET: Health, Safety and Security | Accessibility and Mobility | Intermodal Connectivity.

  Rehabilitate the existing bike path from Tok MP 1314 to Tanacross MP 1326.

Aviation

- **Tok Junction Airport Improvements| Tok**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Improve facilities at Tok Junction Airport.

5.7 Denali

5.7.1 High Interest Investment Areas

Surface

- **Pavement Preservation***
- **The Parks Highway**

  Invest in improvements on the Parks Highway, including pavement preservation and passing lanes.

- **Healy Canyon**

  Continue to prioritize investments in the Healy Canyon area that allow for a safe and resilient transportation system.

Active

- **Continuous Separated Path Through Denali Borough**

  Invest in projects that will link various parts of the Denali Borough by a separated path.

Winter Access

- **Denali Highway Winter Trail Safety***

  Invest in projects, programs, and initiatives to promote winter trail safety on the Denali Highway, such as “Light Up the Lead Dogs”.

Aviation

- **Nenana Airport**

  Invest in the Nenana Airport, including future facility improvements.

Riverine

- **Recreational Access to the Nenana River**

  Invest in additional recreational access to the Nenana River, promoting safe and meaningful usage.

Rail

- **Rail Investments***

  Continue to support ARRC in the pursuit of projects that address the needs identified for the Denali sub-region. These needs include bridge rehabilitations and replacements, facility upgrades, and the continued maintenance of the railway. See Appendix 4.

- **Healy Canyon**

  ARRC has identified Healy Canyon as a high interest investment area.

*These are high interest investment areas that have been identified for the whole region, they are repeated in sub-regions with additional investment priorities.

5.7.2 High Interest Projects

Surface

- **Parks Highway Nenana River Bridge at Rex (#0216) Replacement| NEED ID:34303 | Denali**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Replace the Nenana River Bridge at Rex (#0216) located on the Parks Highway at MP 276. Project will include drainage improvements, road reconstruction, roadside hardware, and utilities.

- **Parks Highway MP 238-239 Reconstruction (Stage 1) |**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Parks Highway from MP 238 to MP 239. This project ID is representative of a single stage of reconstruction for the Parks Highway.

- **Parks Highway MP 239-240 Nenana Canyon Rockfall Mitigation (Stage 2**)

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Install rockfall mitigation along the Parks Highway from MP 239 to 240. Project will include drainage improvements, rockfall mitigation, and roadside hardware.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Parks Highway MP 250-260 Reconstruction|**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Parks Highway from MP 250 to MP 260.

- **Parks Highway MP 285-305 Rehabilitation| NEED ID:33604 | Denali**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Parks Highway between MP 285-305. Project includes drainage improvements, roadside hardware, utilities, and rehabilitation of Julius Creek Bridge (#0317), Fish Creek Bridge (#0722), Tanana River Bridge (#0202) and North Slough Tanana.

- **Parks Highway MP 263-275 Rehabilitation| NEED ID:29874 | Healy**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Rehabilitate the Parks Highway from MP 263-275.

- **Pretty Rocks Slide Bridge, Denali Park Road MP 44/Polychrome Area Improvements | Denali**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  An approximately 475-foot-long bridge will be needed to span the active Pretty Rocks Landslide. A combination of earthwork, horizontal drains, and a possible cut slope side retaining wall will likely be required to address the Perlite Landslide on the east side of the Pretty Rocks Landslide. The new bridge will also require realignment of Denali Park Road and a significant amount of excavation at either end of the bridge.

- **Ghiglione Bridge Replacement, Denali Park Road**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Replace the Ghiglione Bridge on Denali Park Road.

- **Parks Highway MP 206-209 Reconstruction| Denali**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement

  Reconstruct the Parks Highway from Milepost 206-209 including replacement of the Pass Creek Bridge #0293. Project includes drainage improvements, roadside hardware, and utilities.

- **Richardson Highway MP 317-326 Rehabilitation | Denali**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Rehabilitate the Richardson Highway from MP 317 to MP 326.

Active

- **Nenana River Pedestrian Bridge at McKinley Village| Denali**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a pedestrian bridge crossing the Nenana River at McKinley Village, including footpath to enable pedestrians to reach bridge without traveling on shoulder of roadway.

- **Parks Highway Cantwell to Carlo Creek Separated Path|**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a separated path along the Parks Highway connecting the communities of Cantwell and Carlo Creek. Project will include constructing a pedestrian bridge at the Nenana River crossing at Windy Bridge.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Parks Highway Carlo Creek to Crabbies Crossing Separated Path|**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a separated path along the Parks Highway from Carlo Creek to McKinley Village.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Parks Highway Crabbies Crossing to Denali Park Entrance Separated Path**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a separated path along the Parks Highway from Crabbies Crossing to Denali Park Entrance Road.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Parks Highway Denali Park Entrance to Healy Separated Path**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a separated path along the Parks Highway from Hornet Creek to the community of Healy. Project will include constructing pedestrian bridges at Antler Creek, Bison Gulch, and the Nenana River at Moody Bridge.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Parks Highway Healy to Stampede Road Separated Path**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a separated path along the Parks Highway from the community of Healy to Stampede Road. Project will include constructing pedestrian bridges at Dry Creek and Dry Creek Overflow Bridge.

  See Cantwell to Healy – Parks Highway MP 203-259 PEL Study for full scope.

- **Nenana Canyon to McKinley Village Bike Trail/Nenana River Trail (NPS) | NEED ID:9904 | Denali**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Construct a bicycle trail along the Parks Highway from the Nenana Canyon Trail to the McKinley Village area, approximately six miles.

Aviation

- **Nenana Airport Improvements | Nenana**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Improve facilities at Nenana Airport.

- **Denali Area Airport Planning Study | Denali**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Planning Study to analyze the airport needs of the Denali Borough area to determine the most appropriate airport site or sites for future public investments. Refer to final planning document for recommendations.

Riverine

- **Nenana Port Improvements | Nenana**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Improve facilities at the existing Port of Nenana

5.8 Copper River

5.8.1 High Interest Investment Areas

Surface

- **Pavement Preservation***

  Invest in pavement preservation on the Richardson Highway, Nabesna Road, and McCarthy Road.

- **Richardson Highway**

  Invest in improvements on the Richardson Highway identified in the Richardson Highway PEL, improve the existing infrastructure, and increase safety.

- **Nabesna Road**

  Invest in improvements on Nabesna Road.

- **McCarthy Road**

  Invest in improvements on McCarthy Road.

Aviation

- **Gulkana Airport**

  Invest in the Nenana Airport, including future facility improvements.

*These are high interest investment areas that have been identified for the whole region, they are repeated in sub-regions with additional investment priorities.

5.8.2 High Interest Projects

Surface

- **Richardson Highway MP 113 Realignment (Slide)**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Realign the Richardson Highway at MP 113.

- **Richardson Highway MP 187-205 Rehabilitation**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Rehabilitate the Richardson Highway from MP 187 to MP 205.

- **Richardson Highway MP 206 to 218 Reconstruction and Miller Creek Bridge**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct Richardson Highway MP 206-235 (29 miles) including replacement of Upper Miller Creek #581 (MP 215), Lower Miller Creek #582 (MP 216), Castner Creek #583 (MP 217).

- **Richardson Highway MP 218-221 Reconstruction Trims to Ruby Creek****

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Richardson Highway from MP 218 to MP 221, Trims to Ruby Creek. This is a variation of a legacy project from the 2010 IATP.

- **Richardson Highway MP 224-227 Reconstruction**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Richardson Highway between mileposts 224 and 227. Work includes replacing Lower Suzy Q Creek bridge #0589 and replacing Upper Suzy Q Creek culvert #7146 and Falls Creek culvert #7147 with bridges. Work will also include sections of realignment, roadside hardware, utilities, and drainage improvements.

- **Richardson Highway MP 227-229 Reconstruction**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Reconstruct the Richardson Highway between mileposts 227 and 229. Work includes replacing Gunnysack Creek bridge #0590, sections of realignment, roadside hardware, utilities, and drainage improvements.

- **McCarthy Road Drainage Improvements | McCarthy**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Improve drainage on McCarthy Road.

- **McCarthy Road Kotsina Bluffs Realignment | McCarthy**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Realign McCarthy Road at Kotsina Bluffs.

- **McCarthy Road Right of Way Corrections | McCarthy**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility.

  Conduct right of way corrections on McCarthy Road.

- **Tonsina Bridge Replacement | Tonsina**

  IATP GOALS MET: Health, Safety, and Security | Accessibility and Mobility | Preservation and Enhancement.

  Widen and reconstruct the Tonsina Bridge to current standards. This is part of a legacy project from the 2010 IATP.

Active

- **Transit/Active Transportation Initiative (Phase One)**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Conduct a three-phased initiative to consider implementing transit service from the Denali National Park entrance to key points along the corridor, tying into active transportation improvements.

- **Kenny Lake Bike Path Extension | Kenny Lake**

  IATP GOALS MET: Economic Vitality | Health, Safety, and Security | Accessibility and Mobility | Intermodal Connectivity.

  Extend the Kenny Lake Bike Path from its terminus at the Kenny Lake School, MP 4 Edgerton Highway, to the Richardson Highway, MP 0. Would like bike path to run towards the general store.

Aviation

- **Gulkana Airport Improvements| Gulkana**

  IATP GOALS MET: Economic Vitality | Accessibility and Mobility | Preservation and Enhancement | Intermodal Connectivity.

  Perform improvements at the Gulkana Airport following the 2024 Gulkana Airport Layout Plan.

APPENDIX 1: FHWA TRIBAL FUNDING OPPORTUNITIES

FEDERAL HIGHWAY ADMINISTRATION

Transportation Funding Opportunities for Tribal Nations

U.S. Department of Transportation

Federal Highway Administration

Updated: June 1, 2023

Overview

The Infrastructure Investment and Jobs Act, otherwise known as the Bipartisan Infrastructure Law (BIL), represents a once-in-a-generation investment in our nation's infrastructure, competitiveness, and communities and provides approximately $550 billion in new Federal infrastructure investment.

This includes historic and critical investments in Tribal transportation through the Tribal Transportation Program (TTP), including increased funding to programs dedicated to Tribal needs and increased Tribal eligibility for new and existing discretionary grant programs. The first year of the BIL (2022) increases TTP funding by 15 percent over 2020 levels—and over the full range of the BIL (2022-2026), the law provides more than $3 billion for the program. This dedicated historic level of funding benefits all 574 federally recognized Indian Tribes and Alaska Native Villages (Tribes).

The BIL provides substantial resources to help tribes advance projects that consider the unique circumstances affecting community members' mobility needs and allocate resources consistently with those needs, enabling the transportation network to effectively serve all community members. The Federal Highway Administration (FHWA) will work with Tribes to ensure consideration of using Federal funds for projects and inclusion of project elements that proactively address racial equity, workforce development, economic development and removing barriers to opportunity, including automobile dependence in both rural and urban communities as a barrier to opportunity, or to redress prior inequities and barriers to opportunity.

Safety continues to be the U.S. Department of Transportation's (USDOT) top priority. Tragically, based upon statistics, Native Americans remain the group most likely to lose their lives in car crashes. Dedicated safety funding within the TTP more than doubled in the BIL, giving us more opportunities to work together to improve safety in Tribal communities. The National Roadway Safety Strategy (NRSS) (issued January 27, 2022) commits the USDOT and FHWA to respond to the current crisis in traffic fatalities by "taking substantial, comprehensive action to significantly reduce serious and fatal injuries on the Nation's roadways," in pursuit of the goal of achieving zero highway deaths. FHWA recognizes that zero is the only acceptable number of deaths on our roads and achieving that is our safety goal. FHWA therefore encourages Tribes to prioritize safety in all Federal highway investments and in all appropriate projects, using relevant funding.

In addition, the BIL includes an unprecedented investment in the Tribal Transportation Bridge Program. Here, the BIL provides more than $1 billion dollars over five years (2022-2026)—a 14-fold increase compared to the FAST Act—through dedicated set-asides from the new Bridge Investment Program and Bridge Formula Program.

Tribes are eligible to access many of the new highway programs created under the BIL, including programs focused on resilience, electric charging and alternative fuel vehicle infrastructure, and repairing and replacing culverts. Tribes can also apply for several unprecedented USDOT-led surface transportation competitive grant programs that will provide billions for infrastructure projects across the country.

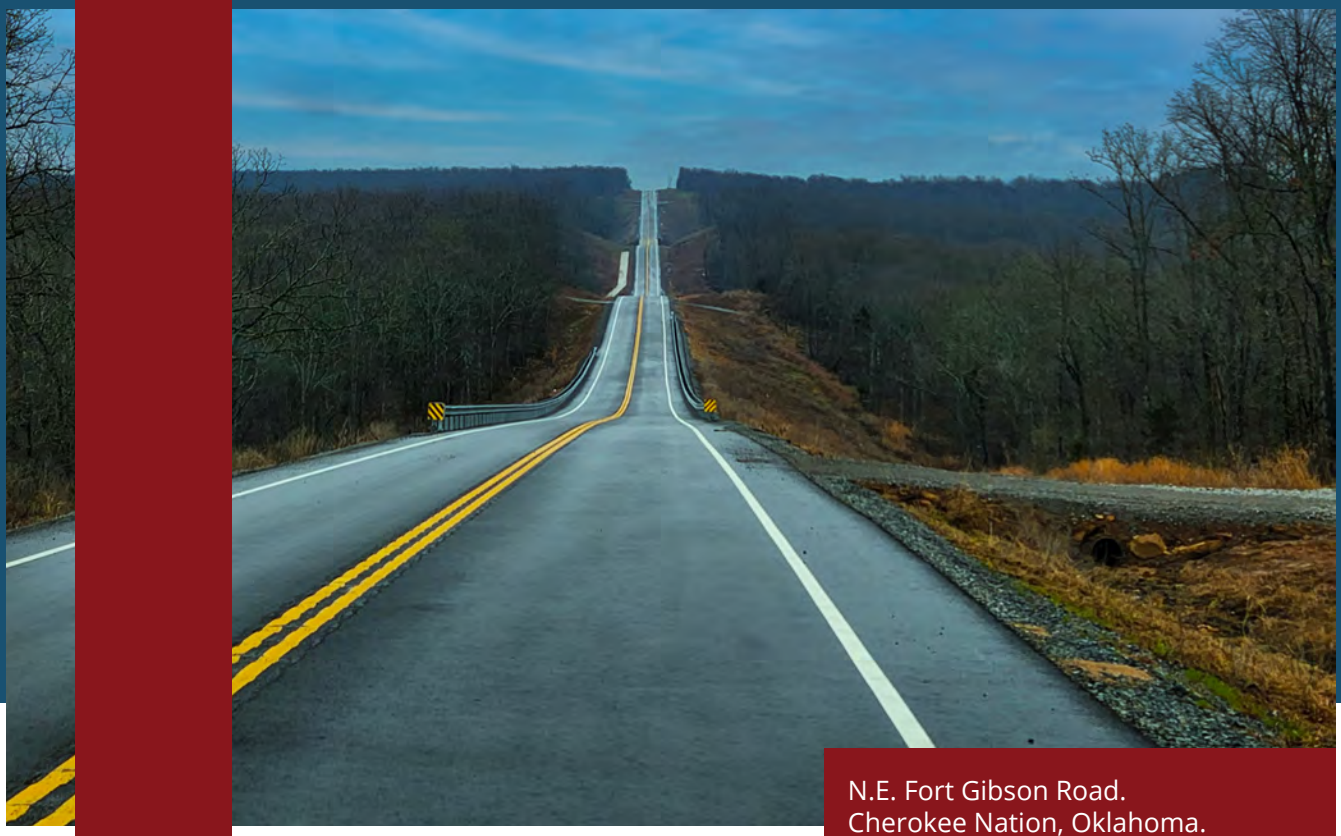
Unless otherwise noted, the source of the photos in this document is FHWA.

Funding for Tribes

The purpose of this document is to provide information to Tribes on new and existing highway and bridge transportation funding programs for which Tribes are eligible. This document does not include programs subject to an annual appropriation, which have not been funded by Congress.

Federal Role and Assistance

The Federal Highway Administration's (FHWA) Office of Federal Lands Highway, and the Bureau of Indian Affairs (BIA), provide funding and support for addressing the transportation needs of the 574 federally recognized Tribes. The FHWA's Office of Tribal Transportation provides stewardship and oversight for direct funding agreements with 135 of the federally recognized Tribes and provides support for all FHWA activities affecting Tribal transportation. The BIA provides support for the remaining Tribes.



N.E. Fort Gibson Road.
Cherokee Nation, Oklahoma.

Who to Contact

FHWA.

The FHWA Office of Tribal Transportation is Tribes' first point of contact for assistance with direct funding agreements with FHWA.

For more information about the Office of Tribal Transportation, please visit:

https://highways.dot.gov/federal-lands/programs-tribal

The FHWA Federal-aid Highway Division Offices are the face and voice of FHWA to the States. There is a Division Office located in every state, the district of Columbia and Puerto Rico. FHWA Division Offices provide stewardship, guidance, best practices, and technical assistance with contributions from FHWA's Headquarters and technical program staff, as needed. They also ensure that the overall objectives of the Federal-aid Highway Program are met and that Federal financial resources are distributed in accordance with applicable laws and regulations. Tribal facilities may be eligible for Federal-aid programs listed in this brochure.

To contact the appropriate Division Office for your location, please visit:

https://www.fhwa.dot.gov/about/field.cfm

BIA.

Tribes that work directly with the BIA through program agreements or other contract authorities should contact the BIA Department of Transportation and/or the Tribe's BIA Regional Transportation Representative for more information on administration and program assistance.

For more information on BIA's role, please visit:

https://www.bia.gov/bia/ois/division-transportation

How to Access Funding

Federal funds are provided to Tribes within specific programs, and each program has its own eligibility criteria for allowable work. The intent of this document is to help increase Tribes' awareness of available highway and bridge Federal funds and the associated eligibility criteria.

- **Formula Funding:**
  The FHWA Office of Tribal Transportation distributes Federal transportation funds as they become available. TTP formula funds (known as Tribal shares) are distributed to Tribes and the BIA. Some Tribes receive this funding according to their program agreements with FHWA. The FHWA Office of Tribal Transportation also sends funds to the BIA for Tribes that have made other arrangements to access the program. Other formula funding is distributed to State DOTs by statute, which Tribal roads and bridges may be eligible for. See your respective State DOT for your location for specifics on those funding opportunities.

  For more information, please visit: **https://highways.dot.gov/federal-lands/programs-tribal/finance**.

- **Competitive Funding Opportunities (Grants):**
  Tribes are eligible to apply for a number of USDOT competitive funding opportunities. Examples include the new Safe Streets and Roads for All program; Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) program; Charging and Fueling Infrastructure program; Bridge Investment program; Reconnecting Communities Pilot program; and Rural Surface Transportation Grants program; and others. Generally, competitive funding is made available via a Notice of Funding Opportunity (NOFO) published at Grants.gov.

N9402 Bridge.
Navajo Nation, Arizona.

How Can We Help You?

FHWA encourages Tribes to take full advantage of BIL's opportunities, to more fully realize the transformative effects from this historic increase in funding. FHWA supports Tribes by prioritizing the critical technical assistance tools that help Tribes plan, fund, and execute successful projects.

- **FHWA Office of Tribal Transportation:** FHWA regularly provides technical and program support to its Tribal government stakeholders by offering technical assistance and project delivery training sessions on a regular basis at Tribal transportation summits and meetings, as well as on request.

  Please contact your Tribal Coordinator or other FHWA Office of Tribal Transportation staff member at **https://highways.dot.gov/federal-lands/programs-tribal/contact-info** to discuss your needs or learn more about how to access training.

- **Tribal Technical Assistance Program (TTAP):** FHWA's Tribal Technical Assistance Program (TTAP) (**https://www.fhwa.dot.gov/clas/ttap/**) provides comprehensive transportation training and technical assistance to Tribal communities, building skills and expertise to improve the safety and maintenance of Tribal roads and the professional development of the Tribal transportation workforce.

- BIL Technical Assistance/Local Support: FHWA is here to support local public agencies with technical assistance for planning, design, construction, preserving, and improving public roads and in the stewardship of Federal funds.

  Technical Assistance/Local Support webpage: https://www.fhwa.dot.gov/bipartisan-infrastructure-law/technical_support.cfm

HIGHWAY AND BRIDGE PROGRAMS: TRIBAL ELIGIBILITY

Program	Funding (FY22-26)	New Program	Formula/ Competitive	Purpose
Dedicated Tribal Programs				
Tribal Transportation Program (TTP)	$3.01 B		F	Provide safe and adequate transportation and public road access.
Tribal High Priority Projects Program	$45 M		C	Funding for those whose annual allocation of funding received under the TTP is insufficient to complete the highest priority project.
Tribal Transportation Facility Bridge Program / Bridge Formula Program (BFP) Tribal Bridge Set-aside	$825 M		C*	Replace, rehabilitate, preserve, protect, and construct new bridges.
Tribal Transportation Facility Bridge Program / Bridge Investment Program (BIP) Tribal Bridge Set-aside	$200 M		C*	Replace, rehabilitate, preserve, protect, and construct new bridges.
Tribal Transportation Program Safety Fund (TTPSF)	$121 M		C	Prevent and reduce transportation-related injuries and fatalities on Tribal Lands.
Other Programs				
Accelerated Innovation Deployment (AID) Demonstration	$10 M		C	Provide funding as an incentive to accelerate the deployment and adoption of proven innovative practices and technologies.
Active Transportation Infrastructure Investment Program (ATIIP)	$200 M	NEW!	C	Supports active transportation networks and spines such as safe bike paths and walking trails
Bridge Formula Program (BFP)	$27.5 B		F	Fund the replacement, rehabilitation, preservation, and construction of highway bridges.
Bridge Investment Program	$12.5 B		C	Fund the planning and improvement of bridge condition, safety, efficiency, and reliability.
Charging and Fueling Infrastructure	$2.5 B	NEW!	C	Support deployment of EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure.
Highway Safety Improvement Program (HSIP)			F	Reduce traffic fatalities and serious injuries on all public roads.
Infrastructure For Rebuilding America (INFRA) (Nationally Significant Freight and Highway Projects)	$7.25 B		C	Advance multimodal freight and highway projects of national or regional significance that improve the safety, efficiency, and reliability of the system.
Local and Regional Project Assistance (RAISE)	$8.275 B		C	Fund transportation infrastructure projects with significant local or regional impact.
National Culvert Removal, Replacement, and Restoration Grants	$1 B	NEW!	C	Improve or restore passage for anadromous fish.
National Infrastructure Project Assistance "Mega-projects"	$5 B	NEW!	C	Support multijurisdictional or regional projects of significance that may also cut across multiple modes of transportation.
National Scenic Byways	$22 M		C	Fund improvements that merit national recognition for outstanding scenic, historic, cultural, natural recreational and archeological qualities.

* See additional details in the program description.

HIGHWAY AND BRIDGE PROGRAMS: TRIBAL ELIGIBILITY

Program	Funding (FY22-26)	New Program	Formula/ Competitive	Purpose
Other Programs (Cont.)				
Nationally Significant Federal Lands and Tribal Projects Program (NSFLTP)	$275 M		C	Address significant challenges across the nation for transportation facilities that serve Federal and tribal lands.
Pollinator-Friendly Practices on Roadsides and Highway Rights-of-Way	$10 M	NEW!	C	Supports activities to benefit pollinators on roadsides and highway rights-of-way.
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)	$1.4 B	NEW!	C	Support resilience improvements.
Reconnecting Communities Pilot	$1 B	NEW!	C	Restore community connectivity by removing highways that create barriers.
Reduction of Truck Emissions at Port Facilities	$400 M	NEW!	C	Reduce truck idling and emissions at ports.
Rural Surface Transportation Grants	$2 B	NEW!	C	Improve and expand surface transportation infrastructure in rural areas.
Safe Streets and Roads for All	$5 B	NEW!	C	Support local safety initiatives to prevent transportation-related deaths and serious injuries.
Strengthening Mobility and Revolutionizing Transportation (SMART) Grant Program	$500 M		C	Fund demonstration projects focused on advanced smart city or community technologies and systems to improve transportation efficiency and safety.
Transportation Alternatives	$7.2 B		C	Fund a variety of generally smaller-scale transportation projects.
Wildlife Crossing Pilot Program	$350 M	NEW!	C	Reduce the number of wildlife-vehicle collisions and improve habitat connectivity.

*See program for aditional details.

The table above is not fully inclusive of all potentially available programs. It omits programs that do not become active unless Congress passes an annual appropriations law to fund those programs.

The FHWA knows how critically important infrastructure funding is to Tribal governments. Be sure to contact FHWA to check on the latest funding opportunities, or visit:
https://highways.dot.gov/federal-lands/programs-tribal/contact-info

TRIBES ONLY

Tribal Transportation Program (TTP)

- **Purpose:** Provide safe and adequate transportation and public road access to and within Indian reservations, Indian lands, and Alaska Native Village communities.
- **Funding:** $3.01 billion

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$578 million	$590 million	$602 million	$613 million	$628 million

- **Program Type:** Formula.
- **Federal Share:** 100 percent.
- **Eligible activities:** Tribes can use these funds for eligible transportation activities such as planning, design, construction, and road and bridge maintenance.
- **BIL Changes to TTP:**
  - ◊ Tribal bridges: Eliminates the current TTP set-aside of 3 percent for the Tribal Transportation Bridge Program, and instead funds Tribal bridges via set-asides from the Bridge Investment Program and Bridge Formula Program.
  - ◊ Sets aside $9 million per year from the TTP to fund the Tribal High Priority Projects Program. (See below for additional detail on this program).
  - ◊ Increases set-aside for the TTP Safety Fund (TTPSF) from 2 percent to 4 percent. (See below for additional detail on the TTPSF.)
  - ◊ Updates bridge terminology, replacing language referring to “structurally deficient” or “functionally obsolete” bridges with terminology such as “in poor condition.”
- **Additional Information and Assistance**
  - ◊ No Benefit Cost Analysis Requirement.
  - ◊ Program website: **https://highways.dot.gov/federal-lands/programs-tribal**
  - ◊ FHWA Tribal Transportation Program Overview: **https://highways.dot.gov/federal-lands/programs-tribal/program-overview**

TRIBES ONLY

Tribal High Priority Projects Program

- **Purpose:** Provide funding to an Indian Tribe or a governmental subdivision of an Indian Tribe whose annual allocation of funding received under the TTP is insufficient to complete the highest priority project of the Tribe, or to any Indian Tribe that has an emergency or disaster occur on a tribal transportation facility that renders the facility impassible or unusable and which is not eligible under the Emergency Relief for Federally Owned Roads (ERFO) program.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$9 million	$9 million	$9 million	$9 million	$9 million

- **Program Type:** Competitive.
- **Federal Share:** Up to 100 percent.
- **Eligible activities:** Highest priority project or disaster or emergency to an eligible NTTFI transportation facility.
- **Additional Information and Assistance**
  - ◊ No Benefit Cost Analysis Requirement.
  - ◊ BIL marks the first time in over ten years that a program focused on Tribal high priority projects has received funding.
  - ◊ $9 million per year of program funds is a set-aside from the TTP.
  - ◊ In the event of an emergency or disaster, funding under the Tribal High Priority Projects Program can be used if the work is not otherwise eligible under the ERFO or Emergency Relief (ER) Programs. For more information on ERFO, please visit **https://highways.dot.gov/federal-lands/programs/erfo**. For more information on FHWA's overall ER programs, please visit **https://www.fhwa.dot.gov/programadmin/erelief.cfm**.
  - ◊ Program Website and application information: **https://highways.dot.gov/federal-lands/programs-tribal/high-priority-projects**

TRIBES ONLY

Tribal Transportation Facility Bridge Program

The BIL funds the Tribal Bridge Program with set-asides from the Bridge Formula Program (BFP) and the Bridge Investment Program (BIP). Note that the two set-asides below (the Bridge Formula Program and the Bridge Investment Program) are jointly administered under the Tribal Transportation Bridge program, including issuance of guidance, funding availability, and overall program administration.

