Anchorage Comprehensive Economic Development Strategy

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PORT of ALASKA

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Acronyms

AIAS - Alaska International Airport System
AIDEA - Alaska Industrial Development and Export Authority
AEDC - Anchorage Economic Development Corporation
APU - Alaska Pacific University
AVTEC - Alaska Vocational Technical Center
BLM – Bureau of Land Management
CDC - Center for Disease Control
CEDS - Comprehensive Economic Development Strategy
DCCEC - Department of Commerce, Community, and Economic Development
DED - Department of Economic Development
DHHS - Department of Health and Human Services
DNR – Department of Natural Resources
DOT&PF - Department of Transportation & Public Facilities
EDA - Economic Development Administration
EPA - Environmental Protection Agency
FAA – Federal Aviation Administration
FEMA - Federal Emergency Management Agency
GDP - Gross Domestic Product
HUD - Housing and Urban Development
ISER - Institute of Social and Economic Research
JBER - Joint-Base Elmendorf Richardson
KCC - King Career Center
LUP - Land Use Plan
MEP - Manufacturing Extension Partnership
MOA - Municipality of Anchorage
NATIVE - Native American Tourism and Improving Visitor Experience
R&D - Research and Development
SBA - Small Business Administration
SWOT - Strengths Weaknesses Opportunities Threats
UAA - University of Alaska Anchorage
WIOA - Workforce Innovation and Opportunity Act

Summary Background

A robust and diverse economy in Anchorage is essential to the well-being and quality of life of our community's residents. Without a healthy and growing economic base, employment opportunities will diminish. Anchorage's economic vitality is also essential to the State of Alaska, because Anchorage accounts for more than 40% of the state's population and employment. The recent volatility in global oil prices, the State's fiscal uncertainty and Alaska's recession reinforces the importance of strategic planning for economic development at the local level.

The Public Works and Economic Development Act of 1965 requires an approved Comprehensive Economic Development Strategy (CEDS) in order for cities to apply for investment assistance under the U.S. Department of Commerce's Economic Development Administration's (EDA) Public Works or Economic Adjustment Assistance Programs. The spirit of a CEDS is one of continuous community involvement and cooperation from the private and public sectors in order to understand and confront economic challenges with a series of feasible, prioritized and accountable projects that will serve as a benchmark for economic and community development in Anchorage over a 5-year period. Key is encouraging a more competitive and diversified economic base by: 1) promoting economic activity through improved and expanded public infrastructure; 2) enhancing job creation through innovation, productivity and entrepreneurship; 3) increasing private sector capital investment; and 4) retaining, attracting and expanding private sector businesses. The CEDS also identifies performance measures to evaluate progress in meeting goals.

The CEDS planning process seeks to avoid duplication of effort and achieve meaningful, long-lasting impacts through the intentional collaboration of federal, state, tribal, local municipal and local economic development entities. The process seeks to identify a community's unique advantages and analyze weaknesses of the local market. Most importantly, a CEDS should identify opportunities that could diversify and strengthen the local economy. Integrated economic development planning provides the flexibility to adapt to changing national and global economic conditions. This process will result in the identification of key projects that once undertaken will result in economic growth of the region.

CEDS Development Process

The mission of this CEDS is to create a vibrant, resilient and inclusive economy in order to build a more self-sufficient future for Anchorage. The stakeholders of this strategy include the Municipality of Anchorage, its citizens and the business community. This strategy serves as an aligned, achievable, actionable game plan to incite effective economic growth.

When reviewing this document, it is imperative to note it is a strategy, not a plan. A plan is a concrete set of specific actions leading to a definitive outcome. A strategy, however, is a set of ideas used to shape the plans that will accomplish a specific goal. It is very flexible and open for adaptation and change when needed. By creating the overarching direction of economic development in Anchorage, this strategy will help shape the details of future plans.

The development of this Comprehensive Economic Development Strategy (CEDS) was a cooperative effort between the Municipality of Anchorage (MOA) and the Anchorage Economic Development Corporation (AEDC). Funding for the project was provided by the Municipality of Anchorage and the Economic Development Administration (EDA).

