INTERIOR ALASKA
Transportation Plan

TECHNICAL MEMORANDUM 5

Population Projections and Economic Forecasts

January 2024

TABLE OF CONTENTS

FIGURES

TABLES

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
DOL&WD	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).

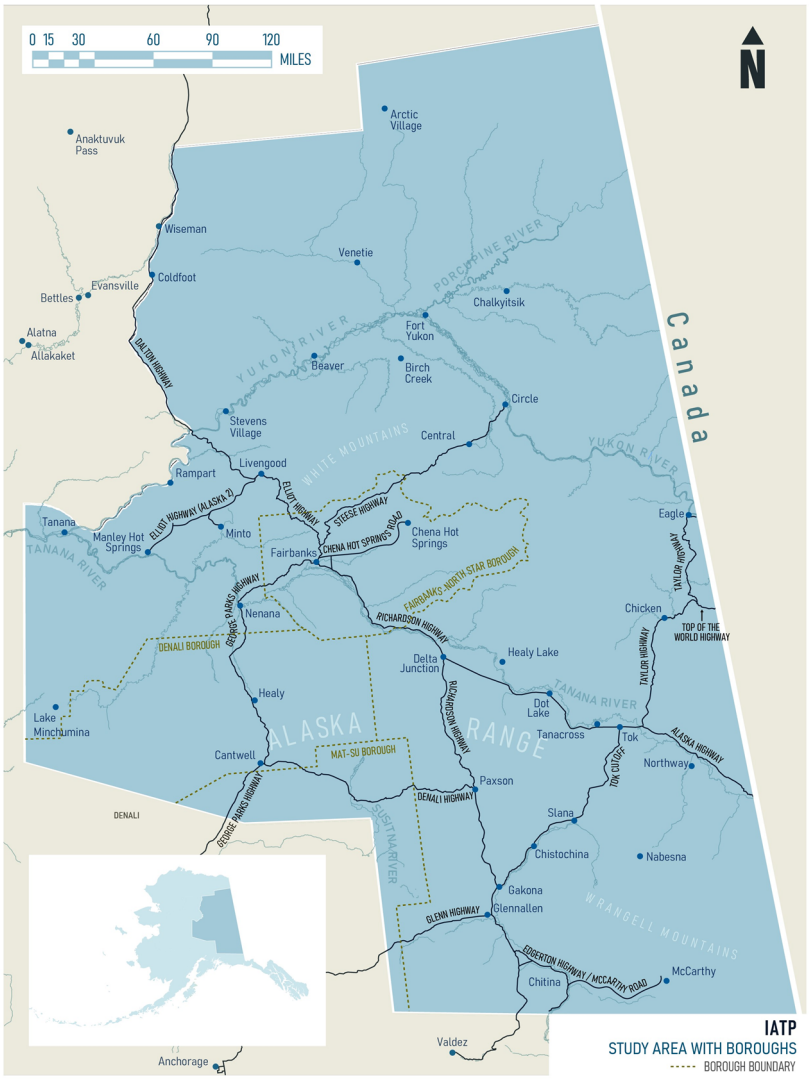


Figure 1: IATP Area

Population information provided by the Alaska Department of Labor and Workforce Development (DOL&WD) 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, DOL&WD 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 DOL&WD 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	DOL&WD
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	DOL&WD
Unemployment	US Census ACS five-year estimates

3.0 METHODS

3.1 Population Projections

Borough and census area population projections published by DOL&WD 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 DOL&WD 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, DOL&WD provides low-, medium-, and high population projections. The DOL&WD 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 DOL&WD.[1]

Population projections for areas smaller than borough/census areas are based on DOL&WD community-level population data (2012 to 2022) and DOL&WD regional projections (2021 to 2050). These base projections (as with the DOL&WD 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 DOL&WD 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 DOL&WD 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 DOL&WD 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).
- 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 DOL&WD's regional projection value for the region.

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

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 = DOL&WD community population value for the base period Year1 through Year n+1
   n = number of annual change values for the base period

2. Add the AAC value to the 2022 DOL&WD 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 DOL&WD 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 = DOL&WD 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 DOL&WD population value and to each subsequent year to generate the population projection values.
   *population projection value = B*AAP^n*

   Where:

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

[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.*

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 = DOL&WD 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 DOL&WD 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 DOL&WD)

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

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 DOL&WD 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 DOL&WD 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 DOL&WD'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 DOL&WD 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 region. 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 DOL&WD 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 project 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 projects (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 DOL&WD, 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. **K-135 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] 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.