Bridge Formula Program (BFP) Tribal Bridge Set-aside

- **Purpose:** Funding to replace, rehabilitate, preserve, protect, and construct new bridges.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$165 million	$165 million	$165 million	$165 million	$165 million

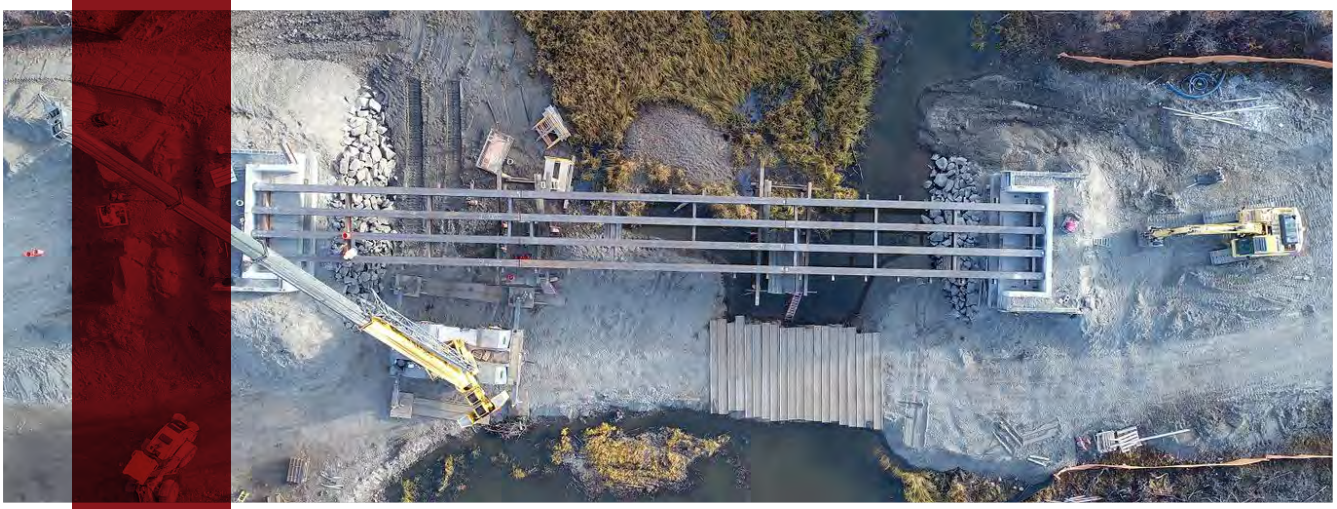
- **Program Type:** Competitive. Projects will be programmed for funding after a completed application package is received and accepted by the FHWA.
- **Federal Share:** 100 percent.
- **Eligible activities:** Planning, design, engineering, preconstruction, construction, and inspection of new or replacement tribal transportation facility bridges; replace, rehabilitate, seismically retrofit, paint, apply calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and deicing composition; or implement any countermeasure for tribal transportation facility bridges classified as in poor condition, having a low load capacity, or needing highway geometric improvements, including multiple-pipe culverts.
- **Additional Information and Assistance**
  - ◊ Of the BFP funds appropriated from the General Fund per FY for this program, 3 percent are set aside for Tribal transportation facility bridges, which shall be administered as if made available under the Tribal Transportation Program.
  - ◊ Please refer to the Bridge Formula Program for details on an additional 15 percent BFP set-aside for “off-system” bridges.
  - ◊ Please reach out to your respective State DOT for specifics on their BFP funding opportunities.
  - ◊ The set aside follows the criteria in 23 CFR 661 for ranking applications.
  - ◊ No Benefit Cost Analysis Requirement.

Bridge Investment Program (BIP) Tribal Bridge Set-aside

- **Purpose:** Funding to replace, rehabilitate, preserve, protect, and construct new bridges.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$36 million	$38 million	$40 million	$42 million	$44 million

- **Program Type:** Competitive.
- **Federal Share:** 100 percent for the funds from the General Fund.
- **Eligible activities:** To carry out any planning, design, engineering, preconstruction, construction, and inspection of new or replacement tribal transportation facility bridges; replace, rehabilitate, seismically retrofit, paint, apply calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and deicing composition; or to implement any countermeasure for tribal transportation facility bridges classified as in poor condition, having a low load capacity, or needing highway geometric improvements, including multiple-pipe culverts.
- **Additional Information and Assistance**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ An average of $40 million per year is set aside for Tribal transportation facility bridges, which are considered part of the Tribal Transportation Program.



Fort Yukon Ivar's Bridge Replacement under construction.
Fort Yukon, Alaska.

TRIBES ONLY

Tribal Transportation Program Safety Fund (TTPSF)

- **Purpose:** Funding dedicated to preventing and reducing transportation-related injuries and fatalities on Tribal Lands.
- **Funding:** The anticipated maximum available funding is presented below (rounded to the nearest tenths).

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$23.1 million	$23.6 million	$24.1 million	$24.5 million	$25.1 million

- **Program Type:** Competitive.
- **Federal Share:** 100 percent federal share. Applicants can propose a match.
- **Eligible projects/activities:**
  - ◊ Development and update of transportation safety plans
  - ◊ Crash data assessment, improvement, and analysis
  - ◊ Systemic roadway departure countermeasures
  - ◊ Infrastructure improvements and other eligible activities as listed in **23 U.S.C. 148(a)(4)**.
- **Additional Information and Assistance**
  - ◊ This program is a set-aside of the TTP. BIL increased the set-aside from 2 percent to 4 percent.
  - ◊ Program website: **https://highways.dot.gov/federal-lands/programs-tribal/safety/funds**
  - ◊ In addition to dedicated Tribal safety funding, safety projects on Tribal lands are also eligible for funding under other Federal-aid highway programs, including the Highway Safety Improvement Program (HSIP) and the Transportation Alternatives (TA) set-aside from the Surface Transportation Block Grant Program. (See below for additional information on HSIP and TA.).
  - ◊ No Benefit Cost Analysis Requirement.

Littlewater Chapter House Access Road.
Navajo Nation, New Mexico

Accelerated Innovation Deployment (AID) demonstration

- **Purpose:** Provide funding as an incentive to accelerate the deployment and adoption of proven innovative practices and technologies in highway transportation projects.
- **Funding:** $10 million for FY 2022.

Fiscal Year (FY)	2022
Amount	$10 million

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent. TTP funds may be used to meet matching or cost participation requirements.
- **Eligible projects/activities:** Eligible projects may involve any phase of a highway transportation project between project planning and project delivery including planning, financing, operation, structures, materials, pavements, environment, and construction. AID Demonstration projects must: 1) be eligible for assistance under title 23, United States Code; 2) address goals of FHWA's Technology and Innovation Deployment Program (TIDP); 3) pilot a proven transportation innovation for the applicant; and 4) be ready to initiate within six months of receiving award.
- **Additional Information and Assistance**
  - ◊ AID Demonstration is funded by the TIDP.
  - ◊ Program website: **https://www.fhwa.dot.gov/innovation/grants/**.

The Saint Michael Roadway Improvement Project. Tribal Village of Saint Michael Bering Sea, Alaska.

NEW!

Active Transportation Infrastructure Investment Program (ATIIP)

- **Purpose:** Enable communities to build from existing infrastructure for walking and biking to safely connect people to the destinations they travel to routinely, while also creating opportunities for sustainable transportation and recreation. Sec.11529.
- **Funding:** $45 million for FY 2023, $200 M FY22-26.

Fiscal Year (FY)	2023
Amount	$45 million

- **Program Type:** Competitive.
- **Federal Share:** May increase the Federal share of the cost of the eligible project up to 100 percent of the total project cost.
- **Eligible projects/activities:**
  - ◊ Fact Sheet: **https://www.railstotrails.org/media/1344243/caats_factsheet_12323.pdf**
  - ◊ Program Website: TBD

Green Bridge Rehabilitation Project under construction. Pawnee Nation, Oklahoma.

Bridge Formula Program (BFP)

- **Purpose:** Fund the replacement, rehabilitation, preservation, and construction of highway bridges.
- **Funding:** A minimum of 15 percent of each State's BFP apportionment shall be for use on "off-system" bridges (highway bridges located on public roads, other than bridges located on Federal-aid highways).

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$5.5 billion	$5.5 billion	$5.5 billion	$5.5 billion	$5.5 billion

- **Program Type:** Formula.
- **Federal Share:** 100 percent. No match required for funds used on an "off-system" bridge that is owned by a federally-recognized Tribe.
- **Eligible projects/activities:** Tribally owned bridges on tribal roads are eligible under the 15 percent set-aside for "off-system" bridges. Includes, but is not limited to, projects to replace, rehabilitate, preserve or protect one or more bridges.
- **Additional Information and Assistance:**
  - ◊ This 15 percent set-aside for "off-system" bridges is different than the 3 percent BFP Tribal set-aside for Tribal transportation facility bridges made available under the Tribal Transportation Program. See program for details.
  - ◊ BFP Fact Sheet: **https://www.fhwa.dot.gov/bipartisan-infrastructure-law/bfp.cfm**
  - ◊ Please reach out to your respective State DOT for specifics on their BFP funding opportunities.

Green Beret Bridge Replacement.
Northern Cheyenne Tribe.
Big Horn County, Montana.

Bridge Investment Program (BIP)

- **Purpose:** Fund the planning and improvement of bridge condition, safety, efficiency, and reliability.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$2.45 billion	$2.49 billion	$2.50 billion	$2.52 billion	$2.53 billion

- **Program Type:** Competitive.
- **Federal Share:** Flexible and in some instances higher than 80 percent based on project specifications. TTP funds may also be used as part of the non-federal match. Further details to follow.
- **Eligible projects/activities:** Includes, but is not limited to, projects to replace, rehabilitate, preserve or protect one or more bridges on the National Bridge Inventory. Also, projects to replace or rehabilitate culverts to improve flood control and improve habitat connectivity for aquatic species.
- **Additional Information and Assistance:**
  - ◊ Bridge Investment Program Program Fact Sheets and Guidance: **https://www.fhwa.dot.gov/bridge/bip/index.cf**

Rainbow Arch Historic Bridge Citizen Potawatomi Nation. Pottawatomie County, Oklahoma.

NEW!

Charging and Fueling Infrastructure

- **Purpose:** Fund the strategic deployment of publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along designated alternative fuel corridors and in communities.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$300 million	$400 million	$500 million	$600 million	$700 million

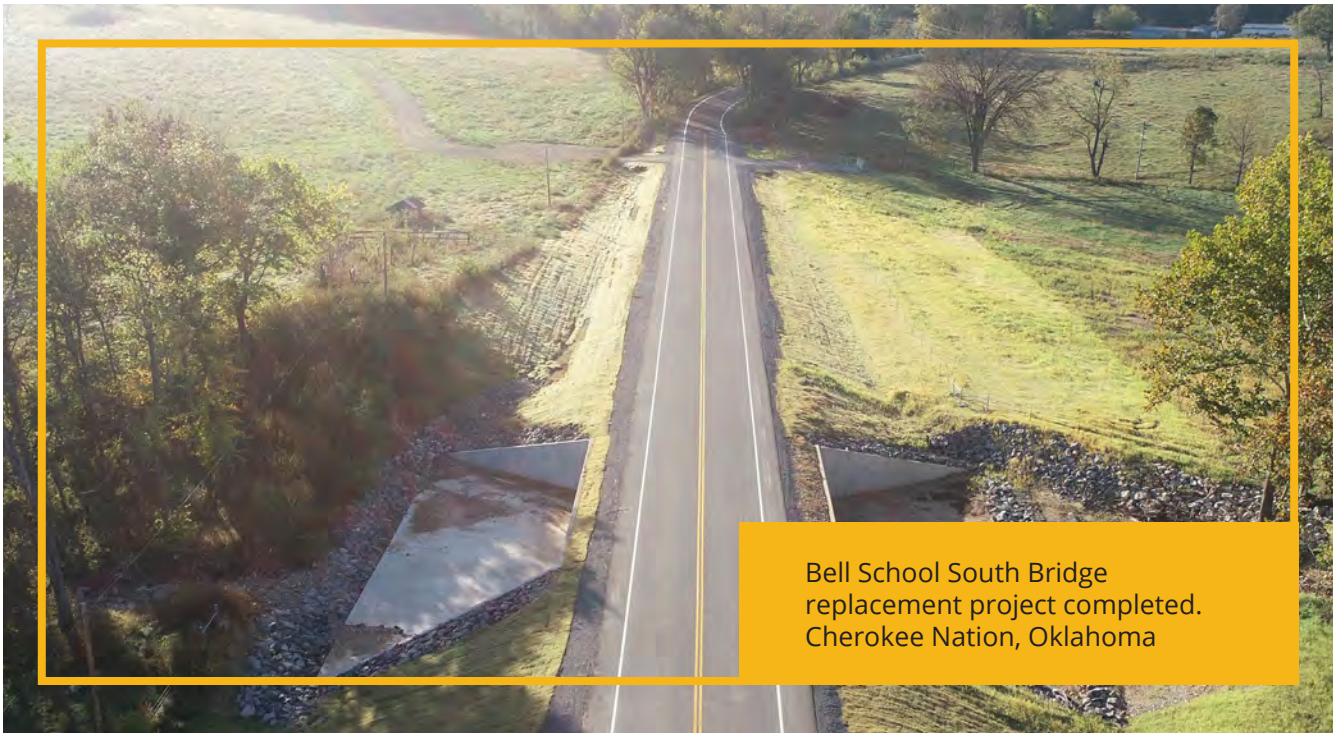
- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent.
- **Eligible projects/activities:** Acquisition and installation of publicly accessible charging or fueling infrastructure, or traffic control devices. For newly-installed infrastructure, the law allows use of funds to provide operating assistance for the first 5 years after installation.
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ DOT is required to update and redesignate alternative fuel corridors and establish a recurring process to regularly update and redesignate such corridors.
  - ◊ The law reserves 50 percent of the amounts made available each FY for Community Grants that are expected to reduce greenhouse gas emissions and to expand or fill gaps in access to publicly accessible charging and fueling infrastructure including development phase activities and acquisition and installation of infrastructure.
  - ◊ Charging and Infrastructure Discretionary Grant Program NOFO, Fact Sheets and Guidance are available at **https://www.fhwa.dot.gov/environment/cfi/.**

Highway Safety Improvement Program (HSIP)

- **Purpose:** Achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land.
- **Funding:** Of note, the funding for the Highway Safety Improvement Program is provided to State DOTs per statute. Please reach out to your respective State DOT for specifics on their HSIP funding opportunities.

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$2.980 billion	$3.044 billion	$3.110 billion	$3.177 billion	$3.246 billion

- **Program Type:** Formula.
- **Federal Share:** Flexible and in some instances higher than 80 percent based on project specifications. TTP funds may also be used as part of the non-federal match. Further details to follow.
- **Eligible projects/activities:**
  - ◊ HSIP Eligibility Guidance: **https://safety.fhwa.dot.gov/hsip/rulemaking/docs/BIL_HSIP_Eligibility_Guidance.pdf**
- **Additional Information and Assistance:**
  - ◊ Program webpage: **https://safety.fhwa.dot.gov/hsip/**



Bell School South Bridge replacement project completed. Cherokee Nation, Oklahoma

Infrastructure For Rebuilding America (INFRA) (Nationally Significant Freight and Highway Projects)

- **Purpose:** INFRA (known statutorily as Nationally Significant Multimodal Freight & Highway Projects) awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$1.64 billion	$1.64 billion	$1.64 billion	$1.54 billion	$1.54 billion

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent, with flexibility based on various project specifications.
- **Eligible projects/activities:** Projects that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Program website: **https://www.transportation.gov/grants/infra-grants-program**

Fort Yukon Ivar's Bridge Replacement completed.
Fort Yukon, Alaska.

Local and Regional Project Assistance Program (RAISE)

- **Purpose:** Capital investments in surface transportation that will have a significant local or regional impact.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$2.275 billion	$1.5 billion	$1.5 billion	$1.5 billion	$1.5 billion

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent, with flexibility for higher shares based on various project specifications. Further information to follow.
- **Eligible projects/activities:** Includes, but is not limited to, capital projects to highway, bridge, or other road projects eligible under title 23, intermodal projects; a project to replace or rehabilitate a culvert or prevent stormwater runoff for the purpose of improving habitat for aquatic species while advancing the goals of the existing Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program and projects investing in surface transportation facilities that are located on Tribal land and for which title or maintenance responsibility is vested in the Federal Government; and any other surface transportation infrastructure project that the Secretary considers to be necessary to advance the goals of the program). Planning projects which include: planning, preparation, or design of eligible surface transportation capital projects. Further information available in the NOFO.
- **Additional Information and Assistance:**
  - ◊ The Local and Regional Project Assistance program codifies the RAISE program, which was previously established through appropriations acts and was formerly known as TIGER and BUILD.
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Program website: **https://www.transportation.gov/RAISEgrants/about**

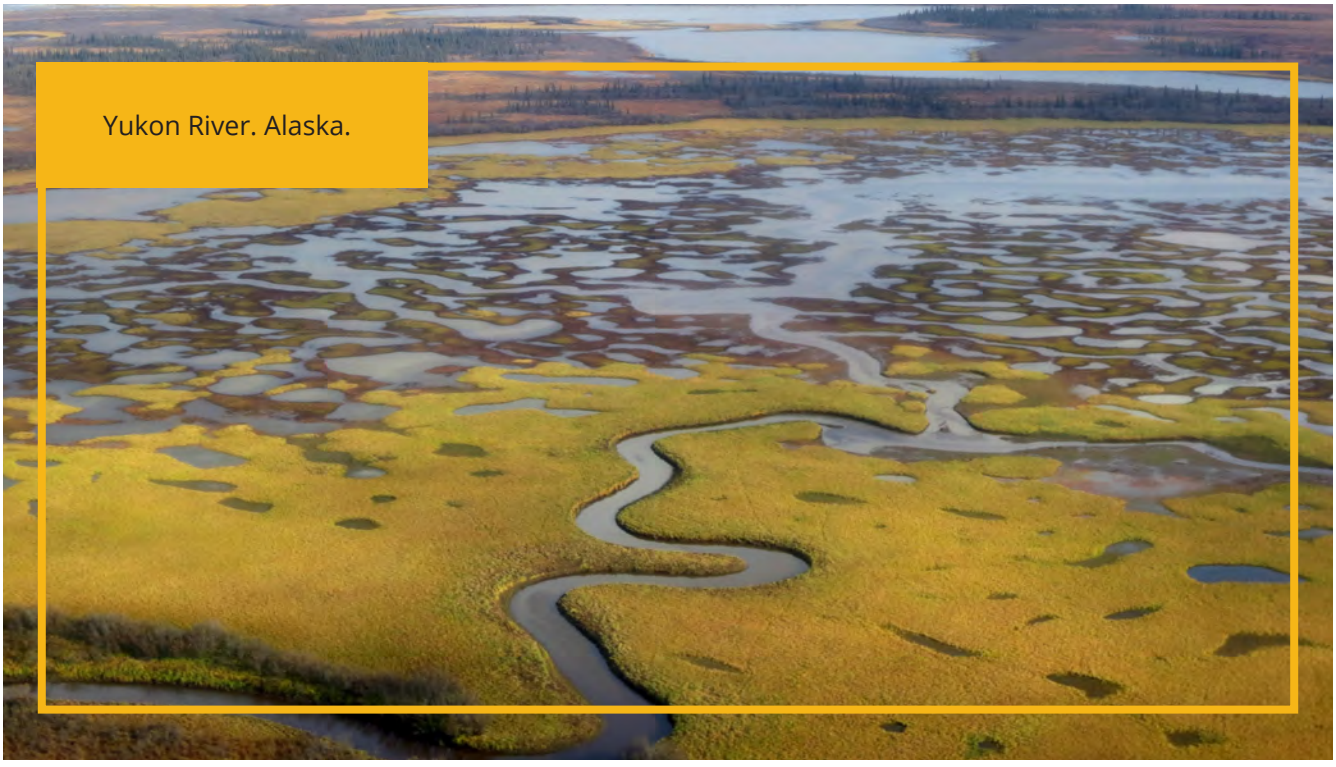
NEW!

National Culvert Removal, Replacement, and Restoration Grants

- **Purpose:** Fund projects that would improve or restore passage for anadromous fish.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$200 million	$200 million	$200 million	$200 million	$200 million

- **Program Type:** Competitive.
- **Federal Share:** 100 percent federally funded.
- **Eligible projects/activities:** Projects to replace, remove, or repair culverts or weirs that would meaningfully improve or restore fish passage for anadromous fish.
- **Additional Information and Assistance:**
  - ◊ National Culvert Removal, Replacement & Restoration Grants (Culvert Aquatic Organism Passage (AOP) Program): **https://www.fhwa.dot.gov/engineering/hydraulics/culverthyd/aquatic/culvertaop.cfm**
  - ◊ Fact Sheet: **https://www.fhwa.dot.gov/bipartisan-infrastructure-law/culverts_fact_sheet.cfm**.



Yukon River. Alaska.

NEW!

National Infrastructure Project Assistance "Mega-projects"

- **Purpose:** Provide funding through single-year or multiyear grant agreements for eligible surface transportation projects that support multijurisdictional or regional projects of significance that may also cut across multiple modes of transportation.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$1 billion	$1 billion	$1 billion	$1 billion	$1 billion

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent, with flexibility based on various project specifications. See NOFO for further details.
- **Eligible projects/activities:** Highway and bridge projects on the National Multimodal Freight Network, the National Highway Freight Network, or the National Highway System are eligible for the program. Other eligible projects are freight intermodal or freight rail projects that provide a public benefit, railway-highway grade separation or elimination projects, intercity passenger rail projects, and certain public transportation projects.
- **Additional Information and Assistance:**
  - ◊ Half of the funding is set aside for projects with costs of $500 million of more, and the other half is reserved for projects with costs of more than $100 million but less than $500 million.
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Program website: **https://www.transportation.gov/grants/mega-grant-program**
  - ◊ NOFO: **https://www.grants.gov/web/grants/view-opportunity.html?oppId=338855**

National Scenic Byways

- **Purpose:** Fund improvements, such as byway facilities, safety improvements, and interpretive information, along roads in the United States that merit recognition at the national level for their outstanding scenic, historic, cultural, natural recreational and archeological qualities.
- **Funding:**

Fiscal Year (FY)	2021	2022
Amount	$22 million	

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent, with flexibility for higher shares based on various project specifications.
- **Eligible projects/activities:**
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Program website: **https://fhwaapps.fhwa.dot.gov/bywaysp/**

Whitshed road bridge.
Cordova, Alaska.

Nationally Significant Federal Lands and Tribal Projects Program (NSFLTP)

- **Purpose:** Provide an opportunity to address significant challenges across the nation for transportation facilities that serve Federal and Tribal lands.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$130 million	$55 million	$55 million	$55 million	$55 million

- **Program Type:** Competitive.
- **Federal Share:** 100 percent federally-funded for Tribal projects.
- **Eligible projects/activities:** Construction, reconstruction, and rehabilitation of nationally-significant projects that have an estimated construction cost of at least $12.5 million, and within, adjacent to, or accessing Federal and Tribal lands.
- **Additional Information and Assistance:**
  - ◊ Program website: **https://highways.dot.gov/federal-lands/programs/**
  - ◊ Requires 50/50 split between Tribal and Federal lands projects under BIL.
  - ◊ Construction projects with an estimated cost equal to and exceeding $50 million receive priority consideration in the selection process.
  - ◊ BIL established a Federal share for Tribal projects of 100 percent.
  - ◊ BIL reduced the minimum eligible project cost from $25 million to $12.5 million.

Green Beret Bridge Replacement.
Northern Cheyenne Tribe.
Big Horn County, Montana.

NEW!

Pollinator-Friendly Practices on Roadsides and Highway Rights-of-Way

- **Purpose:** Provide grants to eligible entities to carry out activities to benefit pollinators on roadsides and highway rights-of-way, including the planting and seeding of native, locally-appropriate grasses and wildflowers, including milkweed. Under 23 USC 332.
  23 USC 332: Pollinator-friendly practices on roadsides and highway rights-of-way (house.gov)
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$2 million	$2 million	$2 million	$2 million	$2 million

- **Program Type:** Competitive.
- **Federal Share:** 100 percent.
- **Eligible projects/activities:** Amount of grants is based on the number of pollinator-friendly practices the eligible entity has implemented or plans to implement; and each grant cannot exceed $150,000.
- **Additional Information and Assistance:**
  - ◊ Program Website: **https://www.environment.fhwa.dot.gov/env_topics/ecosystems/pollinators.aspx**
  - ◊ IIJA: SEC. 11528 and **23 USC 332: Pollinator-friendly practices on roadsides and highway rights-of-way (house.gov)**

NEW! Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Discretionary Grants

- **Purpose:** To support resilience improvements, including planning, improvements, community resilience, and evacuation routes, and at-risk coastal infrastructure.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$500 million	$250 million	$300 million	$300 million	$300 million

- **Program Type:** Competitive. Eligible entities must apply to DOT for grants.
- **Federal Share:** up to 80 percent, with flexibility for higher shares based on various project specifications.
- **Eligible projects/activities:** Projects may include the use of natural infrastructure or the construction or modification of storm surge, flood protection, or aquatic ecosystem restoration elements that are functionally connected to a transportation improvement. Resilience planning activities, including resilience improvement plans, evacuation planning and preparation, and capacity-building, construction activities (oriented toward resilience), construction of (or improvement to) evacuation routes.
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ PROTECT Formula Program Guidance: **https://www.fhwa.dot.gov/environment/protect/discretionary/**
  - ◊ Fact Sheet: **https://www.fhwa.dot.gov/bipartisan-infrastructure-law/promote.cfm**

Oglala Sioux Tribe.
Cheyenne River Bridge Replacement Project.
Custer County, South Dakota.