To ensure broad stakeholder input and engagement and reflect regional interests, a steering committee provided input throughout the CEDS development process. Steering committee members were selected as representatives from their respective industries for their unique perspectives and leadership roles in the community.

Steering Committee

Grace Greene, Tote Maritime

Steve Ribuffo, Port of Alaska

Jim Jager, Port of Alaska

Suzanne Taylor, WHPacific

Kirk Rose, Anchorage Community Land Trust

Penny Gage, State of Alaska

Nolan Klouda, University of Alaska Anchorage

Pat Shier, University of Alaska Anchorage

Katherine Jernstrom, The Boardroom

Chris Schutte, Municipality of Anchorage

Curtis McQueen, Eklutna Inc.

Julie Saupe, Visit Anchorage

Carol Gore, Cook Inlet Housing Authority

Sezy Gerow-Hanson, Cook Inlet Housing Authority

Sophie Minich, CIRI Inc.

Peter Pounds, GCI

Lee Thibert, Chugach Electric Association

Allen Hippler, Northrim Bank

Tom Hubble, DOT&PF

Jamie Boring, Anchorage Downtown Partnership

David Knapp, BP Alaska

The fundamental purpose of this strategy document is to provide direction for public and private actions to stimulate economic development in the MOA. At a basic level, the goals of the strategy are to create jobs, income and economic stability. The strategy also aims to generate municipal revenue to fund facilities and services to maintain and enhance our quality of life. This CEDS will establish goals, objectives and strategies to provide the foundation for an implementation or action plan, simultaneously establishing investment priorities to guide potential funders regarding desired investment. This CEDS will also serve as a communications piece to attract private investment and foster job creation.

In order to leverage strengths and opportunities and mitigate weaknesses and threats, effective and collaborative leadership in economic development will be a necessary component of this strategy. Integral to the plan's success is also the support of the Anchorage community; this CEDS will seek community buy-in for each of the planks to ensure the plan is meeting the needs of its constituents. Business development is at the core of economic growth and the implementation of business-friendly policies and initiatives will be a priority. The plan will include cross-cutting initiatives geared towards the expansion of workforce and entrepreneur development, as well as advancement of research capabilities. It is imperative to the success and vitality of this strategy that every component is reflective of Anchorage's character and culture.

The economic development generated through the CEDS project combined with the community development achieved through the Live, Work, Play initiatives will create overarching environmental, economic, and cultural resiliency.

The Anchorage CEDS complements AEDC's Live.Work. Play. initiative, which has the goal of making Anchorage the number one city in which to live, work and play by 2025. Anchorage's CEDS also complements the State's CEDS and draws upon multiple other long-range plans developed by various agencies and non-profit community organizations.

Alignment with Existing Plans

The Anchorage Bowl Comprehensive Plan (often referred to as the "Anchorage 2020 Plan"), adopted by the Anchorage Assembly on Feb. 20, 2001 and amended on Sept. 10, 2002, serves as the blueprint for development in the Anchorage Bowl during the 20 years following its adoption

On September 26, 2017, the Anchorage Assembly approved an update to the Anchorage 2020 Plan -- the Anchorage 2040 Land Use Plan (2040 LUP). The 2040 LUP supplements and updates Anchorage 2020 and incorporates the adopted neighborhood and district plans, public facility plans and recent analyses regarding population, housing, commercial and industrial needs over the next 25 years. The 2040 LUP features a land use plan map showing where future land uses may occur within the Anchorage Bowl to accommodate anticipated growth. It also includes recommended strategies to carry out the plan and manage growth.

The Anchorage CEDS will work in tandem with these existing plans by building upon the following goals abridged from Anchorage 2020 and other adopted elements of the Comprehensive Plan:

Future Growth: Take a forward-looking approach to community growth and redevelopment by pursuing innovative ways to accommodate and encourage growth in population, housing and employment.

Building Community: Build on existing commercial districts and neighborhood strengths through reinvestment.

Diverse, Healthy Economy: Capitalize on Anchorage's unique strengths and its regional, statewide and global position, as well as its key economic sectors and well-paying jobs.