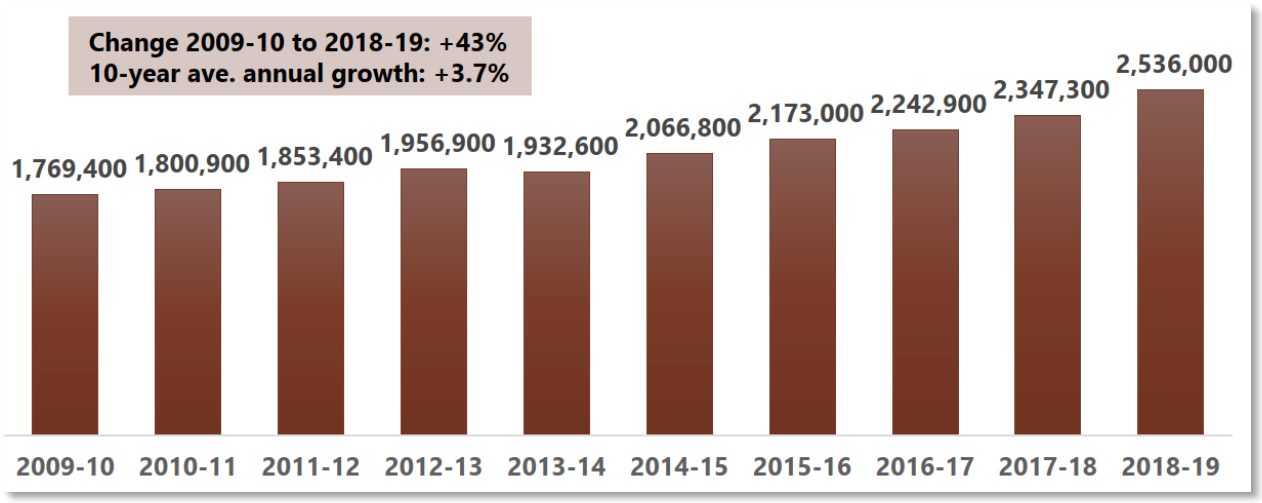
3.3 Visitor Industry

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 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, 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



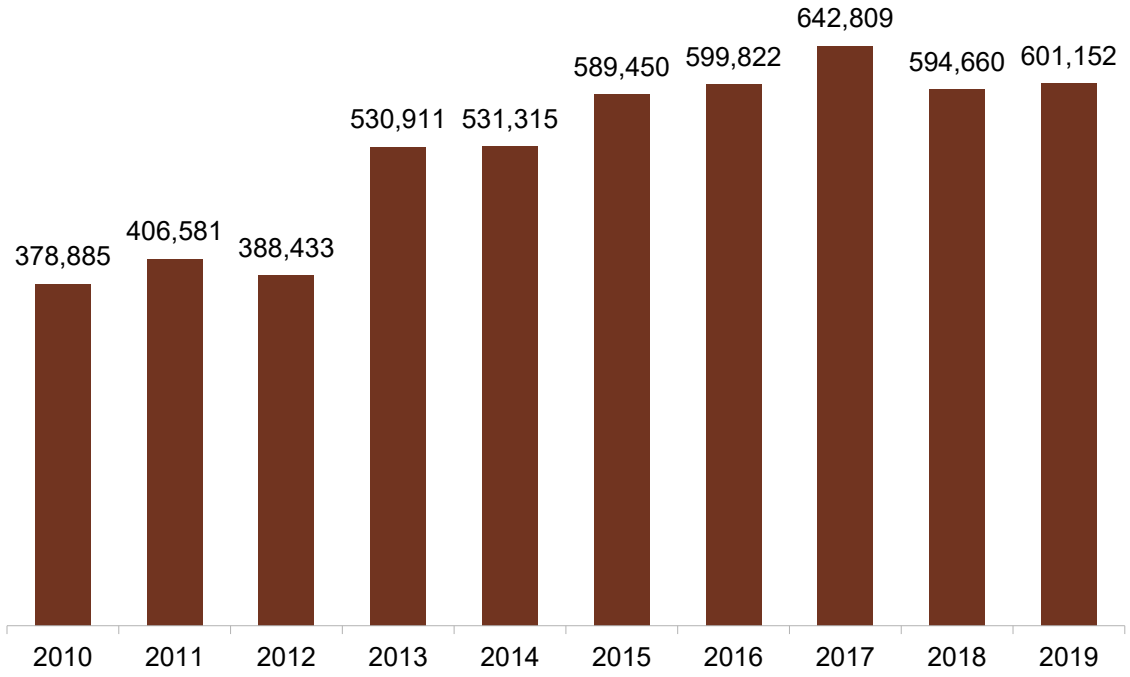
Source: Alaska Visitor Volume Report. June 2020

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 DOL&WD 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 region. Definitions of the base population projections and low, medium, and high forecast scenarios are provided below.

The economic forecasts indicate 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 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 AND 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 regions in the IATP area will require review of key information developed by regional planning groups. A brief outline of planning groups in the IATP area and research sources and considerations for each region is provided below.

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 a 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 DOL&WD population projections for the base population in FNSB.

2. **Copper River Census Area/Copper Valley Regional Planning Organization**

   As a DOT&PF regional planning organization, Copper Valley Development Association (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.

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.

4. **Southeast Fairbanks Census Area and Yukon-Koyukuk Census Area**

   Dena' Nena' Henash (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*.