NEW!

Reconnecting Communities Pilot

- **Purpose:** Restore community connectivity by removing, retrofitting, or mitigating highways or other transportation facilities that create barriers to community connectivity.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Planning	$50 million	$50 million	$50 million	$50 million	$50 million
Capital Construction	$145 million	$148 million	$150 million	$152 million	$155 million
Total	$195 million	$198 million	$200 million	$202 million	$205 million

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent.
- **Eligible projects/activities:**
  The program makes available two types of grants:
  - ◊ Planning grants of up to $2 million.
  - ◊ Capital construction grants of $5 million or greater.
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Owners of eligible facilities are eligible to apply for these grants, and they may partner with any entity eligible for a planning grant. Such projects could include the removal and replacement of an eligible facility.
  - ◊ Program website: **https://www.transportation.gov/grants/reconnecting-communities/reconnecting-communities**
  - ◊ Fact Sheet: **https://www.transportation.gov/grants/reconnecting-communities/reconnecting-communities-pilot-program-fact-sheet.**

NEW!

Reduction of Truck Emissions at Port Facilities

- **Purpose:** To reduce truck idling and emissions at ports, including through the advancement of port electrification.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$80 million	$80 million	$80 million	$80 million	$80 million

- **Program Type:** Competitive.
- **Federal Share:** 80 percent.
- **Eligible projects/activities:** The program includes competitive grants to test, evaluate, and deploy projects that reduce port-related emissions.
- **Additional Information and Assistance:**
  - ◊ TTP funds may be used to meet matching or cost participation requirements.
  - ◊ Any entity having authority over a port facility or inter modal port transfer facility is eligible (as well as entities that test or evaluate technologies that reduce emissions at port facilities)..
  - ◊ Study: The program also includes a study to address how ports and intermodal port transfer facilities would benefit from increased opportunities to reduce emissions at ports, and how emerging technologies and strategies can contribute.
  - ◊ Fact Sheet: **https://www.fhwa.dot.gov/bipartisan-infrastructure-law/rtep.cfm**

Green Beret Bridge Replacement.
Northern Cheyenne Tribe.
Big Horn County, Montana.

NEW!

Rural Surface Transportation Grants

- **Purpose:** Improve and expand surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve the quality of life.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$300 million	$350 million	$400 million	$450 million	$500 million

- **Program Type:** Competitive.
- **Federal Share:** 80 percent, with flexibility for higher shares based on various project specifications. See NOFO for further details. TTP funds may be used to meet matching or cost participation requirements.
- **Eligible projects/activities:**
  - ◊ Highway, bridge or tunnel projects eligible under National Highway Performance Program (NHPP), Surface Transportation Block Grant (STBG) Program, or the Tribal Transportation Program;
  - ◊ Highway freight projects eligible under the National Highway Freight Program;
  - ◊ Highway safety improvement projects; and
  - ◊ Highway and bridge projects that improve access and support the rural economy, among others.
- **Additional Information and Assistance:**
  - ◊ The BIL defines a "rural area" as "an area that is outside an urbanized area with a population of over 200,000."
  - ◊ Maximum grant amount is $25 million.
  - ◊ Program website: **https://www.transportation.gov/grants/rural-surface-transportation-grant**
  - ◊ Program part of the larger Rural Opportunities to Use Transportation for Economic Success (ROUTES), **https://www.transportation.gov/rural.**

Safe Streets and Roads for All

- **Purpose:** Support local initiatives to prevent transportation-related deaths and serious injuries.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$1 billion	$1 billion	$1 billion	$1 billion	$1 billion

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent.
- **Eligible projects/activities:** Grant funding may be used for planning grants to develop comprehensive safety action plans, and 40 percent of the funding is set aside for this use each fiscal year. Funding may also be used for planning, design, and development activities for infrastructure projects and other strategies identified in such action plans.
- **Additional Information and Assistance:**
  - ◊ Program website: **https://www.transportation.gov/SS4A**

Traffic Calming Ahead sign.
Salt River Pima-Maricopa Indian Community.
Scottsdale, Arizona.

Strengthening Mobility and Revolutionizing Transportation (SMART) Program

- **Purpose:** Conduct demonstration projects focused on advanced smart city or community technologies and systems in a variety of communities to improve transportation efficiency and safety.
- **Funding:** $500 million

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$100 million	$100 million	$100 million	$100 million	$100 million

- **Program Type:** Competitive.
- **Federal Share:** Up to 100 percent.
- **Eligible projects/activities:** May be used to carry out a project that demonstrate at least one of the following: coordinate automation, connected vehicles, intelligent sensor-based infrastructure, system integration, commerce delivery and logistics, leveraging use of innovative aviation technology, smart grid, and smart technology traffic signals.
- **Additional Information and Assistance:**
  - ◊ Cost sharing or matching is not required for Stage 1: Planning and Prototyping.
  - ◊ SMART Program website: **https://www.transportation.gov/grants/SMART**.
  - ◊ Fact Sheet: **https://www.transportation.gov/grants/smart/smart-grants-fact-sheet**.

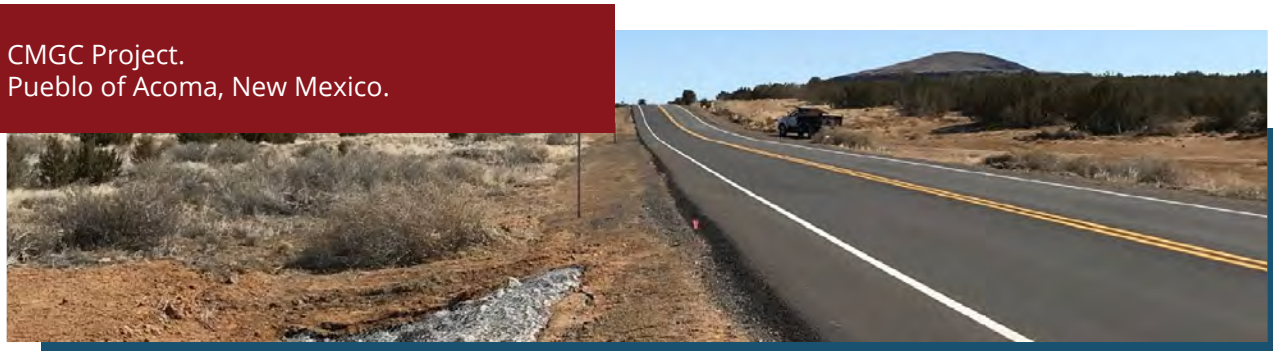
Transportation Alternatives

- **Purpose:** Set-Aside from the **Surface Transportation Block Grant** (STBG) Program to provide funding for a variety of generally smaller-scale transportation projects.
- **Funding:** Of note, the funding for the Transportation Alternatives Program is provided to State DOTs per statute. Please reach out to your respective State DOT for specifics on their TA funding opportunities.

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$1.384 billion	$1.411 billion	$1.439 billion	$1.468 billion	$1.498 billion

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent, with flexibility for higher shares. See Fact Sheet link below. TTP funds may be used to meet matching or cost participation requirements.
- **Eligible activities:** Pedestrian and bicycle facilities; construction of turnouts, overlooks, and viewing areas; community improvements such as historic preservation and vegetation management; environmental mitigation related to stormwater and habitat connectivity; recreational trails; safe routes to school projects; and vulnerable road user safety assessments.
- **Additional Information and Assistance:**
  - ◊ No Benefit Cost Analysis Requirement.
  - ◊ Funding for this program is provided to State DOTs per statute. Please reach out to your respective State DOT for specifics on funding opportunities.
  - ◊ Program website: **https://www.fhwa.dot.gov/environment/transportation_alternatives/**
  - ◊ Fact Sheet: **https://www.fhwa.dot.gov/bipartisan-infrastructure-law/ta.cfm**

CMGC Project.
Pueblo of Acoma, New Mexico.



NEW!

Wildlife Crossing Pilot Program

- **Purpose:** Fund projects that seek to reduce the number of wildlife-vehicle collisions and improve habitat connectivity.
- **Funding:**

Fiscal Year (FY)	2022	2023	2024	2025	2026
Amount	$60 million	$65 million	$70 million	$75 million	$80 million

- **Program Type:** Competitive.
- **Federal Share:** Up to 80 percent. TTP funds may be used to meet matching or cost participation requirements.
- **Eligible projects/activities:** Projects likely to protect motorists and wildlife by reducing the number of wildlife-vehicle collisions and improve habitat connectivity for terrestrial and aquatic species.
- **Additional Information and Assistance:**
  - ◊ Program Website: **https://highways.dot.gov/federal-lands/programs/wildlife-crossings**
  - ◊ Not less than 60 percent of grant funds each fiscal year are reserved for projects in rural areas.

North Valley Creek Bridge
Replacement.
Flathead Indian Reservation
Arlee, Montana.

U.S. Department of Transportation
Federal Highway Administration

Office of Tribal Transportation

APPENDIX 2: COMPREHENSIVE LIST OF DISCRETIONARY GRANTS

Federal Grants and Programs

Roads, Bridges, and Major Projects

Table 1: Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD)

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	The Advanced Transportation Technologies & Innovative Mobility Deployment program provides competitive grants to deploy, install, and operate advanced transportation technologies.
Total Funding Available	$300,000,000
Eligible Uses	Projects should improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment
Eligible Recipients	State, local, or Tribal government, a transit agency, metropolitan planning organization, or a multi-jurisdictional group or a consortia of research institutions or academic institutions
Category	Roads, Bridges and Major Projects
Link	*Advanced Transportation Technologies and Innovative Mobility Deployment | US Department of Transportation*

Table 2: Bridge Investment Program (BIP)

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Supports projects to improve bridge and culvert condition, safety, efficiency, and reliability. Intended to reduce the number of bridges in poor condition, or in fair condition at risk of declining into poor condition. BIP has set asides for Tribal Bridges and Planning Grants.
Total Funding Available	$12,200,000,000 An average of $40,000,00 set-aside for per fiscal year for Tribal transportation facility bridges $20,000,000 set-aside for Planning, Feasibility Analysis, and Revenue Forecasting Up to five percent of BIP funding per year to be used for eligible projects consisting solely of culvert replacement or rehabilitation of bridge-sized culverts.
Eligible Uses	Projects to replace, rehabilitate, preserve, or protect one or more bridges on the National Bridge Inventory. Projects to replace or rehabilitate culverts to improve flood control and improve habitat connectivity for aquatic species. Categories include: • Planning Level Projects • Bridge Projects (<$100 million) • Large Bridge Projects (>$100 million)
Eligible Recipients	State, metropolitan planning organization (representing an area with a population of more than 200,000), local government, special purpose district or public authority with a transportation function, Federal land management agency, Tribal government.
Category	Roads, Bridges and Major Projects
Link	*Bridge Investment Program | US Department of Transportation*

Table 3: Congestion Relief Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Advance innovative, integrated, and multimodal solutions to reduce congestion and the related economic and environmental costs in the most congested metropolitan areas with an urbanized area population of one million+.
Total Funding Available	$250,000,000
Eligible Uses	Planning, design, implementation, and construction activities to achieve the program goals, including deployment and operation of integrated congestion management systems, systems that implement or enforce high occupancy vehicle toll lanes or pricing strategies, or mobility services; and incentive programs that encourage carpooling, nonhighway travel during peak periods, or travel during nonpeak periods. Subject to certain requirements and approval by the Secretary, provides for tolling on the Interstate System as part of a project conducted with a grant under the program.
Eligible Recipients	State, Metropolitan Planning Organization, city, or municipality.
Category	Roads, Bridges and Major Projects
Link	*Bipartisan Infrastructure Law - Congestion Relief Program Fact Sheet | Federal Highway Administration (dot.gov)*

Table 4: Local and Regional Project Assistance Grants (RAISE)

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The RAISE program, previously known as Better Utilizing Investments, to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. RAISE provides eligibility requirements that allow project sponsors at the State and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are often more difficult to support through traditional DOT programs. Grants are awarded on a competitive basis for projects that will have a significant local/regional impact.
Total Funding Available	$7,500,000,000
Eligible Uses	Projects eligible under RAISE include a highway or bridge project eligible for assistance under title 23, United States Code; a public transportation project eligible for assistance under chapter 53 of title 49, United States Code; a passenger rail or freight rail transportation project eligible for assistance under title 49, United States Code; a port infrastructure investment, including inland port infrastructure and a land port-of-entry; the surface transportation components of certain eligible airport projects; a project for investment in a surface transportation facility located on Tribal land, the title or maintenance responsibility of which is vested in the Federal Government; a project to replace or rehabilitate a culvert or prevent stormwater runoff for the purpose of improving habitat for aquatic species; and any other surface transportation infrastructure project that the Secretary considers to be necessary to advance the goal of the program.
Eligible Recipients	(A) A State; (B) the District of Columbia; (C) any territory or possession of the United States; (D) a unit of local government; (E) a public agency or publicly chartered authority established by 1 or more States; (E) a special purpose district or public authority with a transportation function, including a port authority; (F) a Tribal government or a consortium of Tribal governments; (G) a partnership

	between Amtrak and 1 or more entities described in (A) through (F); and (H) a group of entities described in (A) through (G).
Category	Roads, Bridges and Major Projects
Link	*About RAISE Grants | US Department of Transportation*

Table 5: National Culvert Removal, Replacement, and Restoration Grant

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The Office of the Secretary's National Culvert Removal, Replacement and Restoration program provides supplemental funding for grants to a State, local government, or Tribe on a competitive basis for projects that replace, remove, and/or repair culverts or weirs.
Total Funding Available	$1,000,000,000
Eligible Uses	Eligible projects include the replacement, removal, and repair of culverts or weirs that: (1) would meaningfully improve or restore fish passage for anadromous fish; and (2) with respect to weirs, may include (A) infrastructure to facilitate fish passage around or over the weir and (B) weir improvements.
Eligible Recipients	(1) A State; (2) a unit of local government; or (3) Tribe.
Category	Roads, Bridges, and Major Projects
Link	*Aquatic Organism Passage - Culvert Hydraulics - Hydraulics - Bridges & Structures - Federal Highway Administration (dot.gov)*

Table 6: National Infrastructure Project Assistance (Mega Projects)

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The National Infrastructure Project Assistance Program will support large, complex projects that are difficult to fund by other means and likely to generate national or regional economic, mobility, or safety benefits.
Total Funding Available	$5,000,000,000
Eligible Uses	Projects eligible under the Mega program include: 1. a highway or bridge project carried out on: the National Multimodal Freight Network; the National Highway Freight Network; or the National Highway System; 2. a freight intermodal (including public ports) or freight rail project that provides a public benefit; 3. a railway-highway grade separation or elimination project; 4. an intercity passenger rail project; and 5. public transportation projects that are eligible for Federal Transit Administration funding of title 49, United States Code, and are part of a project described above.
Eligible Recipients	(A) A State or a group of States; (B) a metropolitan planning organization; (C) a unit of local government; (D) a political subdivision of a State; (E) a special purpose district or public authority with a transportation function, including a port authority;(F) a Tribal government or a consortium of Tribal governments;(G) a partnership between Amtrak and 1 or more entities described in subparagraphs (A) through (F); and (H) a group of entities described in any of subparagraphs (A) through (G).
Category	Roads, Bridges, and Major Projects
Link	*The Mega Grant Program | US Department of Transportation*

Table 7: Nationally Significant Federal Lands and Tribal Projects

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	The Nationally Significant Federal Lands and Tribal Projects program provides funding for the construction, reconstruction, and rehabilitation of nationally significant Federal lands transportation projects and Tribal transportation projects.
Total Funding Available	$275,000,000
Eligible Uses	Eligible projects are projects that are on Federal lands, a federal lands access facility, or a Tribal transportation facility.
Eligible Recipients	Any entity eligible to receive funding under the Tribal Transportation Program, Federal Lands Transportation Program, or Federal Lands Access Program. In addition, a State, county, or local government may apply if sponsored by an eligible Federal land management agency or Tribe.
Category	Roads, Bridges and Major Projects
Link	*Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program | FHWA (dot.gov)*

Table 8: Nationally Significant Freight and Highway Projects (INFRA)

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The Nationally Significant Freight and Highway Projects program (INFRA) awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas.
Total Funding Available	$7,250,000,000 $750,000,000 set aside for State Incentives Pilot Program
Eligible Uses	Projects that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.
Eligible Recipients	(A) A State or a group of States.(B) A metropolitan planning organization that serves an urbanized area (as defined by the Bureau of the Census) with a population of more than 200,000 individuals.(C) A unit of local government or a group of local governments.(D) A political subdivision of a State or local government.(E) A special purpose district or public authority with a transportation function, including a port authority.(F) A Federal land management agency that applies jointly with a State or group of States.(G) A Tribal government or a consortium of Tribal governments.(H) A multistate corridor organization.(I) A multistate or multijurisdictional group of entities described in this paragraph.
Category	Roads, Bridges and Major Projects
Link	*Infrastructure for Rebuilding America (INFRA) Grant Program | US Department of Transportation*

Table 9: Rural Surface Transportation Grant Program

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	Rural Surface Transportation Grant Program will support projects to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.
Total Funding Available	$2,000,000,000
Eligible Uses	Highway, bridge, or tunnel projects eligible under the National Highway Performance Program, STBG Program or the Tribal Transportation Program; highway freight project eligible under the National Highway Performance Program; highway safety improvement project; project on a publicly-owned highway or bridge improving access to certain facilities that support the economy of a rural area; integrated mobility management system, transportation demand management system, or on-demand mobility services.
Eligible Recipients	State, Regional transportation planning organizations, Local governments, Tribal governments
Category	Roads, Bridges and Major Projects
Link	*Rural Surface Transportation Grant Program (Rural) | US Department of Transportation*

Table 10: Strategic Innovation for Revenue Collection (Set-Aside)

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Requires Department of Transportation to evaluate the feasibility of a road usage fee and other user-based alternative revenue mechanisms to help maintain the long-term solvency of the Highway Trust Fund, through pilot projects at the State, local, and regional level.
Total Funding Available	$75,000,000
Eligible Uses	Road usage fee and other user-based alternative revenue mechanisms projects.
Eligible Recipients	States, Metropolitan Planning Organizations, and Local governments
Category	Roads, Bridges and Major Projects
Link	*Strategic Innovation for Revenue Collection (SIRC) Fact Sheet | Federal Highway Administration (dot.gov)*

Table 11: Tribal High Priority Projects Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	The Tribal High Priority Projects Program provides funding to Tribes or a governmental subdivision of a Tribe whose annual allocation of funding received under the Tribal Transportation Program is insufficient to complete the highest priority project of the Tribe, or to any Tribe that has an emergency or disaster occur on a Tribal transportation facility that renders the facility impassible or unusable.
Total Funding Available	$45,000,000
Eligible Uses	Construction activities, including preliminary engineering and construction engineering, related to Tribes highest priority projects that have insufficient funding to be completed, emergency or disaster related projects.
Eligible Recipients	Sovereign Federally recognized Tribal governments

Category	Roads, Bridges and Major Projects
Link	*Tribal HPP Program | FHWA (dot.gov)*

Table 12: Reconnecting Communities Pilot Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Reconnecting Communities Pilot Program will restore community connectivity by removing, retrofitting, or mitigating highways or other transportation facilities that create barriers to community connectivity, including to mobility, access, or economic development.
Total Funding Available	$1,000,000,000
Eligible Uses	Grants ($5 million) for capital construction projects, including the removal and replacement of eligible facilities. Planning grants ($2 million).
Eligible Recipients	Owner of an eligible facility (may partner with any of the eligible entities for a planning grant)
Category	Roads, Bridges and Major Projects
Link	*Reconnecting Communities and Neighborhoods Grant Program | US Department of Transportation*

1.1.1 Public Transportation

Table 13: All Stations Accessibility Program

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Competitive funding to assist in financing capital projects to repair, improve, modify, retrofit, or relocate infrastructure of public rail stations to make all public areas accessible to people with disabilities, including those in wheelchairs.
Total Funding Available	$1,750,000,000
Eligible Uses	Repairing, improving, modifying, retrofitting, or relocating infrastructure of rail stations or facilities for passenger use, including load-bearing members that are essential. Developing or modifying a plan for pursuing public transportation accessibility projects, assessments of accessibility, or assessments of planned modifications to rail stations or facilities for passenger use or programs of projects in an eligible area.
Eligible Recipients	States and local government authorities.
Category	Public Transportation
Link	*All Stations Accessibility Program | FTA (dot.gov)*

Table 14: Bus and Bus Facilities Competitive Grants

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Provides capital funding to replace, rehabilitate, purchase, or lease buses and buses related equipment and to rehabilitate, purchase, construct, or lease bus-related facilities.
Total Funding Available	$1,966,392,169

Eligible Uses	Replacement, rehabilitation, purchase, or lease of buses and buses related equipment and facilities, including construction.
Eligible Recipients	States, Counties, Cities / Townships, Special Districts, Tribal Governments (Federally recognized)
Category	Public Transportation
Link	*Grants for Buses and Bus Facilities Program | FTA (dot.gov)*

Table 15: Capital Investment Grants

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	This FTA discretionary grant program funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. Federal transit law requires transit agencies seeking Capital Investment Grants funding to complete a series of steps over several years. The law also requires projects be rated by the FTA at various points in the process according to statutory criteria evaluating project justification and local financial commitment.
Total Funding Available	$8,000,000,000
Eligible Uses	Grants may be made under this program to assist in financing (1) new fixed guideway capital projects or small start projects, including the acquisition of real property, the initial acquisition of rolling stock for the system, the acquisition of rights-of-way, and relocation, for fixed guideway corridor development for projects in the advanced stages of project development or engineering; and (2) core capacity improvement projects, including the acquisition of real property, the acquisition of rights-of-way, double tracking, signalization improvements, electrification, expanding system platforms, acquisition of rolling stock associated with corridor improvements increasing capacity, construction of infill stations, and such other capacity improvement projects to increase the capacity of an existing fixed guideway system corridor by at least 10 percent. Core capacity improvement projects do not include elements to improve general station facilities or parking, or acquisition of rolling stock alone.
Eligible Recipients	State and local government agencies, including transit agencies.
Category	Public Transportation
Link	*Capital Investment Grants Program | FTA (dot.gov)*

Table 16: National Rural Transportation Assistance Program

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Supports State Rural Transportation Assistance Program and develops information resources, technical assistance, and training about rural public transportation.
Total Funding Available	$13,743,783
Eligible Uses	Technical Assistance
Eligible Recipients	Nonprofits with 501(c) (30 status, Nonprofits without 501(3)(c) status, Public Higher-Ed Institutions, Other public entities with capability to provide a service of national scope.
Category	Public Transportation
Link	*Rural Transportation Assistance Program - 5311(b)(3) | FTA (dot.gov)*

Table 17: Pilot Program for Enhanced Mobility

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Competitive program to improve coordinated access and mobility
Total Funding Available	$24,102,620
Eligible Uses	Innovative capital projects that improve the coordination of non-emergency medical transportation services for those that are transportation disadvantaged.
Eligible Recipients	States, Counties, Cities / Townships, Special Districts, Tribal Governments (Federally recognized), Tribal Governments (other than Federally recognized), Nonprofits with 501(c)(3) status, Nonprofits - without 501(c)(3) status
Category	Public Transportation
Link	*Innovative Coordinated Access and Mobility Grants | FTA (dot.gov)*

Table 18: Pilot Program for Transit Oriented Development

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	The Pilot Program for Transit Oriented Development Planning is a discretionary grant program that helps support the Federal Transit Administration's mission of improving public transportation for America's communities by providing funding to local communities to integrate land use and transportation planning with a new fixed guideway or core capacity transit capital investment.
Total Funding Available	$68,864,631
Eligible Uses	Grants may be awarded for site specific and comprehensive planning funded through the program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations.
Eligible Recipients	State or local governmental authorities that are Federal Transit Administration grant recipients.
Category	Public Transportation
Link	*Pilot Program for Transit-Oriented Development Planning – Section 20005(b) | FTA (dot.gov)*

Table 19: Public Transportation on Indian Reservations Competitive

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Provides direct funding to Federally recognized Tribes to provide public transportation service on and around Indian reservations or Tribal land in rural areas
Total Funding Available	$45,812,610
Eligible Uses	Planning, Capital, Operating Assistance
Eligible Recipients	Federally recognized Tribes and Alaska Native Villages
Category	Public Transportation
Link	*Public Transportation on Indian Reservations Program; Tribal Transit Competitive Program | FTA (dot.gov)*

Table 20: Rail Vehicle Replacement Grants

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Capital projects for the replacement of rail rolling stock. Not more than three new competitive awards to eligible projects may be announced each fiscal year. FTA may select projects for multi-year awards.
Total Funding Available	$1,500,000,000
Eligible Uses	Capital
Eligible Recipients	State and local government authorities
Category	Public Transportation
Link	*Rail Vehicle Replacement Grants | FTA (dot.gov)*

Table 21: Strengthening Mobility and Revolutionizing Transportation (SMART) Grants

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The Office of the Secretary's Strengthening Mobility and Revolutionizing Transportation Grant program provides supplemental funding grants to rural, midsized, and large communities to conduct demonstration projects focused on advanced smart city or community technologies and systems in a variety of communities to improve transportation efficiency and safety.
Total Funding Available	$500,000,000
Eligible Uses	In general, a Strengthening Mobility and Revolutionizing Transportation grant may be used to carry out a project that demonstrates at least one of the following: Coordinate Automation Connected Vehicles; Intelligent, sensor-based infrastructure; Systems integration; Commerce delivery and logistics; Leveraging use of innovative aviation technology; Smart grid; Smart technology traffic signals.
Eligible Recipients	(A) A State; (B) a political subdivision of a State; (C) a Tribal government; (D) a public transit agency or authority; (E) a public toll authority; (F) a metropolitan planning organization; and (G) a group of two or more of these eligible entities
Category	Public Transportation
Link	*SMART Grants Program | US Department of Transportation*

Table 22: Urbanized Area Passenger Ferry Program

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Competitive program for passenger ferry capital projects in urbanized areas.
Total Funding Available	$150,000,000
Eligible Uses	Supporting existing ferry service, establishing new ferry service, and repairing and modernizing ferry boats, terminals, and related facilities and equipment. NOT to be used for operating expenses, planning, or preventative maintenance.
Eligible Recipients	States, Counties, Cities / Townships, Special Districts, Tribal Governments (Federally recognized)
Category	Public Transportation
Link	*Passenger Ferry Grant Program - Section 5307 | FTA (dot.gov)*

1.1.2 Electric Vehicles, Buses, and Ferries

Table 23: Charging and Fueling Infrastructure Grants (Community Charging)

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Program funds will be made available each fiscal year for Community Grants, to install electric vehicle charging and alternative fuel in locations on public roads, schools, parks, and in publicly accessible parking facilities. These grants will be prioritized for rural areas, low-and moderate-income neighborhoods, and communities with low ratios of private parking, or high ratios of multiunit dwellings.
Total Funding Available	$1,250,000,000
Eligible Uses	Acquisition and installation of publicly accessible electric vehicle charging or alternative fueling infrastructure, operating assistance (for the first 5 years after installation), acquisition and installation of traffic control devices.
Eligible Recipients	State or political subdivision of a State, Metropolitan Planning Organization, Local government, Special purpose district or public authority with a transportation function, Tribe, Territory
Category	Electric Vehicles, Buses, and Ferries
Link	*Charging and Fueling Infrastructure Grant Program | US Department of Transportation*

Table 24: Charging and Fueling Infrastructure Grants (Corridor Charging)

Granting Agency/Bureau	USDOT/ FHWA
Grant/Program Description	Deploy electric vehicle charging and hydrogen/propane/natural gas fueling infrastructure along designated alternative fuel corridors and in communities.
Total Funding Available	$1,250,000,000
Eligible Uses	Acquisition and installation of publicly accessible electric vehicle charging or alternative fueling infrastructure, operating assistance (for the first 5 years after installation), acquisition and installation of traffic control devices.
Eligible Recipients	State or political subdivision of a State, Metropolitan Planning Organizations, Local government, Special purpose district or public authority with a transportation function, Tribe, Territory
Category	Electric Vehicles, Buses, and Ferries
Link	*Charging and Fueling Infrastructure Grant Program | US Department of Transportation*

Table 25: Electric or Low-Emitting Ferry Program

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	BIL establishes an Electric or Low-Emitting Ferry Pilot Program that makes Federal funding available to support the transition of passenger ferries to low or zero emission technologies.
Total Funding Available	$250,000,000
Eligible Uses	Capital projects that include the purchase of electric or low-emitting vessels that effectively reduce emissions by using alternative fuels or on-board energy storage systems and related charging infrastructure.
Eligible Recipients	Any eligible designated or direct recipient of FTA's Urbanized Ara Formula Program (Section 5307) or Formula Grants for Rural Areas (Section 5311).