Economic Viability with Placemaking: Strive to create a built environment comprising great places, streets and spaces that together generate a positive city image, support long-term economic viability, attract new residents and workforce talent and promote affordable development.

Compact Development: Use infill and redevelopment with a more compact land use pattern to support efficient use of land, lower the cost of public services and utilities, improve performance of transportation networks and preserve open space.

Strong, Resilient Community: Manage future growth and development to minimize risks to life safety and property from natural hazards and disasters.

Balance of Commercial and Industrial Land: Preserve a balanced supply of commercial and industrial land compatible with surrounding uses and accessible by transportation networks.

Housing: Provide a diverse supply of quality housing in safe, livable neighborhoods to meet the needs and preferences of city residents of all income levels.

Compatible Development: Promote development that respects the scale and character of existing neighborhoods, contributes to neighborhoods of lasting value and vitality and is supported by investment in local amenities and services.

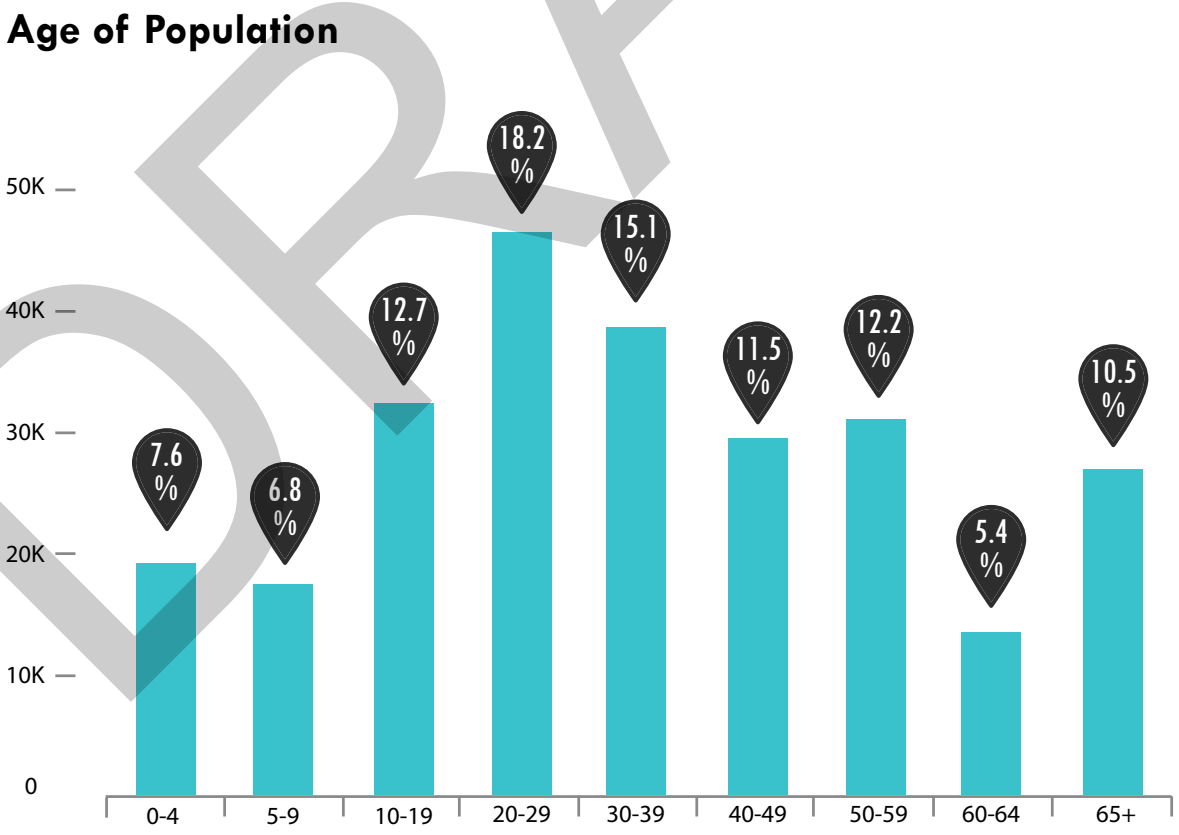
Community Facilities: Provide a well-planned mix of public, utility and institutional facilities coordinated with private-sector development to meet the health, educational, civic, cultural, recreational, utility, governmental and public safety needs of all citizens, businesses and neighborhoods.