Category	Electric Vehicles, Buses, and Ferries
Link	*Electric or Low-Emitting Ferry Pilot Program - IIJA § 71102 | FTA (dot.gov)*

Table 26: Low or No Emission (Bus) Grants

Granting Agency/Bureau	USDOT / FTA
Grant/Program Description	Provides capital funding to replace, rehabilitate, purchase, or lease buses and buses related equipment and to rehabilitate, purchase, construct, or lease bus-related facilities. Provides capital funding for low or no emissions bus projects.
Total Funding Available	$5,624,550,890
Eligible Uses	Capital projects related to the reduction of emissions
Eligible Recipients	States, Counties, Cities / Townships, Special Districts, Tribal Governments (Federally recognized)
Category	Electric Vehicles, Buses, and Ferries
Link	*Low or No Emission Grant Program - 5339(c) | FTA (dot.gov)*

1.1.3 Passenger and Freight Rail

Table 27: Consolidated Rail Infrastructure and Safety Improvement Grants

Granting Agency/Bureau	USDOT / Federal Railroad Administration (FRA)
Grant/Program Description	To fund projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail.
Total Funding Available	$5,000,000,000
Eligible Uses	Eligible projects include a wide range of freight and passenger rail capital projects, safety technology deployment, planning, environmental analyses, research, workforce development, and training projects. Additional eligibilities have been included in recent years that address the prevention of trespassing on railroad property, planning and preparation of emergency plans for communities that are located on hazardous materials routes, innovative research and development, and reduction of emission by rehabbing, remanufacturing, procuring, or overhauling locomotives.
Eligible Recipients	States, including the District of Columbia. A group of States. An Interstate Compact. A public agency or publicly chartered authority established by one or more States. A political subdivision of a State. Amtrak and other rail carriers providing intercity rail passenger transportation. Class II/III Railroads and associations that represent Class II/III Railroads. Rail carriers & equipment manufacturers, in partnership with at least one of the first five entities above. Federally recognized Tribes. Transportation Research Board. University Transportation Centers engaged in rail-related research. Non-profit labor organizations representing rail employees.
Category	Passenger and Freight Rail
Link	*Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program | FRA (dot.gov)*

Table 28: Restoration and Enhancement Grant Program

Granting Agency/Bureau	USDOT / FRA
Grant/Program Description	To provide operating assistance to initiate, restore, or enhance intercity passenger rail service. Key Changes to existing program: New priority to applications for routes selected under the Corridor Identification and Development Program and operated by Amtrak. Grants may provide operating assistance for up to six years, and may not exceed: 90 percent of the projected net operating costs for the first year of service; 80 percent of the projected net operating costs for the second year of service; 70 percent of the projected net operating costs for the third year of service; 60 percent of the projected net operating costs for the fourth year of service; 50 percent of the projected net operating costs for the fifth year of service; and 30 percent of the projected net operating costs for the sixth year of service.
Total Funding Available	$250,000,000
Eligible Uses	(1) Establishing new services; (2) additional frequencies; (3) service extensions; (4) offering new on-board services. Examples of eligible expenses can include train engineer staffing, fuel, train dispatching, station management, and overhead.
Eligible Recipients	States, including the District of Columbia. An entity implementing an interstate compact. A public agency/publicly chartered authority established by 1 or more States. A political subdivision of a State. Federally recognized Tribes. Amtrak & Other IPR Carriers. Rail Carriers in partnership with at least 1 of the entities described above.
Category	Passenger and Freight Rail
Link	*Restoration and Enhancement Grant Program | FRA (dot.gov)*

1.1.4 Ports and Waterways

Table 29: America's Marine Highway Program Grants

Granting Agency/Bureau	USDOT / Maritime Administration (MARAD)
Grant/Program Description	Grants to develop and expand marine highway service options and facilitate their further integration into the current U.S. surface transportation system, especially where water-based transport is the most efficient, effective, and sustainable option.
Total Funding Available	$25,000,000
Eligible Uses	Marine Highway Grant funds can be used for material handling/container handling equipment (e.g., reach stackers, cranes, forklifts) as well as minor port improvements such as lighting or laydown areas. Funds have been used for dredging in non-Federal navigation channels and pier-side. For vessels, the funds can be used to purchase, lease, or improve/modify vessels documented per the legislation. The Program seeks to procure zero or near-zero emission equipment when available and practical.
Eligible Recipients	Department of Transportation-designated Marine Highway projects
Category	Ports and Waterways
Link	*United States Marine Highway Program | MARAD (dot.gov)*

Table 30: Port Infrastructure Development Program Grants

Granting Agency/Bureau	USDOT / MARAD
Grant/Program Description	Grants to invest in the modernization and expansion of U.S. ports to remove bottlenecks, ensure long-term competitiveness, resilience, cybersecurity, and sustainability while reducing impacts to the environment and neighboring communities.
Total Funding Available	$2,250,000,000
Eligible Uses	Projects that improve the resiliency of ports to address sea-level rise, flooding, extreme weather events, earthquakes, and tsunami inundation, as well as projects that reduce or eliminate port-related criteria pollutant or greenhouse gas emissions, including projects for: 1. Port electrification or electrification master planning; 2. Harbor craft or equipment replacements/retrofits; 3. Development of port or terminal micro-grids; 4. Providing idling reduction infrastructure; 5. Purchase of cargo handling equipment and related infrastructure; 6. Worker training to support electrification technology; 7. Installation of port bunkering facilities from ocean-going vessels for fuels; 8. Electric vehicle charge or hydrogen refueling infrastructure for drayage, and medium or heavy-duty trucks and locomotives that service the port and related grid upgrades; 9. Other related to port activities including charging infrastructure, electric rubber-tired gantry cranes, and anti-idling technologies; 10. Activities to ensure the cybersecurity of information technology and operational technology of port systems; 11. As well as projects under 46 U.S.C. 50302 which States "Funds for the Port Infrastructure Development Program are awarded on a competitive basis to projects that improve the safety, efficiency, or reliability of the movement of goods into, out of, around, or within a port."
Eligible Recipients	Public and Private Ports/Port Authorities
Category	Ports and Waterways
Link	*Port Infrastructure Development Program | MARAD (dot.gov)*

1.1.5 Resilience and Mitigation

Table 31: Building Resilient Infrastructure and Communities (BRIC)

Granting Agency/Bureau	Federal Emergency Management Agency (FEMA)
Grant/Program Description	Provides funding to state, local, tribal, and territorial governments to undertake hazard mitigation projects that reduce the risks faced from disasters and other natural hazards. BRIC focuses on supporting communities by being a flexible, consistent program that builds capabilities and capacities, encourages, and promotes innovation, promotes partnerships and collaborations, and creates the possibility of large-scale projects.
Total Funding Available	$1,000,000,000
Eligible Uses	These funds may be used for capability and capacity building activities, mitigation projects, and management costs. The projects that are allocated for BRIC funding must be cost effective, designed to increase resilience and reduce rick of injuries, loss of life, and damage and destruction of property, meet either of the two latest published editions of relevant consensus-based codes, specifications and standards, align with an applicable hazard mitigation plan, meet all criteria outlined in the Hazard Mitigation Assistance Program and Policy Guide, and meet all Environmental and Historic Preservation requirements.

Eligible Recipients	States, Local Governments, Tribes including Alaska Native Tribes, and territorial governments.
Category	Resilience/Mitigation
Link	*Building Resilient Infrastructure and Communities | FEMA.gov*

1.1.6 Safety

Table 32: Railroad Crossing Elimination Grants

Granting Agency/Bureau	USDOT / FRA
Grant/Program Description	To fund highway-rail or pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods.
Total Funding Available	$3,000,000,000
Eligible Uses	Eligible projects include: (1) a grade separation or closure, including through the use of a bridge, embankment, tunnel, or combination thereof; (2) track relocation; (3) the improvement or installation of protective devices, signals, signs, or other measures to improve safety, provided that such activities are related to a separation or relocation project described previously; (4) other means to improve the safety and mobility of people and goods at highway-rail grade crossings (including technological solutions); and (5) a group of related projects described previously that would collectively improve the mobility of people and goods. The planning, environmental review, and design of projects previously described are also eligible.
Eligible Recipients	A State, including the District of Columbia, Puerto Rico, and other United States territories and possessions. A political subdivision of a State. Federally recognized Tribe. A unit of local government or a group of local governments. A public port authority. A metropolitan planning organization. A group of entities described above.
Category	Safety
Link	*Railroad Crossing Elimination Grant Program | FRA (dot.gov)*

Table 33: Safe Streets and Roads for All

Granting Agency/Bureau	USDOT / Office of the Secretary
Grant/Program Description	The Office of the Secretary's Safe Streets and Roads for All Grant program provides supplemental funding to support local initiatives to prevent death and severe injury on roads and streets, commonly referred to as "Vision Zero" or "Toward Zero Deaths" initiatives.
Total Funding Available	$5,000,000,000
Eligible Uses	Development of a comprehensive safety action plan, conducting planning, design, and development activities for projects and strategies identified in a comprehensive safety action plan, and conducting such projects and strategies.
Eligible Recipients	A metropolitan planning organization, a political subdivision of a State, a Federally recognized Tribal government, and a multijurisdictional group of any of the entities.
Category	Safety
Link	*Safe Streets and Roads for All (SS4A) Grant Program | US Department of Transportation*

Table 34: Wildlife Crossings Pilot Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	The Wildlife Crossings Pilot program will support projects that seek to reduce the number of wildlife-vehicle collisions, and in conducting that purpose, improve habitat connectivity
Total Funding Available	$350,000,000
Eligible Uses	Projects to reduce wildlife-vehicle collisions
Eligible Recipients	State highway agency (or equivalent), Metropolitan Planning Organizations, Local government, regional transportation authority, Special purpose district or public authority with a transportation function, Tribe, Federal land management agency
Category	Safety
Link	*Wildlife Crossings Pilot Program | FHWA (dot.gov)*

1.1.7 Other

Table 35: Prioritization Process Pilot Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	Pilot program to support data-driven approaches to planning that can be evaluated for public benefit.
Total Funding Available	$50,000,000
Eligible Uses	The Prioritization Process Pilot Program will award grants to selected States and Metropolitan Planning Organizations to fund the development and implementation of publicly accessible, transparent prioritization processes to assess and score projects according to locally determined priorities, and to use such evaluations to inform the selection of projects to include in transportation plans.
Eligible Recipients	States and Metropolitan Planning Organizations serving an urbanized area with a population of >200,000
Category	Other
Link	*https://www.fhwa.dot.gov/planning/pppp/*

Table 36: Technology and Innovation Deployment Program

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	The Technology & Innovation Deployment Program turns research products into proven technologies that address emerging needs, invest in the Nation's infrastructure, and promote rapid adoption of proven, market-ready technologies and innovations.
Total Funding Available	$90,000,000
Eligible Uses	Funds efforts to advance research products into proven technologies and demonstrated practices; identify the market forces that will influence successful technology and innovation deployment; and plan and deliver effective technical assistance, training, communication, and outreach to promote rapid adoption of proven, market-ready technologies and innovations.
Eligible Recipients	Federal Highway Administration Research, Technology, and Education Program
Category	Other

Link	*Advanced Transportation Technologies and Innovative Mobility Deployment | US Department of Transportation*

Table 37: Temporary Water Crossing Structures

Granting Agency/Bureau	Department of Agriculture (USDA) / Forest Service (USFS)
Grant/Program Description	Investments in sustainable forest management by supporting rental or cost sharing programs in states and within Tribal communities that promote the use of temporary water crossings in forestry operations.
Total Funding Available	$50,000,000
Eligible Uses	The use of temporary water crossing structures to make forestry activities more sustainable.
Eligible Recipients	States, Tribes
Category	Other
Link	*https://www.fs.usda.gov/science-technology/energy-forest-products/wood-innovation/temporary-water-crossing*

Table 38: Transportation Education and Training Development and Deployment Program (TETDDP)

Granting Agency/Bureau	USDOT / FHWA
Grant/Program Description	TETDDP also known as the Highway Construction Training Program (HCTP) provides resources for the development and delivery of technical assistance, training, professional development, and education programs to improve the professional capacity of the workforce that manages, develops, and maintains the Nation's highway system.
Total Funding Available	$127,500,000
Eligible Uses	Development and delivery of technical assistance, training, professional development, and education programs
Eligible Recipients	Federal Highway Administration Research, Technology, and Education Program
Category	Other
Link	*https://www.fhwa.dot.gov/innovativeprograms/centers/workforce_dev/hcwp/toolkit/*

APPENDIX 1: FUNDING PROGRAMS AND FUNDING ALLOCATED IN ALASKA

PROGRAM NAME	FUNDING ALLOCATED
National Highway Performance Program	$ 596,545,637
Tribal Broadband Connectivity Program	$ 365,772,286
Surface Transportation Block Grant Program	$ 300,173,144
Inland Flood Risk Management Projects	$ 273,765,000
Major Rehabilitation for Rivers and Harbors	$ 259,215,000
Airport Infrastructure Grants	$ 236,271,079
Tribal Transportation Program	$ 110,161,693
Energy Improvement in Rural or Remote Areas	$ 99,200,000
Distance Learning, Telemedicine, And Broadband Program: Reconnect Program	$ 94,905,000
Highway Safety Improvement Program	$ 84,648,625
Local and Regional Project Assistance Grants (RAISE)	$ 70,294,288
Tribal Transportation Facility Bridge (Set-aside)	$ 68,266,810
National Culvert Removal, Replacement, & Restoration Grant	$ 44,087,431
Building Resilient Infrastructure and Communities (Robert T Stafford Act Section 203(i))	$ 40,804,929
Watershed And Flood Prevention Operations	$ 39,730,000
Coastal Storm Risk Management, Hurricane, And Storm Damage Reduction Projects	$ 28,050,000
Facilities and Equipment	$ 26,255,487
Federal Lands Transportation Program (funds for National Park Service)	$ 25,000,000
Solid Waste Infrastructure for Recycling Infrastructure Grants	$ 24,235,857
Congestion Mitigation and Air Quality Improvement Program	$ 23,807,091
Denali Commission: Infrastructure Fund	$ 20,951,964
National Highway Freight Program	$ 17,211,951
Nationally Significant Freight and Highway Projects (INFRA)	$ 17,148,610
Airport Terminal Program	$ 16,726,303
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) - Formula	$ 14,039,594
Brownfields Projects	$ 11,500,000
Rural Surface Transportation Grant Program	$ 10,000,000
Marine Energy Research, Development, and Demonstration	$ 9,500,000
Aquatic Ecosystem Restoration Projects	$ 9,400,000
Carbon Storage Validation and Testing	$ 8,880,349
Federal-State Partnership for Intercity Passenger Rail Grants	$ 8,200,558
Grants for Energy Efficiency and Renewable Energy Improvements at Public School Facilities	$ 7,753,633
Continuing Authorities Program (Under Flood Control Act and River and Harbor Act)	$ 7,746,002
Tribal High Priority Projects Program	$ 7,631,210
Ecosystem - Fish Passage	$ 7,586,210
Bus and Bus Facilities Competitive Grants	$ 6,873,350

PROGRAM NAME	FUNDING ALLOCATED
Low or No Emission (Bus) Grants	$ 6,780,164
Fish Passage	$ 6,266,540
Hydroelectric Production Incentives	$ 6,242,942
Tribal Climate Resilience - Adaptation Planning	$ 5,682,109
Port Infrastructure Development Program Grants	$ 5,365,000
Corps of Engineers Operation and Maintenance	$ 4,440,000
Safe Streets and Roads for All	$ 3,909,898
Energy Efficiency Materials Pilot Program	$ 3,805,927
Reduce, Reuse, Recycling Education and Outreach Grants	$ 3,540,340
To Complete or Initiate and Complete Studies That Were Authorized Prior To The Date of This Act	$ 3,335,000
Brownfields State & Tribal Response Programs	$ 3,315,136
Public Transportation on Indian Reservations Competitive	$ 3,251,685
Denali Commission: Village Infrastructure Protection	$ 3,194,756
Capital Improvement and Maintenance - Legacy Road and Trail Remediation Program	$ 3,089,500
Four Regional Clean Direct Air Capture Hubs	$ 3,000,000
National Coastal Resilience Fund	$ 2,755,400
Grants For States and Tribes for Voluntary Restoration	$ 2,505,469
Formula Grants for Rural Areas	$ 2,269,490
Direct Federal Spending for Revegetation of Mined Lands	$ 1,960,000
Removal Of Vegetation for Biochar and Innovative Wood Products	$ 1,948,780
Affordable Connectivity Program - Outreach Grants	$ 1,811,635
Distance Learning, Telemedicine, And Broadband Program: Broadband Loans	$ 1,723,637
Cost-effective Codes Implementation for Efficiency and Resilience	$ 1,500,000
Charging and Fueling Infrastructure Grants (Community Charging)	$ 1,403,838
Pacific Coastal Salmon Recovery Fund	$ 1,382,053
Bridge Investment Program	$ 1,288,000
Temporary Water Crossing Structures	$ 1,101,450
Denali Commission: Energy Reliability & Security	$ 1,000,000
Rural and Tribal Assistance Pilot Program (RTA)	$ 899,352
Reforestation Trust Fund (Replant Act)	$ 766,846
Construction of Ferry Boats and Ferry Terminal Facilities	$ 714,120
Hazardous Materials and Emergency Preparedness Grants	$ 692,466
Reconnecting Communities Pilot Program	$ 537,660
Denali Commission: Workforce Development	$ 509,949
Carbon Reduction Program	$ 463,947
Clean School Bus Program	$ 395,000
Pollution Prevention Grants	$ 330,000

PROGRAM NAME	FUNDING ALLOCATED
Collaborative Forest Landscape Restoration Program	$ 220,000
Community Wildfire Defense Grant Program for At-Risk Communities	$ 217,038
Denali Commission: Broadband Funding	$ 185,083
Long-Duration Energy Storage Demonstration Initiative and Joint Program	$ -
Orphaned Well Site Plugging, Remediation, And Restoration	$ -
Real Property Activities	$ -
Tribal Climate Resilience - Community Relocation	$ -
Total	**$ 3,086,139,300**

APPENDIX 3: DENALI COMMISSION NEEDS

Improving Lives Through Cost-Effective, Sustainable Infrastructure Development

DENALI COMMISSION

STRATEGIC PLAN

FY 2023 – 2027

March 2024

Message from the Federal and State Co-Chairs

The Challenges facing rural Alaska communities are long-standing and numerous. Many of these challenges are exacerbated by a warming climate that impacts infrastructure built on permafrost and accelerating erosion due to warmer waters preventing the formation of protective sea ice. The Denali Commission was created as a Federal-State partnership to focus on the needs of rural Alaska exclusively and intended to work closely with the State of Alaska, federal partners, tribes, and non-federal entities to address these growing challenges.

This Denali Commission Strategic Plan FY 2023-2027 generally outlines the Commission's vision for the Agency's investments over the next five years. This plan emphasizes the Agency's continued work in its legacy program areas while focusing on the most cost-effective use of the Infrastructure Investment and Jobs Act funds and the reinvigoration of the Denali Access System (Transportation) Program. Finally, the Commission has adopted a new Funding Opportunity Announcement process that makes the Commission's awarding process more transparent and understandable to the Alaskan public.

Jocelyn Fenton
Interim Federal Co-Chair

Micaela Fowler
State Co-Chair

Strategic Landscape

Denali Commission staff and Commissioners identified the following challenges and opportunities influencing the Agency's mission pursuit.

Challenges

- High level of unmet infrastructure needs throughout rural Alaska, including aging infrastructure already beyond its anticipated useful life
- Limited federal and state funding fit for rural Alaska needs
- Inadequate coordination and cooperation among federal and state agencies with duplicative, siloed, and/or contradictory missions
- Low level of community resiliency to mitigate climate change impacts, escalating deterioration of existing infrastructure
- Limited capital available within rural communities to pay for infrastructure projects outright, particularly in economically distressed/disadvantaged places
- The expectation for funding assistance to build new rather than support plans to maintain and repair existing infrastructure
- High and rising costs of delivering goods and services to remote communities, including producing and providing heat and power
- Lack of workforce to build and manage complex systems

Opportunities

- The Commission's flexible statutory authority, strong partnerships with federal, state, and tribal entities, and subject-matter experience in rural Alaska
- The Commission's experience in developing needs-based prioritization methodologies that other Federal and State agencies can use to allocate resources
- The Commission's ability to fill critical funding gaps that hold up projects
- The Commission's training programs and innovative delivery focus
- The Commission's capacity to provide technical assistance and project coordination

Strategic Goals and Objectives

The strategic goals guide the implementation of the Denali Commission's mission and purpose statement. The Commission developed goals and objectives, acknowledging that the agency must be flexible and innovative in a decreased funding environment to perform its mission effectively.

The following goals and objectives also acknowledge that the Commission is uniquely positioned as an independent Federal government agency to serve the needs of rural Alaska communities, with significant experience in working within a network of state agencies, tribes, municipal governments, non-profit organizations, and other partners. The Commission will continue to innovate, catalyzing ideas and services that can improve lives in rural Alaska. Performance measures related to the goals and objectives are included in Appendix B.

1 Infrastructure Investment and Jobs Act

Implement a plan for the funds coming to the Commission that focuses on match/gap/leverage strategies and opportunities

1.1 Prioritize investments in distressed/disadvantaged communities with a focus on improving climate resiliency

1.2 Provide critical gap funding needed to move larger capital projects forward; target projects that leverage Commission dollars; and invest in technical assistance initiatives, like the Center for Environmentally Threatened Communities established under the VIP Program.

1.3 Foster collaborative initiatives that pool non-Commission funds from various sources

1.4 Facilitate applications to other IIJA opportunities to ensure the state maximizes all possible funding for Alaska

2 Village Infrastructure Protection

Support climate resiliency in Alaska through partnerships and financial assistance

2.1 Support specific protect-in-place projects and Relocation planning initiatives

2.2 Use Denali Commission funds to fill gaps in other State and Federal agency programs

2.3 Continue to support the Center for Environmentally Threatened Communities (CETC)

2.4 Build awareness through public involvement and outreach at the local, regional, statewide, and national levels

2.5 Finalize a framework for both relocation and protect-in-place solutions; work with other Federal agencies to endorse, support and integrate this guidance document into their respective resource allocation methodologies

2.6 Continue to update the Statewide Threat Assessment to ensure communities have an accurate baseline threat assessment

2.7 Partner with the BIA and USDA/NRCS Climate Resilience Programs

3 Energy

Continue to invest in projects and initiatives that improve the affordability, safety and reliability of fuel storage, energy production, electrical distribution, and heating the built environment

3.1 Invest in capital projects (new construction and renovations) with a focus on renewable energy systems and in consideration of a community's future energy needs for transportation, food production, and piped water/wastewater

3.2 Invest in a variety of non-capital initiatives related to end-use energy efficiency and conservation, data collection, energy planning, maintenance & improvement, and training

3.3 Continue the barge mooring point and fuel header upgrade program to ensure safe delivery of fuel

3.4 Invest in projects that reduce the cost of energy for power and heat

3.5 Cultivate stronger partnerships with the US Department of Energy (DOE) (e.g., Arctic Energy Office, Office of Indian Energy, National Renewable Energy Labs, and other relevant offices) to identify collaborative opportunities and efficiencies in the deployment of energy projects and initiatives

4 Workforce Development

Assist Alaska communities in developing and maintaining a skilled workforce

4.1 Invest in culturally appropriate and data-driven workforce, education, and training programs to assist in the growth of a rural workforce prepared to develop essential and time-sensitive projects and maintain and sustain completed infrastructure vs. construction phase training

4.2 Develop initiatives that increase the reach and effectiveness of education, training, and workforce development to maximize engagement with the most rural residents

4.3 Create information networks to understand the pipeline of projects and skills necessary to implement, using a local workforce to the extent practicable

4.4 Develop digital tools that improve the richness and quality of distance services

5 Transportation

Re-establish the Denali Access System Program as a rural Alaska resource

5.1 Ensure the Transportation Advisory Committee is meaningfully engaged to assist the Commission in reviewing projects and determining transportation priorities

5.2 Collaborate with State DOT&PF to coordinate transportation projects across the state

5.3 Secure Transportation funding from appropriations for the Denali Access System Program or transfer from FHWA directly to the Commission

5.4 Fund a mix of design/ engineering, maintenance/ improvements to existing infrastructure, and new construction to enable continual availability of shovel-ready projects moving forward

6 Other Programs

Keep other legacy and new programs open and look for opportunities to leverage Commission Base funds

6.1 Include funds in the Commission's Annual Workplans for the Sanitation, Health Facilities, Housing, and Broadband Programs

6.2 Fund critical gaps to move capital projects forward; target projects that will leverage Commission dollars

6.3 Fund key planning, design, and site development activities to make more extensive capital projects shovel ready

6.4 Invest in planning, coordination, and technical assistance initiatives that maximally leverage Commission dollars

6.5 Promote rural Alaska community and economic development, ensuring awareness of programs and initiatives and coordinate efforts to progress the development of Rural Alaska

6.6 Partner with the IHS/ANTHC Sanitation Facilities Program

7 Innovation and Collaboration

Continue to convene partners and stakeholders

7.1 Serve as a convener for rural Alaska and current Arctic issues, as identified by governmental, Tribal, non-profit, business, community, and other stakeholders

7.2 Use unique Commission authorities to complement but not duplicate the work of other Federal agencies and streamline Commission investments/initiatives

7.3 Encourage a paradigm shift among facility owners and operators that results in an emphasis on maintaining existing infrastructure

7.4 Encourage all funders to make investments based on need, as opposed to other factors such as good grant writing skills

7.5 Maintain frequent communication and develop new opportunities with existing partners across the Agency's program portfolio

Agency Initiatives

In contrast to the strategic goals, which are investment-oriented, agency initiatives are focused on how best to manage the Agency in support of the stated strategic goals. Agency initiatives are meant to be fully actionable within one to three years.

a. **Expand Use of Section 305 and 311 Authority:** This authority is a powerful tool (see Sections 305 and 311 of the Denali Commission Act), allowing other federal and state agencies and non-governmental organizations to transfer funds directly to the Commission. Once at the Commission, the transfers become "no-year" funds, like the Commission's Base appropriations, and do not expire. The Commission should work to establish Section 311 or 305 relationships with more state, federal and other partners.

   Supports Strategic Goals 1-6

b. **Maintain IAA with FHWA:** In FY 2022, the Commission executed an IAA with the US Department of Transportation that provides for $15 million per year of the State of Alaska's allocation of federal surface transportation funding directly to the Denali Commission. The Commission should work to ensure this IAA. is maintained/renewed as needed to make this a long-term, recurring funding stream.

   Supports Strategic Goal 5

c. **Secure Funds for the Denali Access System Program:** The FY 2022 IIJA included language that re-authorized appropriations for the Denali Access Program at an annual funding level of up to $20 million. The reauthorization should make it easier to secure appropriations, and the Commission should work to secure this new, recurring funding stream.

   Supports Strategic Goal 5

d. **EEO:** Equal Employment Opportunity (EEO) is the principle that everyone should have equal access to employment opportunities based on merit. This access to equal employment should be without fear of discrimination or harassment playing a role in decision-making in any aspect of employment. The Commission is committed to EEO principles and will work to update its EEO policies and procedures.

   Supports Strategic Goals 1-7

e. **Lower Administrative Costs:** The Commission will pursue opportunities to lower administrative costs, focusing on reducing its office space footprint.

   Supports Strategic Goals 1-7

f. **Increase Transparency:** The Commission will increase transparency by publishing public funding opportunities with clear evaluation criteria and using review teams comprised of subject matter experts with no conflicts of interest to evaluate and score applications.

   Supports Strategic Goals 1-7

Summary

The Denali Commission Act affords the Agency significant latitude and authority to address issues facing rural Alaska and common challenges facing other Federal agencies. The Commission can invest in a host of projects/initiatives relatively quickly and flexibly, given some of the unique tools provided in the statute. The Commission understands that a primary challenge for federal agencies is maximizing benefits from limited resources to deploy various initiatives across the extensive geography of Alaska. That drives the need for additional coordination and collaboration across all infrastructure development sectors, which the Commission prioritizes in its strategy.

The Commission will continue to issue awards based on need whenever possible using priority lists while increasing funding transparency for programs without them by publishing annual funding opportunities. These competitive opportunities are also guided by priorities such as community designation (as economically distressed, historically underserved, and environmentally threatened), partnerships, and leveraged funds while encouraging a straightforward application. The Commission continues to provide technical and administrative capacity support when and where appropriate.

The Commission has succeeded in its 25-year history working in multiagency/multi-jurisdictional collaborations across its portfolios. The Agency sees additional coordination and partnerships, leveraging the Commission's unique tools, as key to the next five years.

In developing its first Strategic Plan in 2018, the Commission understood the principles Congress intended with the passage of the GPRA Modernization Act of 2010. Namely, Congress envisions that the first budget presented by a new Presidential Administration (inclusive of new agency Strategic Plans) would outline priorities, goals, and proposed investments that will better the lives of all Americans. The Commission, as an independent Federal agency, over the next five years, will continue to focus its future investments to meet this mandate.

APPENDIX 4: ALASKA RAILROAD CORPORATION NEEDS AND PROJECTS

Alaska Railroad Corporation Needs Continued.

Project Title	Sub Project	Description	Place Name/Borough	Sub-Region	Priority
Eielson Branch Realignment	-	ARRC proposes to realign approximately 20 miles of track on the Eielson Branch around urban and rural commercial, residential , and military areas between Fort Wainwright and Eielson Air Force Base (AFB).	Eielson	Fairbanks	Low
Extension of Alaska Railroad to the North Slope	-		Yukon-Koyukuk Census Area	Yukon Flats	Low
Extention of Alaska Railroad to Kobuk Mining Region	-		Yukon-Koyukuk Census Area	Yukon Flats	Low
Fairbanks Airport Rail Improvements	-	Replace rails, ties, and ballast to facilitate pipeline related development and materials storage/logistics south of Fairbanks International Airport.	FBX	Fairbanks	High
Fairbanks Industry Track Rehbilitation	-	Rehabilitation of industry spurs serving multiple customers near the Fairbanks Yard	FBX	Fairbanks	High
Fairbanks Rail/ Truck Intermodal Yard Upgrades	-	Construct truck staging area for freight movements, two new track crossings, realign the existing access road, and drainage improvements in the Fairbanks Alaska Railroad Freight Yard to support the construction of a natural gas pipeline.	FBX	Fairbanks	Medium
Fairbanks Transload Facility	-	Expansion and improvement of existing transload facility	FBX	Fairbanks	Medium
Fairbanks warming shed	-	Construction of a warming facility for winter passenger service	FBX	Fairbanks	Medium
Fairbanks Yard Expansion	-	Adding additional yard storage capacity	FBX	Fairbanks	Medium
Fairbanks Yard Rehabilitation	-	Rehabilitation of yard tracks	FBX	Fairbanks	High
Healy Canyon Stabilization	-		Healy Canyon	Denali	High
Maintenance Support Facilities	Healy Section Housing	Construction of remote employee housing	Healy	Denali	High
	Cantwell Section Housing	Construction of remote employee housing	Cantwell	Denali	High
	Hurricane Section Housing	Construction of remote employee housing	Hurricane	Denali	Medium
North Pole Road-Rail Crossing Reduction	-	Build new tracks and staging areas into the North Pole refinery and along the levee which will eliminate all the switching moves across 5th and 8th Avenue in North Pole. Grade separate the crossing on the Richardson Highway and relocate the track down to the levee eliminating all movements in downtown North Pole.	North Pole	Fairbanks	Low
Positive Train Control	North-end Switch Monitoring	Add 4th and final compoent to federal PTC program	Denali-FBX	Denali	Medium
	System upgrades and maintenance	Continual upgrades to basic-installed system as required	System-wide	Areawide	High
Railroad Rehabilitation	-	Persistant rehabilitation of track infratsructure System-wide	State-wide	Regionwide	High

APPENDIX 5: FAST PLANNING METROPOLITAN TRANSPORTATION PLAN, NEEDS AND PROJECTS

KITTELSON & ASSOCIATES

TECHNICAL MEMORANDUM #4

2045 in Motion FAST Planning Metropolitan Plan Update

Implementation and Financial Plan

Date:	March 10, 2023	Project #: 26291
To:	Jackson Fox, FAST Planning	
From:	Andrew Ooms, PE, PTSO, RSP, Matthew Hagen, Nick Foster, AICP, RSP, and Polina Polikakhina	
cc:	FAST Planning Technical Committee	

IMPLEMENTATION PLAN

This section presents the Technical Committee's recommended projects that help ensure the efficient and safe multimodal movement of people and goods within and through the Fairbanks region. Sources for these projects include the 2045 Metropolitan Transportation Plan (MTP), projects developed through the Transportation Improvement Program (TIP) process, public outreach, other planning efforts that have been completed since the adoption of the 2045 MTP (including the Non-Motorized Plan and Freight Mobility Plan), and projects developed through the MTP update process. Though many projects are roadway focused, this plan recommends that sidewalks and paths along project roadways be evaluated at the same priority as the roadway itself.

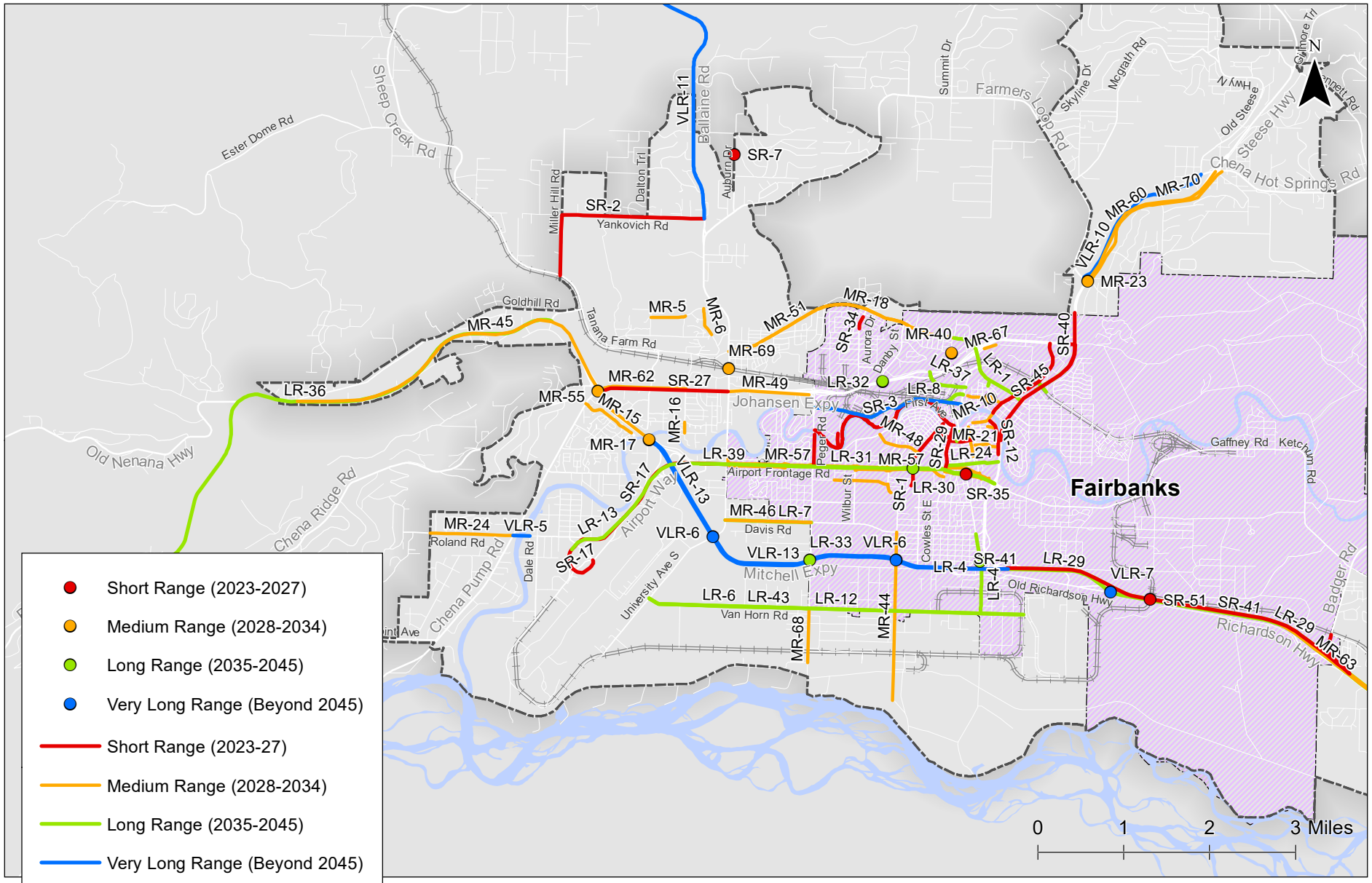
Project Priorities

Planned projects are prioritized into four timeframes, though prioritization has not been applied to projects within each of the four timeframes:

- Short Range (SR): 2023–2027
- Medium Range (MR): 2028–2034
- Long Range (LR): 2035–2045
- Very Long Range (VLR): Beyond 2045

Projects have been placed into the Short Range timeframe to match projected funding levels (documented in the following Financial Plan) and represent the fiscally constrained project list. The prioritization of projects into four timeframes was done by FAST PLANNING and DOT&PF staff. It is informed by the 2045 Plan, the analysis done as part of this update, the results of other planning efforts, and the Plan goals.

The 2045 MTP projects are shown in Figures 1 and 2 with brief project descriptions following in Table 1. A more detailed financial analysis showing expected costs and revenues to fund these projects is presented in the Financial Plan.



2045 MTP Projects
Fairbanks, Alaska

Figure
1

Coordinate System: NAD 1983 StatePlane Alaska 3 FIPS 5003 Feet

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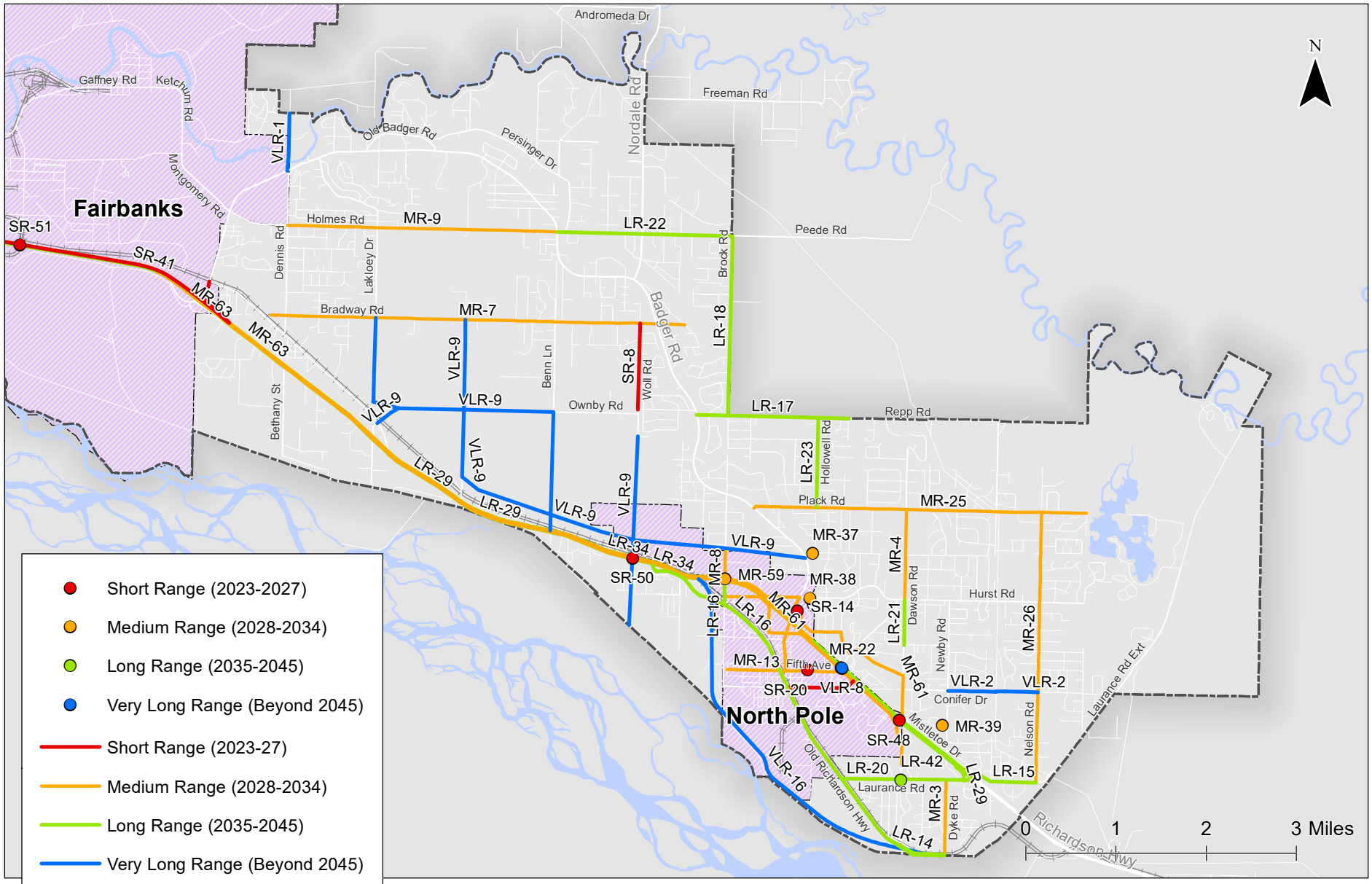

2045 MTP Projects
North Pole, Alaska

Figure
2

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Coordinate System: NAD 1983 StatePlane Alaska 3 FIPS 5003 Feet

Table 1: 2045 MTP Project Descriptions

Project ID	Project Name	Project Description
Short Range Projects		
FAST Planning Projects		
SR-1	Cowles St Reconstruction (East Cowles - 1st Ave)	Reconstruct Cowles Street from 1st Avenue through East Cowles Street. Project work will include roadside hardware, drainage improvements, intersection improvements, ADA improvements and utilities.
SR-2	Yankovich/Miller Hill Road Reconstruction	Reconstruct Miller Hill and Yankovich Road from Sheep Creek to Ballaine Road, including widened shoulders on Yankovich Road.
SR-3	Chena River Walk Stage III	Expand the Chena River Walk to the north side of the Chena River with approximately 2,200 linear feet of pathway from Peger Road to the existing Chena River pedestrian bridge crossing at Pioneer Park. Construct a connection of the existing pedestrian facilities along Peger Road.
SR-4	FAST Coordinator's Office	Funding for the Fairbanks Area Surface Transportation (FAST) Coordinator's office which supports delivery of the FAST Planning program.
SR-5	Advance Project Definition	Provide funding to the State and City to develop new estimates for TIP projects.
SR-6	Transportation Demand Management (TDM) Strategies	Investigate Transportation Demand Management (TDM) strategies in the FAST Planning area.
SR-7	Pearl Creek Elementary Access Improvements	Traffic circulation improvements on Auburn Drive and loop road through school parking lot to reduce conflicts between buses, student pick-up/drop-off, visitor parking, and teacher parking
SR-8	Woll Road Resurfacing & Widening	Resurface and widen Woll Road from Bradway Road to Ownby Road.
SR-9	Geist/Chena Pump Road Corridor Study	Examine safety and access control issues along Geist Road and Chena Pump Road from University Avenue to Chena Small Tracts Road, including driveway density, intersection configuration, and conflicts between motorized and non-motorized users to identify projects that improve safety and address access management for all users.
SR-10	8th Avenue Path Resurfacing	Resurface the path on 8th Avenue in North Pole
SR-11	Chena Landings Loop Path Reconstruction	Repave the path between the footbridge and Chena Landings Loop.
SR-12	Clay Street Bicycle Facilities	Provide a bicycle connection on Clay Street to downtown Fairbanks between 10th Avenue at the Steese Highway and Wendell Avenue.
SR-13	Winter Weather Event Equipment	Assist public agencies in acquiring winter maintenance equipment and to manage extreme events (i.e. icebreaker attachments, two-way tow plows, sidewalk snow removal equipment, etc.)
SR-14	Doughchee Avenue Improvements	Reconstruct Doughchee Avenue from Badger Road to Beaver Spring bridge, including drainage improvements to reduce bridge abutment erosion.
SR-15	Safe Routes to School	Supporting studies of elementary, middle and high schools, bike rodeos, outreach, safety for surrounding communities and multi-modal trips
SR-16	Lacey Street Reconstruction Planning Study	Planning study to examine feasibility of burying overhead utilities and gain additional feedback from the public on design alternatives for reconstruction of Lacey Street from 1st to 12th Avenue
SR-17	University Avenue South Bicycle & Pedestrian Path	Construct a facility along University Avenue South for bicycles and pedestrians between the Parks Highway and Armistead Way.
SR-18	4th Avenue Reconstruction	Reconstruct 4th Avenue from Cowles to Barnette Street, including installation of storm drain system, new sidewalks, and paved surface.
SR-19	Pioneer Park North Parking Lot & Boat Launch	Develop an improved entrance and parking area at north end of park, including reconstruction of the boat ramp to the Chena River, in coordination with the Pioneer Park Mast Plan.
SR-20	FNSB Parking & Pathway Improvements & Community Access	Address access deficiencies and in-park ADA accessibility at Fifth Avenue Park (North Pole), Nussbaumer Park, South Fairbanks Park.
SR-21	5th Avenue Reconstruction	Reconstruct 5th Avenue from Barnette Street to Noble Street in order to provide improved facilities for all users. Reconstruction includes improved drainage, ADA-compliant pedestrian facilities, shoulders to accommodate bicyclists and temporary snow storage, utility relocates and improvements, as required, installation of wayfinding and bicycle route signs, and landscaping in accordance with City of Fairbanks' Complete Streets.
SR-22	Share the Road Educational Outreach	Develop a multimedia campaign to improve education about the rights and responsibilities of each transportation mode.
SR-23	Bike Lane Signing and Striping	Signing and striping of existing paved shoulders within City of Fairbanks to accommodate bicyclists, as designated bike lanes for seasonal use.
SR-24	Driver's Education Program	Provide a subsidy for driver's ed course in Fairbanks and/or introduce driver's ed course to a local high school

Project ID	Project Name	Project Description
SR-25	Peger Road Bicycle & Pedestrian Path	Construct a 1,400-foot bicycle/pedestrian path on the east side of Peger Road from the Chena River bridge to Airport Way through Pioneer Park with a direct connection to the Chena Riverwalk path.
SR-26	Airport Way/Peger Road Intersection Study	Align area planning and develop concept-level alternatives for proposed improvements to the intersection that meet the intent of current plans, improve safety, limit conflicts between users, and improve traffic flow.
SR-27	Geist Road Sidewalk Safety Improvements	To improve the safety of pedestrians and reduce motor vehicle conflicts on the south side of the Geist Road non- motorized path
SR-28	FAST Planning Improvement Program	Funding for the annual Preventative Maintenance or Rehabilitation Activities Program within the FAST Planning Area for non-NHS routes.
SR-29	Barnette Street Reconstruction	Reconstruct Barnette Street from 1st Avenue to Airport Way to include signal upgrades, decorative lighting, a dedicated bike lane, drainage improvements, intersection and sidewalk upgrades, utility relocation, signing and striping and landscaping to be consistent with the Complete Streets concept of Cushman Street.
SR-30	FAST Carbon Reduction Program	Projects that support the reduction of transportation emissions, including evaluations, plans, and the design and construction of projects in accordance with 23 USC §175, within the FAST Planning Metropolitan Planning Area.
SR-31	Household Travel Survey	Complete new Household Travel Survey (last completed 2013) to collect data regarding origins and destinations, trip length, time of day, mode of transportation, and other household characteristics for more up-to-date trip data for the Travel Demand Model for future MTPs.
SR-32	MTP Update	Update FAST Planning Metropolitan Transportation Plan as required under 23 USC 134 (occurs every 4 years).
SR-33	Transit Plan Updates	Update the Fairbanks North Star Borough Long & Short Range Transit Plan, Coordinated Human Services Transportation Plan, Fare Pricing & Integration Study, and Operational Efficiency Study.
Non-FAST Planning Projects		
SR-34	Aurora Drive Noyes Slough Bridge #0209 Replacement	Replace the Noyes Slough Bridge #0209 on Aurora Drive in Fairbanks. Project work includes bridge work, roadside hardware, drainage improvements, intersection improvements, ADA improvements, and utility work.
SR-35	Airport Way/Cushman Street Intersection Reconstruction	Reconstruct the intersection at Airport Way and Cushman Street.
SR-36	Chena Pump/Chena Small Tracts Road Roundabout	Consider installing a roundabout due to increased volumes at the Chena Pump/Chena Small Tracts intersection to improve delay and safety. Construct a pedestrian/bicycle crossing along Chena Pump Road between Chena Ridge Road and Chena Small Tracts Road for safe access to the Interior Alaska Land Trust Chinook Conservation Park.
SR-37	City of Fairbanks Systematic Signal Upgrades	Install overhead signal head for each lane of each approach at 11 intersections around City of Fairbanks. Install retroreflective backplates on all signal heads at 11 additional locations.
SR-38	Old Steese Highway Reconstruction	Reconstruct the Old Steese Highway from Kutter Road to the intersection at Johansen Expressway and rehabilitate the Old Steese Highway between Kutter Road and 3rd Street.
SR-39	NHS Pavement Management/Preventive Maintenance	Funding for the annual DOT&PF Preventative Maintenance Program within the FAST Planning Area for NHS routes. Recommendations for pavement rehabilitation are developed under the ongoing Pavement Management System.
SR-40	Steese/Johansen Expressway Interchange	Construct a grade separated interchange at the intersection of Steese Expressway and Johansen Expressway. Realign adjacent access as necessary to accommodate the selected interchange configuration.
SR-41	Richardson Highway MP 357-362 Bicycle/Pedestrian Path	Construct a paved bicycle/pedestrian path on the Richardson Hwy starting from the Richardson Hwy/Airport Wy intersection, continuing along the Richardson Hwy to the Badger Loop Northbound Ramp, and terminating at the Badger Rd/Old Badger Hwy intersection. Improvements will include bridge work, roadside hardware, drainage improvements, ADA improvements, and utilities.
SR-42	FNSB Air Quality Programs (CMAQ)	Funding to support ongoing efforts and recommendations outlined under the Fairbanks North Star Borough Carbon Monoxide Air Quality Maintenance Plan.
SR-43	FNSB Statewide Implementation Plan (SIP)	Prepare a Fairbanks PM 2.5 Non-Attainment Area Statewide Implementation Plan (SIP). This project includes inventory development, data collection, analysis, modeling, identifying control measures, and components that demonstrate attainment.
SR-44	TIP/LRTP Conformity Analysis	Preparation of a PM 2.5 conformity determination for short- and long-term transportation plans and individual projects in the entire nonattainment area with the FNSB, consisting of FAST, the MPO for the Fairbanks urban area, and the associated “donut area” within the PM 2.5 Boundary.
SR-45	Old Steese Improvements	Upgrade the Old Steese Highway between 3rd Street and Kutter Road, including sidewalk widening and ADA improvements, addition of roadway shoulders, traffic through and right and left turn lanes, and traffic signal and street lighting upgrades.