Mobility and Access: Develop an efficient, land use-based transportation system to move people and goods safely with minimal impact on surrounding uses and the community, and maximize choices among various modes of travel including walking, bicycling, and public transit.

Walkable Community: Develop a community allowing for living, working, shopping and recreation within convenient travel distances, in a pedestrian-oriented development pattern supporting healthy, active lifestyles.

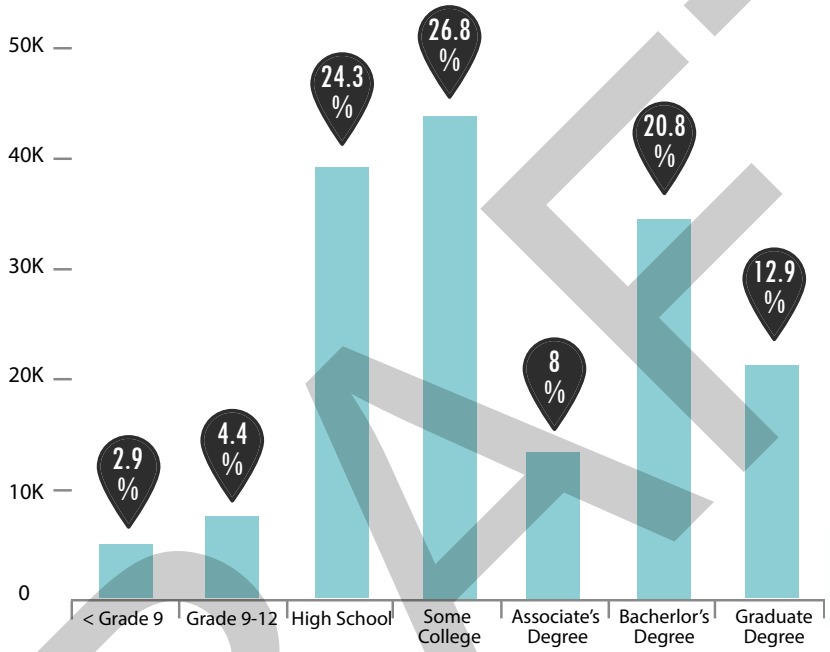
Demographics

The following demographic data and graphs were accumulated using JobsEQ and Anchorage Prospector software, which sources its data from the State of Alaska, the U.S. Census Bureau and the Bureau of Labor Statistics. The purpose of the demographic data is to provide an overview of the economic conditions within the broader Anchorage region.



Anchorage currently has a population of 299,543, with 51% male and 49% female. Between the years 2005 and 2015, Anchorage's population grew at an average rate of 0.6%, which is 0.3% lower than the state rate and 0.2% lower the than the national rate. While Anchorage's overall population change might be increasing yearly, Anchorage's net migration was –2,576 between the years 2015 and 2016. The Department of Labor projects Anchorage's population will reach 339,171 by 2045, representing a 13% increase over a 30-year period. Approximately 93% of the population over the age of 25 have a high school degree. 33% of individuals between the ages 25 and 64 have a bachelor's degree or higher.