Project ID	Project Name	Project Description
SR-46	New Buses	Continue to expand and update the MACS Transit fleet.
SR-47	New Transit Van	Purchase a new Transit Van.
SR-48	Buzby Road/Dawson Road exit from Richardson Highway Study	Study ways to improve traffic movement at this location. Consider reconfiguring the off/on ramp intersections with Buzby Road/Dawson Road to better accommodate turning trucks. Also consider strategies to improve the intersection geometry to better accommodate double trailers.
SR-49	Truck Route Signage	Install truck route signage on all truck routes
SR-50	Richardson Highway MP 351 Interchange	Construct interchange to replace intersection of the Richardson Highway and the Old Richardson Highway at North Pole, near Richardson Highway MP 351.
SR-51	Richardson Highway MP 360-361 (MP 359) Railroad Grade Separated Facility	Construct grade-separated facility on the Richardson Highway to improve operations and reduce railroad/vehicle conflicts. Work includes new railroad overpass bridges (#2366 and 2367).
Medium Range Projects		
FAST Planning Projects		
MR-1	Lacey Street Reconstruction	Reconstruct Lacey Street from 1st to 12th Avenue. Reconstruction includes drainage improvements, intersection and sidewalk upgrades, utility relocation, signing, striping, and landscaping.
MR-2	Minnie Street Reconstruction	Reconstruct Minnie Street from Erceg Street to Noyes Slough Bridge.
MR-3	Dyke Road Improvements	Construct paved shoulders for bicyclists and pedestrians along Dyke Road from Laurance Road to the Old Richardson Highway.
MR-4	Dawson Road Extension (Hurst Road–Plack Road)	Extend Dawson Road north from Hurst Road to provide an alternate travel route between the growing Plack Road and Repp Road area and Richardson Highway Corridor in North Pole via the Richardson/Dawson Interchange.
MR-5	North Tanana Dr Extension (UAF)	Reconstruct Kuskokwim Way between North Tanana Drive and Sheenjek Drive, approximately 2,100 feet, to include construction of sidewalk, shoulders to accommodate bicyclists, illumination, drainage improvements, and paving.
MR-6	Tanana Loop Reconstruction (UAF)	Reconstruct 1,700 feet of Tanana Loop between Yukon Drive and North Tanana Drive. Widen the sidewalk to 8 feet and extend it to North Tanana Drive. Add 4-foot bike lanes to both sides of the roadway.
MR-7	Bradway Road Reconstruction	Reconstruction of Bradway Road in the Badger Road area to provide a maintainable pavement structure and to provide for increasing travel demands and multiple transportation modes.
MR-8	Peridot Street Reconstruction: FNSB	Reconstruct Peridot Street from the Richardson Highway to City limit, approximately 0.21 miles, and pave.
MR-9	Holmes Road Reconstruction	Rehabilitate Holmes Road and provide accommodations for bicycles and pedestrians to improve safety and provide for increasing residential development in the area.
MR-10	Wendell Avenue Study	Develop comprehensive vision for Wendell Avenue/Old Steese Highway between 3rd Street and Noble Street to improve capacity, pedestrian/bicycle, and downtown circulation/access needs.
MR-11	FAST Planning Improvement Program	Funding for the annual Preventative Maintenance or Rehabilitation Activities Program within the FAST Planning Area for non-NHS routes.
MR-12	Lathrop Street: Eagan Avenue–16th Avenue	Construct sidewalk from existing sidewalk to the end of Lathrop Street.
MR-13	5th Avenue (NP): Santa Claus Lane–Therron Street	Construct sidewalk from Santa Claus Lane to 5th Avenue's terminus at Therron Street.
MR-14	8th Avenue (NP): St Nicholas Drive–Blanket Boulevard	Construct sidewalk from the terminus of the shared use path west of Blanket Boulevard to St Nicholas Drive.
MR-15	Dartmouth Drive: Chena Pump Road–Stanford Drive	Construct sidewalk along Dartmouth Drive.
MR-16	Fairbanks Street: Birch Lane–Teal Avenue	Construct sidewalk on west side of Fairbanks Street.
MR-17	Boat Street Path Crossing	Install crosswalk/crossing signage for Boat Street path crossing from Chena River bridge ramp connection.
MR-18	College Road Pedestrian Crossings	Install pedestrian crossings on College Road where warranted.
MR-19	Egan Avenue Pedestrian Improvements	Install pedestrian facilities between Moore Street and Lathrop Street along Egan Avenue.
MR-20	2nd Avenue (Fairbanks): Hall St–Clay St	Construct sidewalk along the north side of 2nd Avenue.
MR-21	7th Avenue (Fairbanks): End of sidewalk – 3rd Ave	Construct sidewalk along 7th Avenue from where the MLH Manor's (near Noble Street) existing sidewalk ends to 3rd Avenue. Approximately 0.2 miles.

Project ID	Project Name	Project Description
MR-22	5th Avenue–Mission Road/Richardson Highway	Investigate potential improvements to allow non-motorized users to cross the Richardson Highway at this location. This may require an overpass, which could be completed in conjunction with a future interchange at this location.
MR-23	Old Steese Highway/Farmers Loop Road	Investigate potential improvements to make this unsignalized intersection crossing more comfortable for non-motorized users.
MR-24	Roland Road Improvements	Widen roadway to accommodate bicycles and pedestrians and improve safety for all modes.
MR-25	Chena Lakes–Plack Road Bicycle and Pedestrian Facilities	Construct bicycle and pedestrian trail connection between Chena Lakes Recreational Area and Plack Road.
MR-26	Nelson Road Bicycle and Pedestrian Facility	Construct a bicycle and pedestrian facility along Nelson Road by adding shoulders or a separated multi-use path.
MR-27	FAST Planning Coordinator's Office	Funding for the Fairbanks Area Surface Transportation (FAST) Coordinator's office which supports delivery of the FAST Planning program.
MR-28	Advance Project Definition	Provide funding to the State and City to develop new estimates for TIP projects.
MR-29	MTP Update	Update the FAST Planning Metropolitan Transportation Plan, as required under 23 USC 134.
MR-30	Gravel to Pavement	Pave the gravel roadway surface on Leasure Street from East Van Horn Road to midblock on Leasure Street (~600 ft), MacArthur Street from East Van Horn Street to midblock on MacArthur Street (~450 ft), 34th Avenue from South Cushman Street to Leasure Street (~700 ft), and access roads and adjacent parking areas at Chena Lakes and Birch Hill Recreation Areas.
MR-31	Dawson Road Improvements	"Pave the gravel roadway surface of Dawson Road from Hurst to Yellowstone Road (2,620 ft)."
MR-32	South Davis Park Pathways	Construct approximately three miles of ADA accessible, non-motorized trail system in South Davis Park.
MR-33	Tanana Lakes Recreation Area – Cushman Lake Loop Trail	Construct a circumnavigational, non-motorized trail around Cushman Lake.
MR-34	Island Homes Sidewalk Upgrades	Upgrade sidewalks throughout subdivision for ADA compliance and connect gaps in network; perform drainage improvements as needed.
MR-35	Electric Vehicle Infrastructure Deployment	Develop a local electric vehicle infrastructure deployment plan, including installation of charging stations on public and private property, and municipal/State fleet conversions to electric vehicles.
MR-36	Hillside Flooding/Icing Mitigation	Address recurring flooding and icing issues.
MR-37	Airway Drive Bridge Replacement	Replace existing temporary bridge and abutments with permanent bridge.
MR-38	Outside Hurst Boulevard Bridge Replacement	Replace existing temporary bridge and abutments with permanent bridge.
MR-39	Spruce Branch Drive Bridge Replacement	Replace existing temporary bridge and abutments with permanent bridge.
MR-40	O'Connor Road Bridge Rehabilitation	Rehabilitate bridge and replace existing wood roadway surface.
MR-41	Downtown Fairbanks Bicycle Parking	Increase number of bicycle rack locations Downtown.
MR-42	Safety Action Plan	Develop Safety Action plan for all road users, including pedestrians, bicyclists, public transportation users, motorists, and commercial operators
MR-43	Wildlife-Vehicle Collision Mitigation	Implement 2017 moose-vehicle collision study recommendations and identify maintenance, fencing, and lighting projects.
MR-44	Lathrop Street Bicycle Facilities	Provide non-motorized connectivity from Davis Road path to the Tanana Lakes Recreation Area on Lathrop Street.
MR-45	Parks Highway Path Rehabilitation	Repave and rehabilitate the path along Parks Highway between the Chena River and Goldhill Road.
MR-46	Davis Road Sidewalk Improvements	Repave and repair the sidewalks along Davis Road between University Avenue and Lathrop Street.
MR-47	Santa Claus Lane Bicycle Facilities	Add buffered bicycle lanes on Santa Claus Lane between Richardson Highway and E 5th Avenue.
MR-48	Wien Park Path Connection	Improve the connection of the Wien Park Path with the 10th Avenue/ Cowles Street intersection.
MR-49	Johansen South Path Resurfacing	Repave the path on the south side of Phillips Field Road between Noyes Slough bridge and Peger Road.
MR-50	Minnie Street Noyes Slough Bridge Replacement	Replace structurally deficient bridge on Minnie Street over Noyes Slough.
MR-51	College Road Safety & Access Improvements Planning Study	Perform a new public involvement and planning effort to restart the conversation about alternatives for this roadway from University Avenue to Johansen Expressway to improve safety and mobility for all users, including special consideration for driveway density, intersection configuration, and conflicts between motorized and non-motorized users to identify alternatives that improve safety and address access management.

Project ID	Project Name	Project Description
Non-FAST Planning Projects		
MR-52	Richardson Highway Corridor Study: Badger Road to Salcha	Identify corridor projects emphasizing local land uses and developing future land use recommendations.
MR-53	ARRC Yard Access Study	Conduct a study to identify ways to improve access between the ARRC yard, the Steese Highway, and other freight routes.
MR-54	NHS Pavement Management/Preventive Maintenance	Funding for the annual DOT&PF Preventative Maintenance Program within the FAST Planning Area for NHS routes. Recommendations for pavement rehabilitation are developed under the ongoing Pavement Management System.
MR-55	Chena Pump Road Roundabout Interchange	Study a roundabout interchange at the Chena Pump Road/Parks Highway interchange.
MR-56	Danby Street Interchange Study	Study a grade-separated interchange on Johansen Expressway at Danby Street.
MR-57	Airport Way: Steese Highway–Parks Highway	Designate and construct improvements to parallel routes on the north and south sides of Airport Way
MR-58	Highway Dynamic Messaging Sign	Place variable message signs on major arterials in the Fairbanks and North Pole area with the primary function to alert the community about Air Quality stage restrictions. The signs could serve multiple functions such as alerting drivers to adverse road conditions or amber alerts. The signs will be placed on each side of the roadway for inbound and outbound traffic, necessitating 2 signs for each roadway identified. The following roadways have been identified as candidates for this project: Parks Highway, Richardson Highway, Johansen Expressway, Mitchell Expressway and the Steese Expressway.
MR-59	Peridot Street/Richardson Highway Crossing	Improve the safety and operations of the Peridot Street/Richardson Highway intersection for all users by making a right in, right out.
MR-60	Farmers Loop-Chena Hot Springs Road Trail Connections: FNSB	Construction of an all-season trail connection that will link from Farmers Loop Road in the McGrath Road area to Chena Hot Springs Road. This will connect the Farmers Loop Bike Trail and adjacent winter trails to the Chena Hot Springs multi-use trail.
MR-61	Richardson Highway (NP) Alternate Route: Peridot Street–Laurance Road	Designate and construct improvements to parallel routes on the north and south sides of the Richardson Highway through North Pole.
MR-62	Geist Road: Parks Highway–Fairbanks Street	Construct an extension of the existing shared-use path on the north side of the road to the Parks Highway.
MR-63	Fairbanks-North Pole Bicycle and Pedestrian Multi-Use Path	Construct bicycle and pedestrian path connection between Fairbanks and North Pole by extending the proposed path from the Richardson Highway/Badger Road intersection to North Pole. Continue to allow bicyclists on Richardson Highway when complete.
MR-64	Sunday Service	Add Sunday service for Red and Blue lines.
MR-65	Eielson Operations Study	Consider transit connection or other mobility options for a connection to Eielson Airforce Base and Salcha.
MR-66	FNSB Air Quality Programs (CMAQ)	Funding to support ongoing efforts and recommendations outlined under the Fairbanks North Star Borough Carbon Monoxide Air Quality Maintenance Plan.
MR-67	Johansen Expressway Offramp	Construct a new offramp from Johansen Expressway to Merhar Avenue/Loop Road in the Bentley Trust Area.
MR-68	Peger Improvements	Improve Peger Road between Van Horn and Tria. Major Intersection reconstruction at Peger/Van Horn to accommodate freight turning movement (south to west movement) and consider replacement of 3-way stop with roundabout.
MR-69	University Avenue Warning System	Install a warning system at the University Avenue at-grade crossing that alerts motorists that the crossing will be blocked for an extended period of time.
MR-70	Steese Expressway MP 2-5 Resurfacing	Reconstruct the Steese Expressway from the intersection with Farmer's loop Road up to and including the Chena Hot Springs Road interchange.
Long Range Projects		
FAST Planning Projects		
LR-1	College Road Reconstruction Stage II	Reconstruct College Road from Margaret Avenue to the Steese Expressway and narrow College Road median to add 3-foot shoulders (approximately 1.2 miles).
LR-2	Badger Road Corridor Study	Conduct study of future road conditions on Badger Road.
LR-3	Phillips Field Road/Minnie Street Realignment	Realign Phillips Field Road to create a four-leg intersection with Minnie Street.
LR-4	South Cushman Freight Improvements	Develop safety, capacity, and freight improvements for South Cushman Street between 23rd Avenue and Van Horn Road. Consider roundabouts at 28th and 30th Avenues.
LR-5	FAST Planning Improvement Program	Funding for the annual Preventative Maintenance or Rehabilitation Activities Program within the FAST Planning Area for non-NHS routes.
LR-6	Van Horn Road–University Avenue–Peger Road	Install bicycle lanes to provide a complete connection around southern Fairbanks.
LR-7	Davis Road: University Avenue–Peger Road	Construct sidewalk on the south side of Davis Road.

Project ID	Project Name	Project Description
LR-8	Phillips Field Road: Peger Road–Illinois Street	Construct a shared-use path along the north side of the Chena River, if feasible. Bicycle lanes should be considered where they are feasible along Phillips Field Road if this path cannot be built.
LR-9	FAST Planning Coordinator's Office	Funding for the Fairbanks Area Surface Transportation (FAST) Planning Coordinator's office which supports delivery of the FAST Planning program.
LR-10	Advance Project Definition	Provide funding to the State and City to develop new estimates for TIP projects.
LR-11	MTP Update	Update the FAST Planning Metropolitan Transportation Plan, as required under 23 USC 134.
LR-12	Van Horn Road Bicycle Facility Improvements	Provide separated bicycle facilities on Van Horn Road between Peger Road and S Cushman Street.
LR-13	Airport Way Frontage Road Conversion	Implement the conversion of frontage roads to non-motorized paths per the Airport Way Functional Features Plan.
LR-14	Old Richardson Highway: VFW Street to Dyke Road Bicycle Facilities	Add separated bicycle facilities at the south end of Old Richardson Highway between VFW Street and Dyke Road.
LR-15	Mistletoe Drive/ Laurance Road (East) Bicycle Facilities	Add separated bicycle facilities to Laurance Road between Mistletoe Drive and Nelson Road.
LR-16	Old Richardson Highway and Homestead Drive Bicycle Facilities	Add separated bicycle facilities along Old Richardson Highway and provide a bicycle connection on Homestead Drive between Richardson Highway and Perimeter Drive.
LR-17	Repp Road Bicycle Facilities	Add bicycle facilities between Badger Road and Pool Street.
LR-18	Brock Road Bicycle Facilities	Add bicycle facilities on Brock Road between Peede Road and Repp Road.
LR-19	Fairbanks 2nd Avenue Festival Street	Create a festival street along 2nd Avenue between Cushman Street and Lacey Street.
LR-20	Laurance Road (West) Bicycle Facilities	Add separated bicycle facilities to Laurance Road between the Old Richardson Highway and Richardson Highway.
LR-21	Dawson Road Bicycle and Pedestrian Facilities	Widen shoulders or add path from Lineman to Hurst.
LR-22	Peede Road Bicycle Facilities	Add bicycle facilities on Peede Road between Badger Road and Brock Road.
LR-23	Hollowell Road Bicycle Facilities	Add buffered bicycle facilities between Repp Road and Plack Road.
LR-24	Fairbanks 12th Avenue Bicycle Facilities	Provide bicycle facilities along 12th Avenue between the Steese Highway and Barnette Street.
LR-25	Turner Street Bicycle Corridor	Create a park strip or pedestrian and bicyclist corridor between 2nd Avenue and 5th Avenue.
LR-26	Noyes Slough Pedestrian Bridge	Construct a pedestrian bridge over Noyes Slough from Slaterville to College Road.
LR-27	Fairbanks Drainage Priority Projects	Replace/upgrade priority drainage sites including extending B Street storm drain, Fairwell Avenue north through Hamilton Acres, past Trainor Gate, and Lazelle Road.
Non-FAST Planning Projects		
LR-28	Rail Access to FAI	Conduct a study regarding the feasibility of resuming rail service to FAI
LR-29	Richardson Highway Corridor Plan	Develop multimodal vision for Richardson Highway Corridor from the Steese Expressway to Laurance Road establishing access locations and frontage road alignments.
LR-30	Cowles Street/Airport Frontage Road	Investigate potential improvements to make this unsignalized intersection crossing more comfortable for non-motorized users (possibly done in conjunction with the designation of the Airport Way bicycle route described previously).
LR-31	Airport Way Corridor Improvements, Stage I	This is the first in a series of projects to implement the recommendations of the Airport Way Improvements Reconnaissance Study.
LR-32	Johansen Expressway/Danby Street Interchange	Construction of a grade-separated intersection to handle long-term traffic growth and improve safety on the Johansen Expressway.
LR-33	Mitchell Expressway Interchange, Stage I	Construction of a grade-separated interchange on the Mitchell Expressway at University Avenue to provide for long-term growth in the Fairbanks area. Ongoing monitoring of community and traffic growth and changing travel patterns are important in selecting the project timing and configuration.
LR-34	Richardson Highway: Access/Safety Improvements (Rozak Road–Peridot Street)	Consolidation of intersection and driveway access onto the Richardson Highway with needed links to collector roads on both the north and south sides of the corridor. Special considerations are needed for future access to large undeveloped parcels of land to the north of the Richardson Corridor and the Alaska Railroad tracks.
LR-35	NHS Pavement Management/Preventive Maintenance	Funding for the annual DOT&PF Preventative Maintenance Program within the FAST Planning Area for NHS routes. Recommendations for pavement rehabilitation are developed under the ongoing Pavement Management System.
LR-36	Parks Highway MP 349-356	Construct safety and mobility improvements along the Parks Highway including the intersections at Sheep Creek Road and Cripple Creek Road.
LR-37	Johansen Path Bridge to Charles Street	Complete the partially constructed bicycle/pedestrian overcrossing of the Johansen Expressway between the railroad depot and College Road and provide a paved connection to the railroad depot and Illinois Street.
LR-38	Trainor Gate Road Intersection Improvements	Construct improvements to the intersection of Trainor Gate Road, Steese Expressway, and Old Steese Highway.

Project ID	Project Name	Project Description
LR-39	Airport Way Corridor Improvements, Stage II	This is the second in a series of projects to implement the recommendations of the Airport Way Improvements Reconnaissance Study.
LR-40	Transit Vehicle Replacement	Add or replace approximately 5 transit and/or paratransit vehicles.
LR-41	FNSB Air Quality Programs (CMAQ)	Funding to support ongoing efforts and recommendations outlined under the Fairbanks North Star Borough Carbon Monoxide Air Quality Maintenance Plan.
LR-42	Buzby Road/Laurence Road Intersection Improvements	Reconstruct intersection to facilitate truck turning movements
LR-43	Van Horn Road Overhead Lighting	Increase vertical clearance for overhead lighting/illumination on Van Horn Road.
Very Long Range Projects		
FAST Planning Projects		
VLR-1	Dennis Road Extension: North Pole	Reconstruction to handle increasing travel demands, to improve safety, and reduce maintenance costs. Extend Dennis Road from Badger Road to Seawolf Drive, to provide public access to an existing residential area. Project to include pedestrian facilities from Badger Road to the north side of Chena River including the construction of a new bridge.
VLR-2	Lyle Ave Extension (Newby Road–Nelson Road)	Construct a new road link between Nelson Road and Newby Road/Conifer Drive to provide improved access to the Richardson Highway/Dawson Road interchange. This project is warranted if a future interchange is not constructed at Richardson Highway/Laurance Road.
VLR-3	Phillips Field Road Improvements	Reconstruct Phillips Field Road to improve safety for all transportation modes, including intersection improvements.
VLR-4	Fairbanks Area Street Improvements	Funding to support further implementation of local comprehensive plans.
VLR-5	Chena Pump Road Connection	Construction of a new roadway link between the Chena Pump Road area and Airport Way, including pedestrian facilities, to provide an alternative travel route. This project would also require construction of a new Chena River Bridge.
Non-FAST Planning Projects		
VLR-6	Mitchell Expressway Interchange, Stages II and III	Construction of two more grade-separated interchanges on the Mitchell Expressway to provide for long-term growth in the Fairbanks area and help to implement the original "Ultimate Freeway" status of the Richardson Highway/Mitchell Expressway/Parks Highway Corridor (Eielson-Ester). Ongoing monitoring of community and traffic growth and changing travel patterns are important in selecting one of the alternate locations, which include Peger Road, University Avenue, and Lathrop Street.
VLR-7	Richardson Highway: 3-Mile/Old Richardson Interchange	Construction of a grade-separated crossing at the Richardson Highway/Old Richardson Crossover. Alternates would include either a partial overpass (outbound Richardson Highway) or a full diamond interchange.
VLR-8	Richardson Highway: North Pole Area Interchange Phase II	Construction of another Richardson Corridor grade-separated crossing in the North Pole area at Laurance Road.
VLR-9	Richardson Highway Area Roadway Improvements (Local Roads)	Construct street connections north of the Richardson Highway, south of Bradway Road, and west of Woll Road. The exact location of the roadways will be determined at the time property begins to develop.
VLR-10	Old Steese Highway: Farmers Loop Road–Chena Hot Springs Road	Chena Hot Springs Road—Widen shoulders where feasible and install signs reminding bicyclists and motor vehicles to "share the road." Note that DOT&PF is currently considering a project to connect Farmer's Loop Road to Chena Hot Springs Road. The recommendations from the DOT&PF project will likely affect the need for this project.
VLR-11	Ballaine Road Bicycle Corridor: Yankovich Road-Goldstream Road	Major reconstruction of the old Ballaine Road Bike Path through the Goldstream Valley.
VLR-12	East-West Regional Trail	Construct bicycle and pedestrian connection from the airport to the Chena Lakes bicycle and pedestrian trail.
VLR-13	Mitchell Expressway Parallel Bicycle and Pedestrian Facilities	Construct bicycle and pedestrian facilities parallel to Mitchell Expressway.
VLR-14	Transit Signal Priority	Conduct a study to identify locations where transit signal priority can help improve transit operations and implement transit signal priority at those locations. May be dependent on signal controller upgrades.
VLR-15	Rail Extension from Pioneer Park to the Morris Thompson Cultural and Visitors Center	Construct a rail track from Pioneer Park to the Morris Thompson Cultural and Visitors Center.
VLR-16	North Pole, Alaska, Road/Rail Crossing Reduction Project	This project will realign the railroad track along a portion of ARRC Eielson Branch to reduce the number of at-grade road-rail crossings in the City of North Pole and enhance safety. It includes elimination of a major at-grade road/rail crossing of the Richardson Highway, a NHS roadway. The project will be accomplished by relocating the railroad from the population center of North Pole to a rural area along or near the Tanana River Levee structure. The project will extend from Richardson Highway Milepost 355 to Highway Milepost 347, popularly known as Mile 9, to the easterly portion of the City of North Pole.

Project ID	Project Name	Project Description
VLR-17	Fairbanks Rail Realignment	This project will optimize the alignment of mainline and branch track within the Fairbanks Area to improve customer response and minimize transportation conflicts with the adjacent communities.

FINANCIAL PLAN

This section contains the funding plan that supports the fiscally constrained portion of the 2045 MTP. Included in this section are cost estimates for each project described in the Implementation Plan. These estimates were prepared by DOT&PF and FAST Planning. To more discretely demonstrate cost feasibility, expected revenue levels are estimated for each timeframe through the horizon year. Figure 3 summarizes the project cost and revenue estimates for each timeframe.

The implementation plan is fiscally constrained through FY2045. Estimated revenues range from about $310 million to $665 million with the different timeframes. Estimated costs by project and revenues by source are provided in the subsequent sections. Figure 3 demonstrates fiscal constraint for each MTP timeframe. During Short Range period, years 2023-27, total revenues are forecast to be $310.2M while programmed project costs total $308.8M. The Medium and Long Range periods have excess funding forecasted. Revenues assumptions are documented in Table 4 below including inflation assumed at 2.5% annually. Project costs per period in 2023 dollars are shown in Table 3 below. These costs are inflated in Figure 3 consistent with the financial projection method.

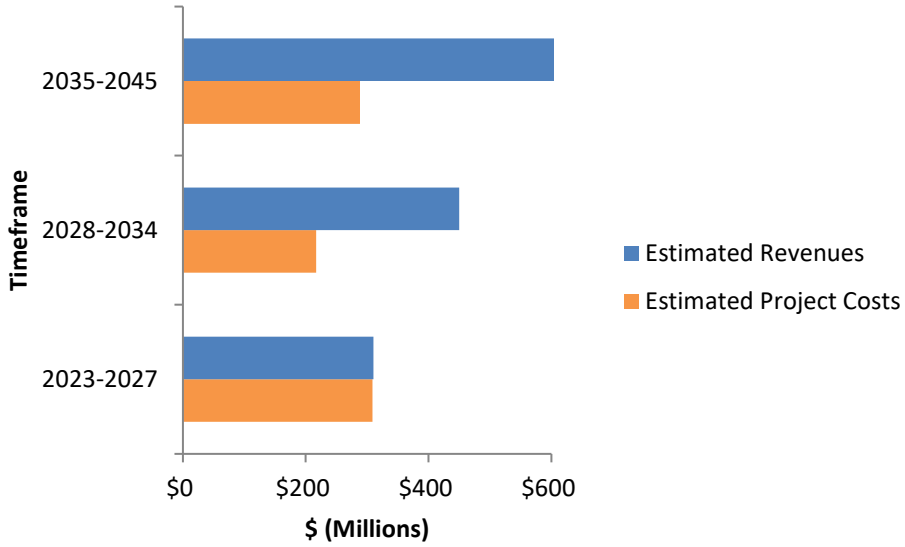


Figure 3. Summary of Cost Estimates and Revenues by Timeframe

SPENDING PLAN

Table 3 shows the estimated cost for each project by timeframe.

Table 3: 2045 Projects Spending Plan

Project ID	Project	Spending Plan ($ Million)			
		2023-2027	2028-2034	2035-2045	Beyond 2045
FAST Planning Short Range Projects					
SR-1	Cowles St Reconstruction (East Cowles - 1st Ave)	$12.1			
SR-2	Yankovich/Miller Hill Road Reconstruction	$5.4			
SR-3	Chena River Walk Stage III	$1.9			
SR-4	FAST Coordinator's Office	$0.7			
SR-5	Advance Project Definition	$0.1			
SR-6	Transportation Demand Management (TDM) Strategies	$0.1			
SR-7	Pearl Creek Elementary Access Improvements	$3.0			
SR-8	Woll Road Resurfacing & Widening	$3.4			
SR-9	Geist/Chena Pump Road Corridor Study	$0.5			
SR-10	8th Avenue Path Resurfacing	$0.8			
SR-11	Chena Landings Loop Path Reconstruction	$0.4			
SR-12	Clay Street Bicycle Facilities	$1.0			
SR-13	Winter Weather Event Equipment	$1.0			
SR-14	Doughchee Avenue Improvements	$0.6			
SR-15	Safe Routes to School	$0.1			
SR-16	Lacey Street Reconstruction Planning Study	$0.2			
SR-17	University Avenue South Bicycle & Pedestrian Path	$2.2			
SR-18	4th Avenue Reconstruction	$2.0			
SR-19	Pioneer Park North Parking Lot & Boat Launch	$3.4			
SR-20	FNSB Parking & Pathway Improvements & Community Access	$1.5			
SR-21	5th Avenue Reconstruction	$3.8			
SR-22	Share the Road Educational Outreach	$0.1			
SR-23	Bike Lane Signing and Striping	$0.6			
SR-24	Driver's Education Program	$0.1			
SR-25	Peger Road Bicycle & Pedestrian Path	$1.0			
SR-26	Airport Way/Peger Road Intersection Study	$0.7			
SR-27	Geist Road Sidewalk Safety Improvements	$0.5			
SR-28	FAST Planning Improvement Program	$5.0			
SR-29	Barnette Street Reconstruction	$15.5			
SR-30	FAST Carbon Reduction Program	$5.0			
SR-31	Household Travel Survey	$0.1			
SR-32	MTP Update	$0.4			
SR-33	Transit Plan Updates	$0.5			
FAST Planning Short Range Subtotal		*$73.8*			
Non-FAST Planning Short Range Projects					
SR-34	Aurora Drive Noyes Slough Bridge #0209 Replacement	$6.9			
SR-35	Airport Way/Cushman Street Intersection Reconstruction	$13.0			
SR-36	Chena Pump/Chena Small Tracts Road Roundabout	$2.3			
SR-37	City of Fairbanks Systematic Signal Upgrades	$6.9			
SR-38	Old Steese Highway Reconstruction	$16.9			
SR-39	NHS Pavement Management/Preventive Maintenance	$60.0			
SR-40	Steese/Johansen Expressway Interchange	$56.0			
SR-41	Richardson Highway MP 357-362 Bicycle/Pedestrian Path	$4.1			
SR-42	FNSB Air Quality Programs (CMAQ)	$2.1			
SR-43	FNSB Statewide Implementation Plan (SIP)	$1.0			
SR-44	TIP/LRTP Conformity Analysis	$0.1			
SR-45	Old Steese Improvements	$16.0			
SR-46	New Buses	$2.0			
SR-47	New Transit Van	$0.3			
SR-48	Buzby Road/Dawson Road exit from Richardson Highway Study	$0.1			
SR-49	Truck Route Signage	$0.2			

Project ID	Project	Spending Plan ($ Million)			
		2023-2027	2028-2034	2035-2045	Beyond 2045
SR-50	Richardson Highway MP 351 Interchange	$21.0			
SR-51	Richardson Highway MP 360-361 (MP 359) Railroad Grade Separated Facility	$26.0			
Non-FAST Planning Short Range Subtotal		*$235.0*			
Short Range Projects Total		**$308.8**			
FAST Planning Medium Range Projects					
MR-1	Lacey Street Reconstruction		$11.6		
MR-2	Minnie Street Reconstruction		$14.7		
MR-3	Dyke Road Improvements		$2.2		
MR-4	Dawson Road Extension (Hurst Road–Plack Road)		$4.5		
MR-5	North Tanana Dr Extension (UAF)		$4.1		
MR-6	Tanana Loop Reconstruction (UAF)		$2.1		
MR-7	Bradway Road Reconstruction		$11.2		
MR-8	Peridot Street Reconstruction: FNSB		$4.9		
MR-9	Holmes Road Reconstruction		$13.7		
MR-10	Wendell Avenue Study		$0.3		
MR-11	FAST Planning Improvement Program		$9.0		
MR-12	Lathrop Street: Eagan Avenue–16th Avenue		$0.1		
MR-13	5th Avenue (NP): Santa Claus Lane–Therron Street		$0.8		
MR-14	8th Avenue (NP): St Nicholas Drive–Blanket Boulevard		$0.3		
MR-15	Dartmouth Drive: Chena Pump Road–Stanford Drive		$0.8		
MR-16	Fairbanks Street: Birch Lane–Teal Avenue		$0.1		
MR-17	Boat Street Path Crossing		$0.6		
MR-18	College Road Pedestrian Crossings		$0.6		
MR-19	Egan Avenue Pedestrian Improvements		$1.1		
MR-20	2nd Avenue (Fairbanks): Hall St–Clay St		$0.1		
MR-21	7th Avenue (Fairbanks): End of sidewalk – 3rd Ave		$0.2		
MR-22	5th Avenue–Mission Road/Richardson Highway		$0.2		
MR-23	Old Steese Highway/Farmers Loop Road		$5.6		
MR-24	Roland Road Improvements		$1.1		
MR-25	Chena Lakes–Plack Road Bicycle and Pedestrian Facilities		$0.6		
MR-26	Nelson Road Bicycle and Pedestrian Facility		$8.0		
MR-27	FAST Planning Coordinator's Office		$0.7		
MR-28	Advance Project Definition		$0.1		
MR-29	MTP Update		$0.4		
MR-30	Gravel to Pavement		$1.9		
MR-31	Dawson Road Improvements		$1.0		
MR-32	South Davis Park Pathways		$1.2		
MR-33	Tanana Lakes Recreation Area – Cushman Lake Loop Trail		$1.1		
MR-34	Island Homes Sidewalk Upgrades		$7.6		
MR-35	Electric Vehicle Infrastructure Deployment		$2.0		
MR-36	Hillside Flooding/Icing Mitigation		$1.0		
MR-37	Airway Drive Bridge Replacement		$0.5		
MR-38	Outside Hurst Boulevard Bridge Replacement		$0.5		
MR-39	Spruce Branch Drive Bridge Replacement		$0.5		
MR-40	O'Connor Road Bridge Rehabilitation		$2.5		
MR-41	Downtown Fairbanks Bicycle Parking		$0.2		
MR-42	Safety Action Plan		$0.2		
MR-43	Wildlife-Vehicle Collision Mitigation		$1.0		
MR-44	Lathrop Street Bicycle Facilities		$1.3		
MR-45	Parks Highway Path Rehabilitation		$2.5		
MR-46	Davis Road Sidewalk Improvements		$1.0		
MR-47	Santa Claus Lane Bicycle Facilities		$0.3		
MR-48	Wien Park Path Connection		$0.7		
MR-49	Johansen South Path Resurfacing		$0.4		
MR-50	Minnie Street Noyes Slough Bridge Replacement		$7.0		
MR-51	College Road Safety & Access Improvements Planning Study		$1.1		

Project ID	Project	Spending Plan ($ Million)			
		2023-2027	2028-2034	2035-2045	Beyond 2045
FAST Planning Medium Range Subtotal			*$135.4*		
Non-FAST Planning Medium Range Projects					
MR-52	Richardson Highway Corridor Study: Badger Road to Salcha		$0.3		
MR-53	ARRC Yard Access Study		$0.2		
MR-54	NHS Pavement Management/Preventive Maintenance		$8.4		
MR-55	Chena Pump Road Roundabout Interchange		$4.5		
MR-56	Danby Street Interchange Study		$0.5		
MR-57	Airport Way: Steese Highway–Parks Highway		$1.7		
MR-58	Highway Dynamic Messaging Sign		$0.2		
MR-59	Peridot Street/Richardson Highway Crossing		$1.1		
MR-60	Farmers Loop-Chena Hot Springs Road Trail Connections: FNSB		$4.1		
MR-61	Richardson Highway (NP) Alternate Route: Peridot Street–Laurance Road		$0.7		
MR-62	Geist Road: Parks Highway–Fairbanks Street		$0.8		
MR-63	Fairbanks-North Pole Bicycle and Pedestrian Multi-Use Path		$0.6		
MR-64	Sunday Service		$0.4		
MR-65	Eielson Operations Study		$0.6		
MR-66	FNSB Air Quality Programs (CMAQ)		$3.4		
MR-67	Johansen Expressway Offramp		$0.6		
MR-68	Peger Improvements		$5.0		
MR-69	University Avenue Warning System		$0.3		
MR-70	Steese Expressway MP 2-5 Resurfacing		$10.5		
Non-FAST Planning Medium Range Subtotal			*$43.9*		
Medium Range Projects Total			**$179.3**		
FAST Planning Long Range Projects					
LR-1	College Road Reconstruction Stage II			$3.9	
LR-2	Badger Road Corridor Study			$0.1	
LR-3	Phillips Field Road/Minnie Street Realignment			$4.5	
LR-4	South Cushman Freight Improvements			$5.6	
LR-5	FAST Planning Improvement Program			$9.0	
LR-6	Van Horn Road–University Avenue–Peger Road			$1.9	
LR-7	Davis Road: University Avenue–Peger Road			$1.2	
LR-8	Phillips Field Road: Peger Road–Illinois Street			$1.3	
LR-9	FAST Planning Coordinator's Office			$0.6	
LR-10	Advance Project Definition			$0.1	
LR-11	MTP Update			$0.4	
LR-12	Van Horn Road Bicycle Facility Improvements			$4.5	
LR-13	Airport Way Frontage Road Conversion			$5.0	
LR-14	Old Richardson Highway: VFW Street to Dyke Road Bicycle Facilities			$1.0	
LR-15	Mistletoe Drive/ Laurance Road (East) Bicycle Facilities			$1.0	
LR-16	Old Richardson Highway and Homestead Drive Bicycle Facilities			$3.0	
LR-17	Repp Road Bicycle Facilities			$4.0	
LR-18	Brock Road Bicycle Facilities			$4.0	
LR-19	Fairbanks 2nd Avenue Festival Street			$0.5	
LR-20	Laurance Road (West) Bicycle Facilities			$2.0	
LR-21	Dawson Road Bicycle and Pedestrian Facilities			$0.8	
LR-22	Peede Road Bicycle Facilities			$5.5	
LR-23	Hollowell Road Bicycle Facilities			$2.0	
LR-24	Fairbanks 12th Avenue Bicycle Facilities			$2.0	
LR-25	Turner Street Bicycle Corridor			$1.8	
LR-26	Noyes Slough Pedestrian Bridge			$3.0	
LR-27	Fairbanks Drainage Priority Projects			$1.0	
FAST Planning Long Range Subtotal				*$69.8*	

Project ID	Project	Spending Plan ($ Million)			
		2023-2027	2028-2034	2035-2045	Beyond 2045
Non-FAST Planning Long Range Projects					
LR-28	Rail Access to FAI			$0.2	
LR-29	Richardson Highway Corridor Plan			$0.3	
LR-30	Cowles Street/Airport Frontage Road			$0.6	
LR-31	Airport Way Corridor Improvements, Stage I			$22.4	
LR-32	Johansen Expressway/Danby Street Interchange			$33.6	
LR-33	Mitchell Expressway Interchange, Stage I			$33.6	
LR-34	Richardson Highway: Access/Safety Improvements (Rozak Road–Peridot Street)			$6.8	
LR-35	NHS Pavement Management/Preventive Maintenance			$8.4	
LR-36	Parks Highway MP 349-356			$3.4	
LR-37	Johansen Path Bridge to Charles Street			$11.2	
LR-38	Trainor Gate Road Intersection Improvements			$21.8	
LR-39	Airport Way Corridor Improvements, Stage II			$23.5	
LR-40	Transit Vehicle Replacement			$2.9	
LR-41	FNSB Air Quality Programs (CMAQ)			$0.1	
LR-42	Buzby Road/Laurence Road Intersection Improvements			$1.5	
LR-43	Van Horn Road Overhead Lighting			$2.0	
Non-FAST Planning Long Range Subtotal				*$172.4*	
Long Range Projects Total				**$242.1**	
FAST Planning Very Long Range Projects					
VLR-1	Dennis Road Extension: North Pole				$20.2
VLR-2	Lyle Ave Extension (Newby Road–Nelson Road)				$3.0
VLR-3	Phillips Field Road Improvements				$22.4
VLR-4	Fairbanks Area Street Improvements				$19.0
VLR-5	Chena Pump Road Connection				$9.0
FAST Planning Very Long Range Subtotal					*$73.6*
Non-FAST Planning Very Long Range Projects					
VLR-6	Mitchell Expressway Interchange, Stages II and III				$67.2
VLR-7	Richardson Highway: 3-Mile/Old Richardson Interchange				$33.6
VLR-8	Richardson Highway: North Pole Area Interchange Phase II				$33.6
VLR-9	Richardson Highway Area Roadway Improvements (Local Roads)				$11.2
VLR-10	Old Steese Highway: Farmers Loop Road–Chena Hot Springs Road				$0.6
VLR-11	Ballaine Road Bicycle Corridor: Yankovich Road-Goldstream Road				$4.5
VLR-12	East-West Regional Trail				$39.2
VLR-13	Mitchell Expressway Parallel Bicycle and Pedestrian Facilities				$9.0
VLR-14	Transit Signal Priority				$0.2
VLR-15	Rail Extension from Pioneer Park to the Morris Thompson Cultural and Visitors Center				$16.8
VLR-16	North Pole, Alaska, Road/Rail Crossing Reduction Project				$77.2
VLR-17	Fairbanks Rail Realignment				$112.0
Non-FAST Planning Very Long Range Subtotal					*$405.0*
Very Long Range Projects Total					**$478.6**

REVENUE ESTIMATES

Revenue was estimated from the following sources. The DOT&PF Northern Region (NR) allocation of appropriated funds was provided by the DOT&PF.

This table summarizes anticipated revenue estimates from Federal Fiscal year 2023 to 2027 and beyond by funding type for projects in the FAST Planning boundary. Following the table is the methodology by which the estimates were derived.

Table 4: Fiscal Plan

Program	Annual	FFY2023-2027	FFY2028-2034	FFY2035-2045
NHS/NHPP	$26.2M	$131.0M	$190.0M	$280.9M
STP-FAST Planning	$8.1M	$40.3M	$58.5M	$86.5M
STP-NR	$6.9M	$34.3M	$49.8M	$73.6M
HSIP	$12.9M	$64.4M	$93.4M	$138.1M
CMAQ FAST	$0.7M	$3.6M	$5.3M	$7.8M
CMAQ PM2.5	$2.1M	$10.7M	$15.5M	$23.0M
CMAQ Statewide	$3.0M	$15.0M	$21.8M	$32.1M
Carbon Reduction	$0.9M	$4.3M	$6.2M	$9.2M
TAP- FAST	$0.5M	$2.6M	$3.7M	$5.5M
Planning Funds	$0.5M	$2.6M	$3.8M	$5.7M
Transit	$0.2M	$1.2M	$1.7M	$2.6M
TOTAL REVENUE ESTIMATE	**$61.0M**	**$310.2M**	**$449.8M**	**$665.0M**

**Out years were calculated based on anticipated inflation*

National Highway System/National Highway Performance Program (NHS/NHPP) annual funding estimate is based on current projects listed within the STIP and historical funding spent within the MPA.

Surface Transportation Program-FAST (STP-FAST) annual funding is based on the FAST Planning Allocations of the Federal-Aid Highway Apportionment & General Fund Supplement Appropriations for Alaska.

Surface Transportation Program-NR (STP-NR) was determined by the annual Preventive Maintenance funding received by the DOT&PF for the entire Fairbanks District. The M&O Fairbanks District Superintendent estimates 50% is spent within the MPA. It is currently estimated at $2.5 million. CTP projects programmed in the STIP are also included in this estimate.

Highway Safety Improvement Program (HSIP) funding is estimated from the HSIP FFY2023-2025 funding plan.

Congestion Mitigation Air Quality-FAST (CMAQ-FAST) annual funding is based on the FAST Planning Allocations of the Federal-Aid Highway Apportionment & General Fund Supplement Appropriations for Alaska

Congestion Mitigation Air Quality-PM2.5 (CMAQ-PM2.5/SIP) is estimated at $2.1million per year as programmed in the 2020-2023 STIP Amendment #5.

CMAQ Statewide estimated on prior obligations within the FAST MPA in previous years.

Carbon Reduction annual funding is based on the FAST Planning Allocations of the Federal-Aid Highway Apportionment & General Fund Supplement Appropriations for Alaska

Transportation Alternatives Program (TAP) is formula funding based on the 2020-2023 STIP.

Planning/PL annual funding is based on the FAST Planning Allocations of the Federal-Aid Highway Apportionment & General Fund Supplement Appropriations for Alaska

Transit is estimated from available funds through the 5303 planning grant.

Exhibits 1-3 summarize the revenue estimates for the short, medium, and long range (fiscal year 2023-2027, 2028-2034, 2035-2045 respectively) that are anticipated to be available. The total revenue estimate is $310.2 million for short range projects, $449.8 million for medium range projects, and $665.0 million for long range projects.

Exhibit 1: Revenue Estimates ($ Millions)—Short Range (FY2023–2027)

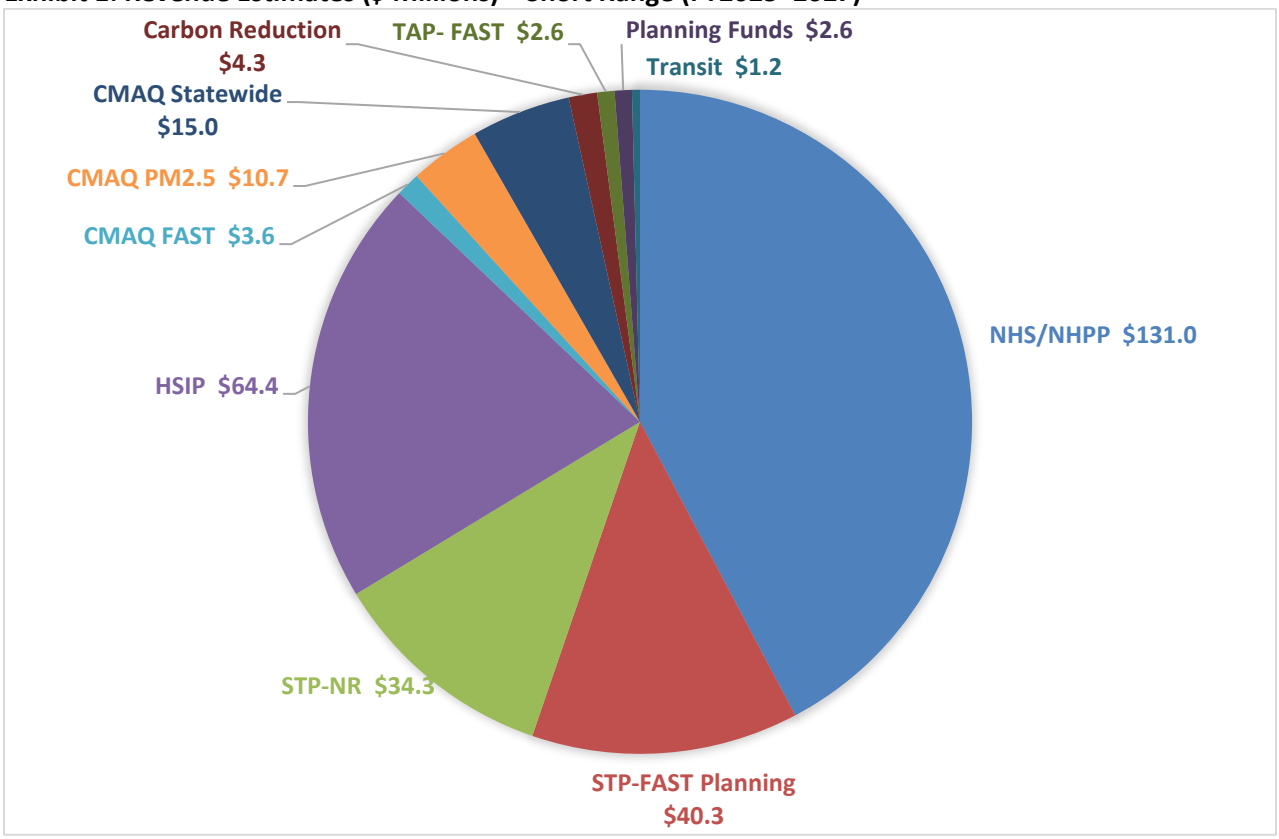


Exhibit 2: Revenue Estimates ($ Millions)—Medium Range (FY2028–2034)

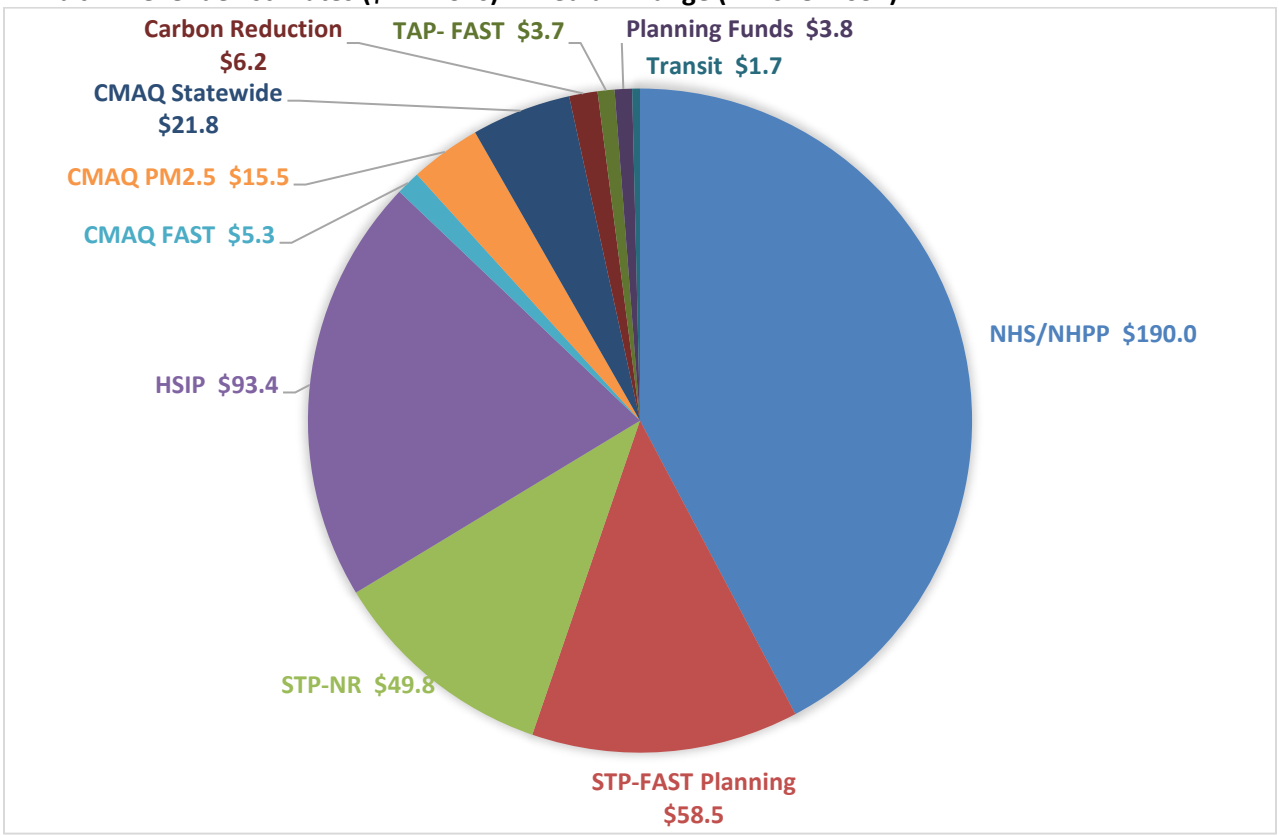
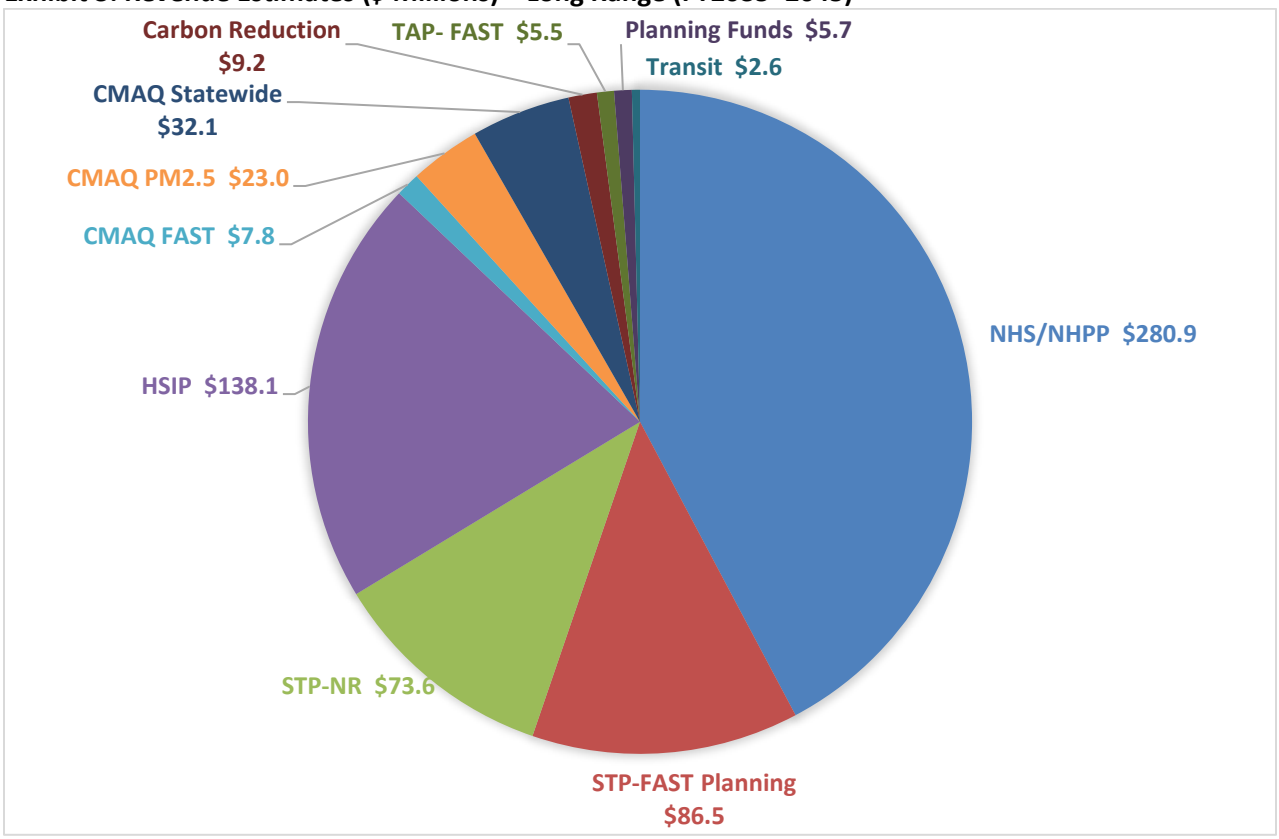