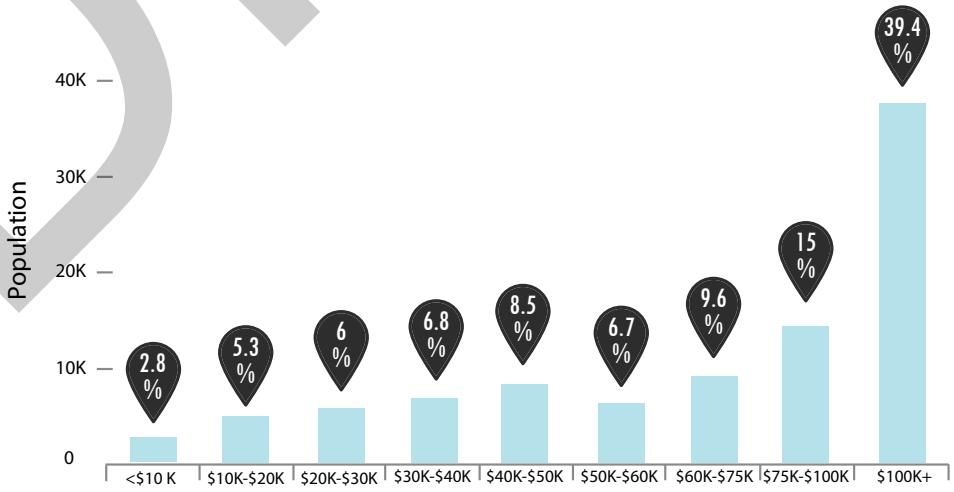
Educational Attainment



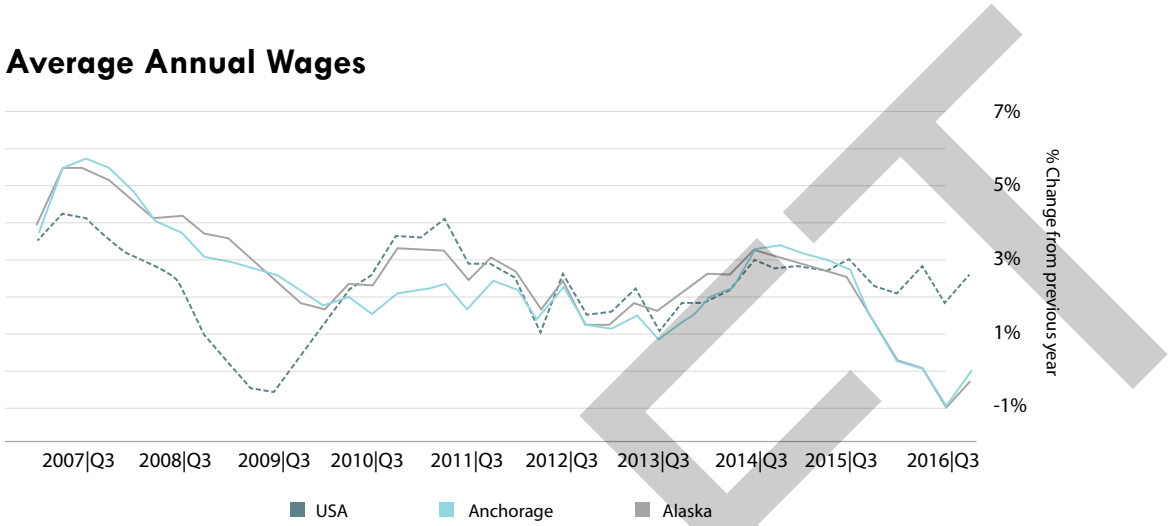
Households

The median household income is $78,326 and per capita personal income is $36,920. Despite high costs of living, the US Census Bureau's 2010 American Community Survey found Alaska has one of the lowest percentages of individuals and families living below the official federal poverty line.

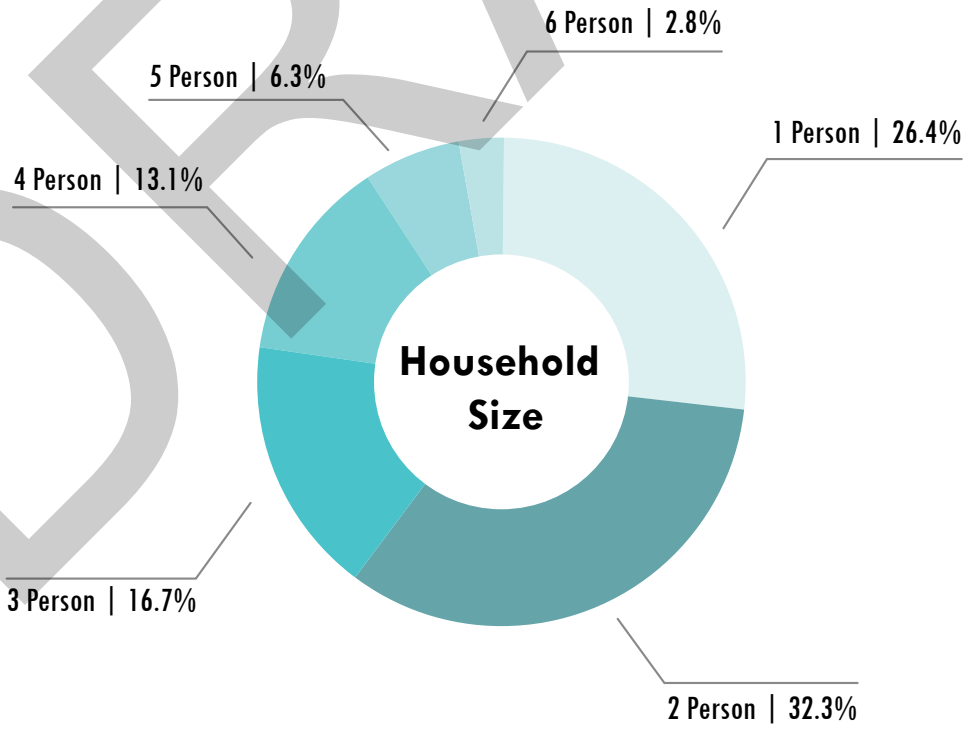
Household Income Distribution



As of 2017, the average worker in Anchorage earns an annual wage of $56,307, representing a 0% increase from the preceding year. While the national average annual wage is $53,246, it is important to note that the cost of living is 31.9% higher in Anchorage than the U.S. average.