Exhibit 3: Revenue Estimates ($ Millions)—Long Range (FY2035–2045)



APPENDIX 6: ALL IATP NEEDS AND PROJECTS

APPENDIX 7: WAYSIDES NEEDS AND PROJECTS

Waysides Needs and Projects

NEED ID	PROJECT TITLE	DESCRIPTION	Road/Road Type	PLACE NAME/BOROUGH	SUB-REGION	PRIORITY
14419	Alaska Public Lands Information Center	Construct a new Alaska Public Lands Information Center (APLIC) on the Alaska Highway on or near Tok.	Alaska Highway	Tok	Upper Tanana	Low
4022	Alaska Highway MP 1264 - Chisana River Wayside	Upgrade river access and boat ramp, at the Chisana River Bridge, off the Alaska Highway on Northway Road.	Alaska Highway	Copper River	Copper River	Low
3934	Denali Highway MP 15 - Tangle Lakes Archaeological District Wayside	Construct wayside with parking and interpretive signs.	Denali Highway	Copper River	Copper River	Low
3813	Glenn Highway MP 137 - Little Nelchina Wayside	Improve the access road and parking at Little Nelchina Rest Stop at MP 137 Glenn Highway.	Glenn Highway	Copper River	Copper River	Low
3700	Parks Highway MP 305 to 351: Fairbanks - Nenana Scenic Waysides	Upgrade existing waysides/overlooks along the Parks Highway Nenana Ridge.	Parks Highway	FBX	Fairbanks	Low
22573	Delta Visitor Center Access Improvements	Improve access to the Delta Visitor's Center. Increase turn radius to allow larger vehicle access. Improve crosswalks and pedestrian access to Sullivan Roadhouse.	Richardson Highway	Delta Junction	Upper Tanana	Low
3997	Richardson Highway MP 101 Klutina River Wayside	Construct new wayside with sanitary facilities.	Richardson Highway	Copper Center	Copper River	Low
23815	Richardson Highway Tazlina Wayside Riverbank Stabilization	Stabilize the river embankment at Richardson Highway Tazlina Wayside.	Richardson Highway	Tazlina	Copper River	Low
3694	Richardson Highway MP 325 - Munson Slough Turnout	Enlarge/upgrade existing wayside.	Richardson Highway	FBX	Fairbanks	Low
3695	Richardson Highway MP 342 and 343 - Piledriver Slough Access, Eielson Farm Road	Construct parking areas and pull-offs for 10 to 12 vehicles.	Richardson Highway	FBX	Fairbanks	Low
TBD	Castner Creek Trail Parking Lot		Richardson Highway	Copper River	Copper River	Medium
TBD	Tazlina Boat Launch Improvements	For fire safety	Richardson Highway	Tazlina	Copper River	Medium
3933	Tok Cutoff Highway MP 13 - Wrangell Mountain Viewpoint	Improve existing turnout. Includes premonitory signs, entry sign and interpretive sign, and a short trail.	Tok Cutoff	Copper River	Copper River	Low
3636	Tok Cutoff Highway MP 64 Porcupine Creek Wayside	Construct new trailhead, improve access road, add informational kiosk and provide landscaping.	Tok Cutoff	Copper River	Copper River	Low
3620	Tok Cutoff/Nabesna Road Interpretive Waysides	Improve 12 scenic pullouts along Tok Cutoff and Nabesna Road.	Tok Cutoff	Nabesna	Copper River	Low
32983	Birch Hill Recreation Area Access Road & Parking Areas (CMAQ)	This project will pave the existing Birch Hill Recreation Area gravel access road and adjacent parking areas with asphalt pavement.	Community Road	FBX	Fairbanks	Low
30204	Birch Hill Recreation Area Trailhead Parking	Construction of a 110-space gravel parking areas south of the existing upper parking lot where a terrain park is located and expand the lower gravel parking area to the west, providing approx. 16,000 ft of staging space. (To be delivered by FNSB.)	Community Road	FBX	Fairbanks	Low
9910	Steese Highway MP 147- Birch Creek Wayside	Construct a wayside/parking area. Includes boat launch and sanitary facilities.	Steese Highway	Central/Circle	Yukon Flats	Low

APPENDIX 4:

Detailed Table Showing Crossing by Mode at the Alcan Land Port of Entry

Border Arrivals at the Alcan Port of Entry per Fiscal Year by Month

Fiscal Year (FY)	Transportation Mode	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
FY 2022	Passenger Vehicles	2,100	1,200	827	717	824	1,700	3,600	8,700	16,400	15,500	10,400	4,700	66,600
	Pedestrians	26	21	1	8	26	13	39	135	807	1,200	1,100	217	3,600
	Truck	561	476	468	349	272	433	487	522	537	585	623	566	5,900
	Air	12	2	–	–	2	13	9	58	60	34	21	10	221
FY 2023	Passenger Vehicles	2,400	1,500	1,100	1,100	1,200	2,000	4,000	10,900	18,800	19,900	14,100	6,100	83,000
	Pedestrians	105	23	11	10	25	28	68	204	1,600	1,000	1,000	282	4,400
	Truck	602	601	486	504	507	708	854	912	891	900	595	791	8,300
	Air	13	3	–	–	1	6	10	33	56	18	17	13	169
FY 2024	Passenger Vehicles	3,000	1,400	1,00	1,100	1,400	2,700	4,300	11,100	19,800	19,400	13,900	6,500	85,500
	Pedestrians	77	17	3	7	17	41	52	289	1,100	1,400	1,200	414	4,600
	Truck	723	718	573	715	755	877	766	1,300	1,200	1,000	1,000	945	10,700
	Air	–	2	2	1	4	3	17	53	32	12	7	–	133

APPENDIX 5:

Memorandum of Agreement Between Alaska Railroad Corporation and Fairbanks North Star Borough

ATTACHMENT A

FNSB CLERK'S OFFICE
RECEIVED
DATE 6/8
TIME 4:00pm

MEMORANDUM OF UNDERSTANDING #1
FAIRBANKS NORTH STAR BOROUGH
ALASKA RAILROAD CORPORATION

25 June 2007

THE PURPOSE OF THIS MOU

Alaska Railroad Corporation (ARRC) and Fairbanks North Star Borough (FNSB) desire to optimize the alignment of the Alaska Railroad within the Fairbanks-North Pole area to improve safety, customer response, and minimize transportation conflicts within the adjacent communities. ARRC and FNSB agree to commence defining a new rail corridor from the west side of Fairbanks near Sheep Creek to the east side of North Pole near Moose Creek. This effort is hereby named the Fairbanks – North Pole Rail Realignment (F-NPR). Additionally, ARRC and FNSB will pursue a study to determine possible passenger transit services for the communities along the route.

OVERVIEW

Several major engineering studies have thoroughly investigated alternatives for rail realignment through the Fairbanks-North Pole area. One such segment, commonly known as the Ft. Wainwright Bypass, has been approved to provide Independent Utility and is proceeding with Department of Defense funding. It should be considered an interim route around Ft. Wainwright until such time as the F-NPR is completed.

The overall size and cost of the F-NPR is considerable and will almost certainly require that engineering, funding and construction be accomplished in phases, although these phases would be worked as simultaneously as possible. In recognition of the need for project clarity and considering that "phases" were used in previous studies over years past, a re-naming of proposed F-NPR segments is in order. The Richardson Highway Mile Post 9-North Pole project is clearly the least complex from both a financial and engineering point of view, and shall be called **Phase 1**. The safety benefits resulting from the Richardson Highway Mile Post 9 to North Pole phase are very substantial. Public transit is a distinct possibility for Phase 1. The NEPA process for Phase 1 can be accomplished expediently by relying on the engineering effort and environmental studies conducted to date. Securing independent utility in order to set the scope of study for NEPA looks to be a possible strategy for proceeding with Phase 1 and if determined to be viable will be supported by the FNSB.

ARRC will continue the alternative analysis engineering study for the area from Richardson Highway Mile Post 3 to Richardson Highway Mile Post 9 (**Phase 2**) and for the remaining realignment segment west of Phase 2 past the Chena River (**Phase 3**). Phase 1 should be first priority among the three phases.

Phase 1 Considerations

The existing Tanana River Levee provides a feasible realignment corridor for the railroad that the partners believe would improve safety, minimize traffic conflicts and optimize freight/transit through the area. The Tanana River Levee was constructed by the US Army Corps of Engineers (COE) and is now the responsibility of the FNSB. As part of Phase 1 the FNSB and the ARRC will develop a no-fee "exclusive use easement" right of way and work cooperatively with permitting authorities to ensure use of the area on or near the levee as a rail corridor through a right-of-way agreement. Maintaining

the structural integrity of the rail/levee combination is essential, is in the vital interest of all parties, and must not be compromised. The addition of a railroad on or near the levee could also be used to improve the structural integrity of the levee. As the railroad is realigned to the levee, with the approval of the COE where necessary, the ARRC could assume the FNSB's responsibility for maintenance of the levee in accordance with the COE agreements.

Once the railroad and engineering design for the levee commences, the ARRC and FNSB will seek public input and identify opportunities to enhance recreational trails. The FNSB has a designated recreational trail in the levee area that is largely undeveloped and its upgrade could be an integral part of the project. ARRC would provide access to the river-side of the levee where appropriate. ARRC and FNSB will cooperate to mitigate personal and vehicle access issues arising from the new railroad location. Access is expected to be approved for certain designated locations and will generally coincide with section lines and/or major roadway alignments. FNSB will support ARRC efforts to obtain required Federal approvals, such as "4(f)", which addresses impacts to recreational trails.

Any railroad right-of-way to be completely vacated by F-NPR will trigger statutory evaluation for possible reversion, beginning with North Pole in Phase 1.

Phase 2 and Phase 3 Considerations

As the ARRC progresses on the design and construction of Phase 1, efforts will turn to the west. The FNSB and the ARRC will aggressively pursue funding for planning and design of Phases 2 and 3 of the F-NPR.

This MOU demonstrates that the long term goal of both parties is to move rail traffic out of the core of the community and relocate it south of town. The parties acknowledge that while a "no build" option will be considered under every phase, one purpose of this MOU is to articulate the parties' agreement that routes south of Fairbanks are preferred solutions over increasing speeds or elevating rail traffic through the Trainor Gate –New Steese – Old Steese areas of town.

As each phase of railroad relocation develops, the ARRC and the FNSB can draw up further MOU's or right of way agreements as necessary to lock-in specific details for the subsequent project phases.

For the
ALASKA RAILROAD CORPORATION

Patrick K Gamble
President & Chief Executive Officer

For the
FAIRBANKS NORTH STAR BOROUGH

Jim Whitaker
Mayor

APPENDIX 6:

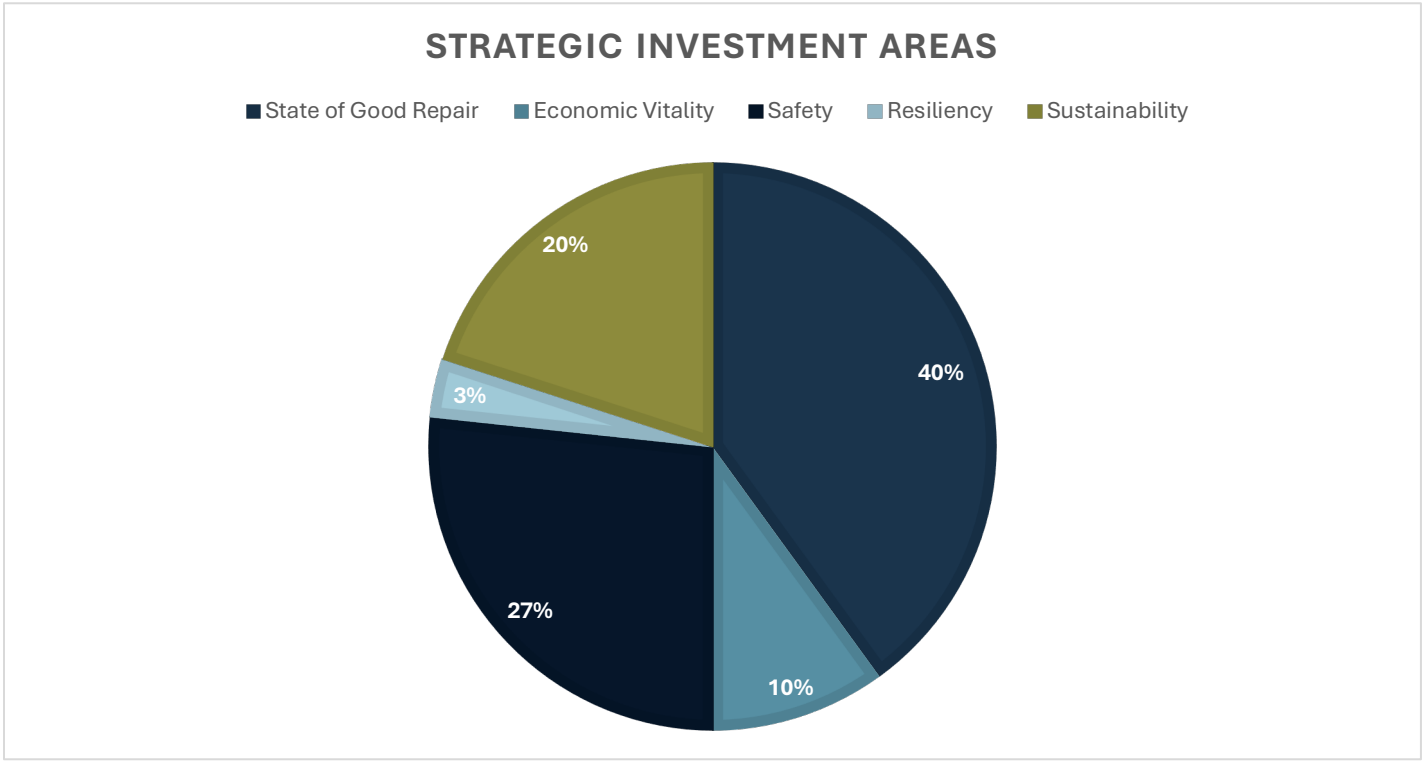
Stakeholder Identified High Interest Needs and the Associated Strategic Investment Areas

The stakeholder identified high interest needs have been included along with the 2024 IATP goals that are associated as well as categorized based on the following:

- **Maintenance and Operations: H**igh interest needs that pertain to promoting, prioritizing, and supporting funding for maintenance and operations, preventative maintenance activities, and maintaining a state of good repair for bridges and culverts in the Interior Region.
- **Safety and Rural Community Support:** High interest needs that pertain to promoting, prioritizing, and supporting safety and providing technical assistance to rural communities.
- **Advancement in Mobility and Infrastructure:** High interest needs that pertain to promoting, prioritizing, and supporting the advancement and modernization of various transportation facilities that facilitate the movement of people and freight.
- **Advancement in Access:** High interest needs that pertain to promoting increased access to transportation facilities especially those that provide opportunities for winter, recreation, and subsistence access.
- **Robust Active Transportation:** High interest needs that pertain to promoting, prioritizing, and supporting a robust active transportation network by building new facilities and connections and maintaining existing facilities.

The following tables are similar to those contained in the IATP Update, however, in addition to the corresponding goals identified these tables also include the identification of the corresponding DOT&PF Commissioner Strategic Investment Areas, State of Good Repair, Economic Vitality, Safety, Resiliency, and Sustainability.

Ultimately with the identification of these strategic investment areas, the majority of the stakeholder identified high interest needs are categorized as State of Good Repair (12), followed by Safety (8), Sustainability (6), Economic Vitality (3), and Resiliency (1). These numbers do not account for the needs that have more than one strategic investment area identified, rather it considers only the overarching strategic investment area associated. The following figure visualizes how these strategic investment areas are distributed across the 30 high interest needs identified.



Sub-Region	High Interest Need	Description	Associated IATP Goal(s)	Associated DOT&PF Commissioner Strategic Investment Area(s)
Region Wide	Maintenance and Operations Funding	High interest in identifying ways to increase funding for maintenance and operations across all transportation modes.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair
Region Wide	Waysides/Roadside Amenities	High interest in identifying consistent wayside typology, level of service, and maintenance needs across the IATP region in support of statewide efforts. Interest in collaboration with Federal Land Managers.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair Safety
Region Wide	Pavement Preservation	High interest in pavement preservation projects, specifically on the following roadways: • Alaska Highway • Taylor Highway • Richardson Highway • Parks Highway • Nabesna and McCarthy Roads	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair
Copper River	Nabesna Road Culvert Improvements	High interest in culvert improvements on Nabesna Road to assist in the mitigation of washouts.	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair Resiliency
Copper River	McCarthy Road Drainage Improvements	High interest in drainage and roadway surface improvements on McCarthy Road.	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair Resiliency
Denali	Ghiglione Bridge Replacement, Denali Park Road	High interest in the replacement of Ghiglione Bridge at Mile Post (MP) 42 of the Denali Park Road. Project includes the elimination of the existing bridge and installation of a new bridge upstream in a manner that will remain consistent with the cultural landscape.	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair Resiliency
Denali	Pretty Rocks Slide Bridge, Denali Park Road MP44/ Polychrome Area Improvements	High interest in an approximately 475-foot-long bridge to span the active Pretty Rocks Landslide. A combination of earthwork, horizontal drains, and a possible cut slope side retaining wall will likely be required to address the Perlite Landslide on the east side of the Pretty Rocks Landslide.	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement	State of Good Repair Resiliency

Sub-Region	High Interest Need	Description	Associated IATP Goal(s)	Associated DOT&PF Commissioner Strategic Investment Area(s)
Region Wide	Rural Community Winter Trails and Ice Roads	High interest in the continued promotion and support of community winter trails and ice roads using Community Winter Trails Program and Safe Ice Roads for Alaska. Explore opportunities to support rural communities through the application and budgeting process.	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility, Intermodal Connectivity	Economic Vitality
Region Wide	Backcountry Airstrip Work Group	High interest in reviving the Backcountry Airstrip Work Group responsible for identifying issues impacting backcountry airstrips and helping to guide future preservation decisions.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	State of Good Repair
Region Wide	Northern Region Rural Community Dust Control	High interest in supporting projects that provide dust control measures to village communities.	Health, Safety, and Security	Economic Vitality Resiliency Sustainability
Multiple	Healy Canyon Area	High interest in continuing to support investments in the Healy Canyon area that allow for a safe and resilient transportation system. Includes the Denali and Middle Yukon/Fairbanks Sub-Regions	Health, Safety, and Security, Accessibility and Mobility, Intermodal Connectivity	Safety Economic Vitality Sustainability
Copper River	McCarthy Road Kotsina Bluffs Realignment	High interest in realignment of McCarthy Road at Kotsina Bluffs	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement Intermodal Connectivity	Safety State of Good Repair
Copper River	Richardson Highway Safety Improvements	High interest in improvements on the Richardson Highway identified in the Richardson Highway PELS, improve the existing infrastructure, and increase safety	Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	Safety
Denali	Denali Highway Winter Trail Safety	High interest in projects, programs, and initiatives to promote winter trail safety on the Denali Highway, such as “Light Up the Lead Dogs”.	Health, Safety, and Security, Accessibility and Mobility	Safety
Upper Tanana	Alaska Highway Safety	High interest in highway and safety improvements on the Alaska Highway, including the addition and upgrade of passing lanes where applicable.	Health, Safety, and Security, Accessibility and Mobility Preservation and Enhancement	Safety

Sub-Region	High Interest Need	Description	Associated IATP Goal(s)	Associated DOT&PF Commissioner Strategic Investment Area(s)
Region Wide	Aviation Lighting and Infrastructure	High interest in projects that include upgrading the lighting systems, Automated Weather Observing System, and/or weather cameras at various airports within the Northern Region	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	State of Good Repair
Region Wide	Use of Significant Planning Documents	High interest in referring to and implementing projects and recommendations identified in significant planning documents, including but not limited to: Tribal Transportation Plans, Upper Tanana Airport Planning Study, Cantwell to Healy Parks Highway Mile Post (MP) 203-259 Planning and Environmental Linkages (PEL) Study, Richardson Highway MP 206-233 PEL, Northwest Alaska Transportation Plan	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility, Preservation and Enhancement Intermodal Connectivity	Resiliency
Multiple	Aviation Facility Investment	High interest in investments at the following airports: **Nenana Airport** – Includes needs identified in the Nenana Airport Layout Plan, pavement maintenance on taxiways and apron, new Snow Removal Equipment Building and equipment, improved signage, construction of partial parallel taxiway at runway end 22R, water/sewer/C St utilities extension, and the construction of helicopter parking, among others. See the final Nenana Airport Layout Plan for all identified projects. **Gulkana Airport** – Includes needs identified for funding in the AASP such as pavement markings, crack sealing and replacement of snow removal equipment. Additional identified needs, not programed for funding, include construction of new apron, installation of Continuously Operating Reference Stations, toilet facilities, and the construction of tie-downs13	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	Safety State of Good Repair Resiliency Sustainability
Multiple	Waterway Facility Investment	High interest in projects that support waterway facility improvements and investments relating to improved movement of freight. Includes the following sub-regions: Denali, Middle Yukon/Fairbanks, Upper Tanana, and Yukon Flats.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	Safety Economic Vitality State of Good Repair
Multiple	Railroad Support and Investments	High interest in continued support of the ARRC and promotion of interagency collaboration in the pursuit of modernizing the railroad in Alaska. Includes the following sub-regions: Denali, Middle Yukon/Fairbanks, and Yukon Flats.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	Safety Economic Vitality State of Good Repair
Denali	Denali Area Airport Planning Study (DAAPS)	High interest in pursuing recommendations set forth by the Denali Area Airport Planning Study (DAAPS). DAAPS will assess the need for a regional airport, identify other airport improvement needs, and provide recommendations for development. The final DAAPS is scheduled to be complete winter 2025/26.	Economic Vitality, Accessibility and Mobility, Preservation and Enhancement, Intermodal Connectivity	State of Good Repair
Copper River	McCarthy Road Right of Way Corrections	High interest in conducting rights of way corrections on McCarthy Road	Accessibility and Mobility Preservation and Enhancement	State of Good Repair

Sub-Region	High Interest Need	Description	Associated IATP Goal(s)	Associated DOT&PF Commissioner Strategic Investment Area(s)
Denali	Recreational Access to the Nenana River	High interest in promoting safe and meaningful usage of the Nenana River with additional recreational access.	Economic Vitality, Accessibility and Mobility	Sustainability
Upper Tanana	Healy Lake Ice Road	High interest in the continued investment of the Healy Lake ice road providing the community of Healy Lake affordable year-round access to goods and the ability to access larger communities in the area for work, social events, and medical appointments.	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	Economic Vitality

Sub-Region	High Interest Need	Description	Associated IATP Goal(s)	Associated DOT&PF Commissioner Strategic Investment Area(s)
Denali	Continuous Separated Path Through Denali Borough	High interest in projects that will link various parts of the Denali Borough by separated path. This includes the following separated path projects identified from the Cantwell to Healy – Parks Highway Mile Post (MP) 203-259 PEL Study. • Nenana River Pedestrian Bridge at McKinley Village • Parks Highway Cantwell to Carlo Creek Separated Path • Parks Highway Crabbies Crossing to Denali Park Entrance Separated Path • Denali Area Transit/Active Transportation Initiative (Phase One)	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	Sustainability
Denali	Nenana Canyon to McKinley Village Bike Trail/Nenana River Trail	High interest in the construction of a bicycle trail along the Parks Highway from the Nenana Canyon Trail to the McKinley Village area, approximately six miles.	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility, Intermodal Connectivity	Sustainability
Copper River	Kenny Lake Bike Path Extension	High interest in extending the Kenny Lake Bike Path from its terminus at Kenny Lake School, MP 4 Edgerton Highway to the Richardson Highway, MP 0. Community desires bike path to run towards the general store.	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	Sustainability
Middle Yukon/ Fairbanks	Salcha Area Pedestrian Path (North Pole to Salcha)	High interest in the construction of a Salcha area pedestrian path with the intention of connecting the communities of North Pole and Salcha.	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	Sustainability
Upper Tanana	Delta to Fort Greely Bike Path	High interest in the construction of a bike/pedestrian path from the Alaska/ Richardson Highway intersection to Fort Greely	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	Sustainability
Upper Tanana	Tok MP 1314 – 1326 Existing Bike Path Rehabilitation	High interest in rehabilitating the existing bike path from Tok MP 1314 to Tanacross MP 1326	Economic Vitality, Health, Safety, and Security, Accessibility and Mobility	State of Good Repair