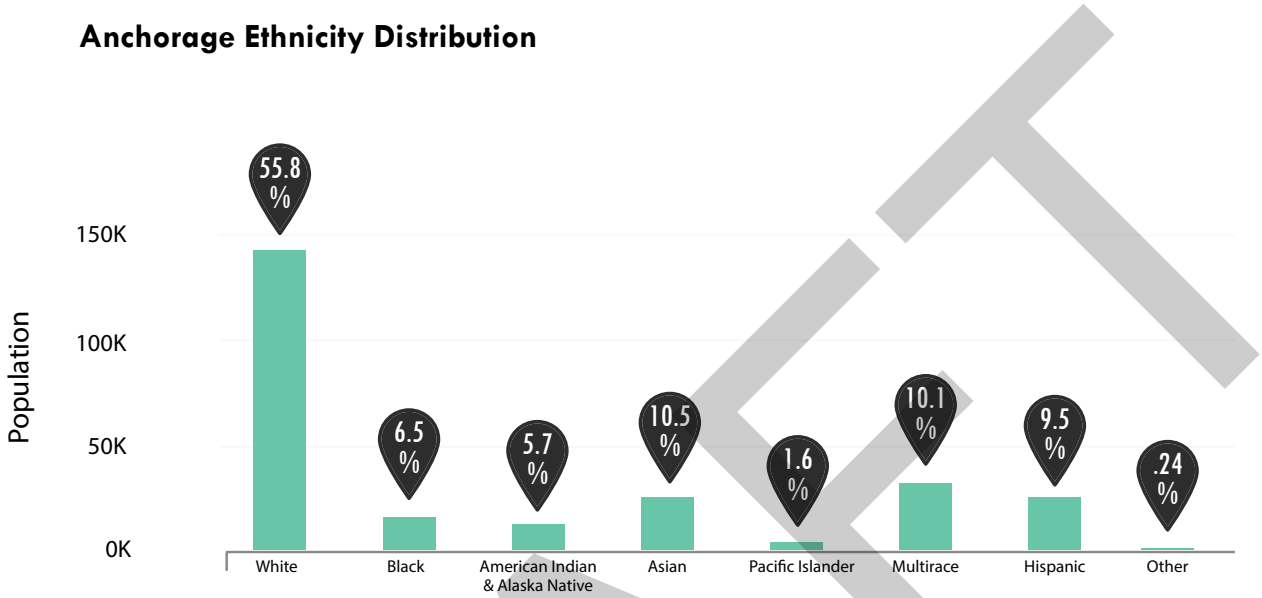


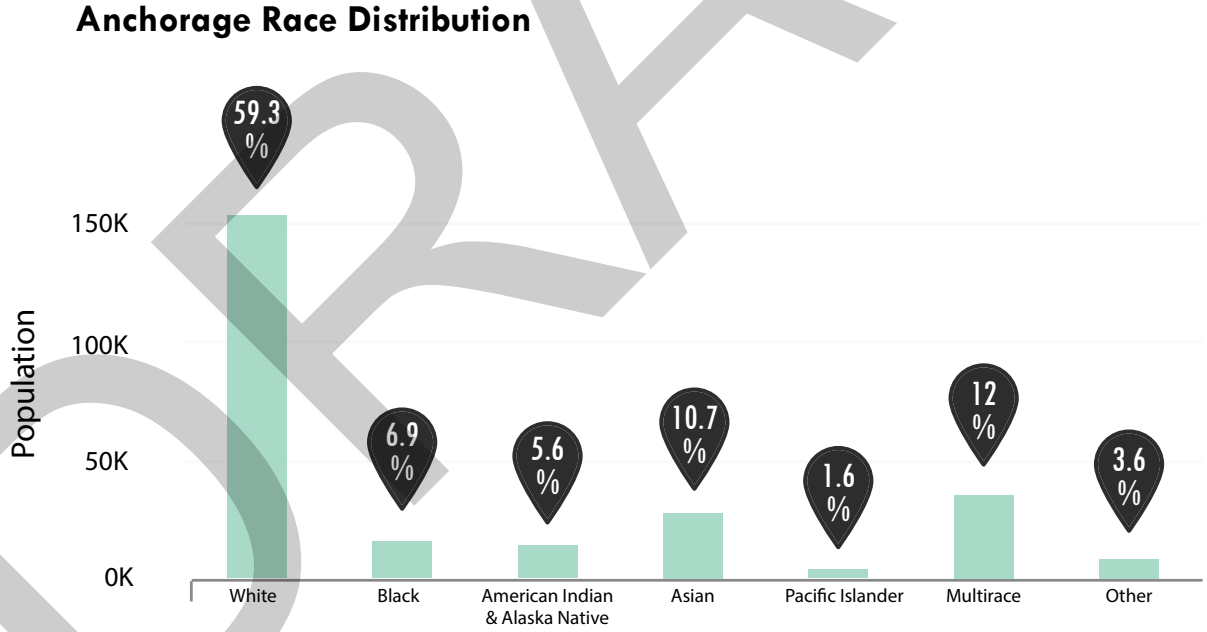
Among Anchorage households, 75% have two people or more and 65.5% are considered families. However, an increasing percentage are married couples with no children still living at home and nearly one-quarter of Anchorage households have just one person.



Race and Ethnicity

As defined by the federal Office of Management and Budget, an ethnic group is a population whose members identify with each other on the basis of common nationality or shared cultural traits, whereas race refers to the categorization of people based on physical characteristics and genetic ancestry.



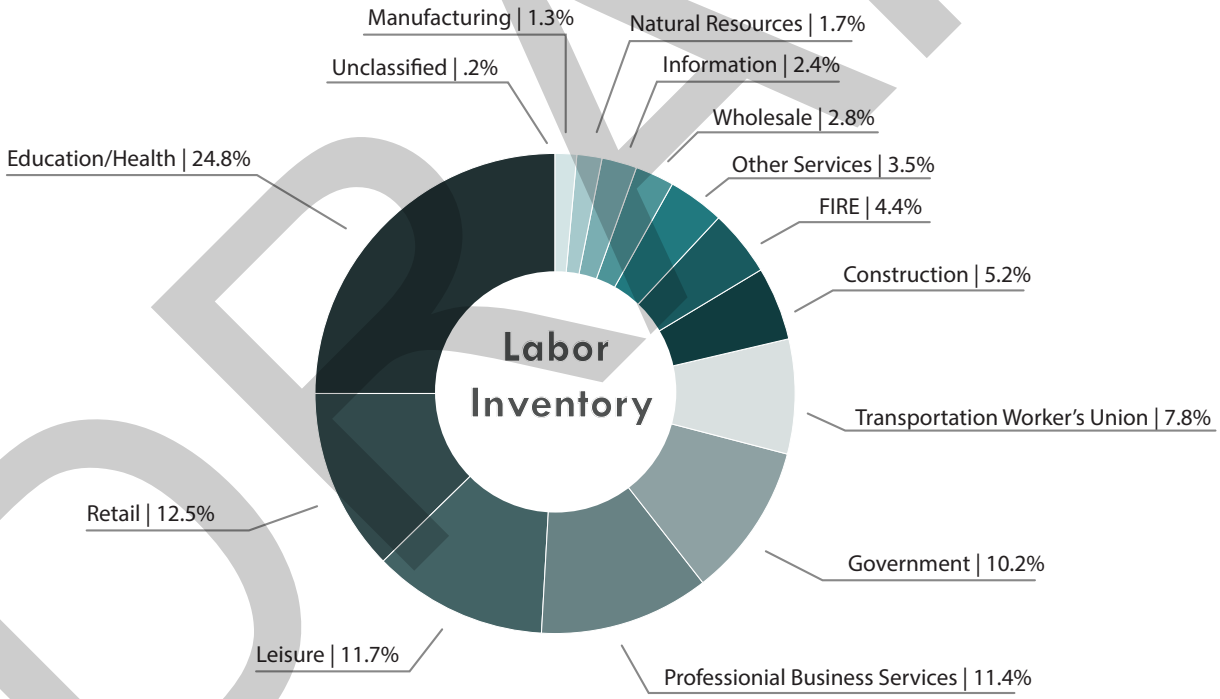


Employment

Since 1988, the Anchorage economy has gained jobs nearly every year, but job growth has now transformed into job decline. Anchorage benefits from being the headquarters to most industry and regional corporations, specifically for the state's oil industry. In addition to these private sector positions, Anchorage employs a large number of both state and federal public-sector employees. Given shifting oil prices, a resulting state budget deficit and continued declines in oil production, the Anchorage workforce is beginning to show the resulting employment losses.

Anchorage Employment 2006-2016

Anchorage's civilian labor force of 151,270 represents an 89.94% employment rate. Unemployment is at 5.6% and military employment comprises 5.14% of the population. The labor force has decreased from a high of 156,600 in 2012 to 152,800 in 2016.



The previous pie chart shows what percentage of total Anchorage employment is provided by each industry. The largest employment sector in Anchorage is Health Care and Social Assistance, which employs over 25,000 workers. The next-largest sectors are Retail Trade, employing 18,500 workers, and Public Administration, employing 15,500 workers. Sectors with the highest average wages per worker are Resource Extraction (Mining, Quarrying, Oil and Gas,) with average wages of $176,988, and Management, with average wages of $88,425. Regional sectors with the best opportunities for job growth over the next five years – those with the most moderate job losses – are Health Care and Social Assistance, Management and the Accommodation and Food Services sectors.

Percentage Change in Employment by Industry from 2010-2016

Industry/Sector	% Change in Employment from 2010-2016
Healthcare	20%
Educational and Health Services	17%
Food Services and Drinking Places	13%
Leisure and Hospitality	9%
Wholesale Trade	2%
Retail Trade	2%
Service-Providing	1%
Trade/Transportation/Utilities	1%
Total Nonfarm	0%
Manufacturing	0%
Oil & Gas	0%
Professional and Business Services	0%
Transportation/Warehouse/Utilities	-1%
Other Services	-2%
Accomodation	-3%
Mining	-4%
Local Government	-5%
State Government	-6%
Government	-7%
Information	-7%
Local Education	-7%
State Education	-7%
Federal Government	-9%
Goods Producing	-12%
Financial Activities	-17%
Construction	-17%

Between 2010 and 2016, the industries with the largest employment losses were: construction, financial activities, goods production and the federal government. Healthcare, health services, food services, and leisure and hospitality saw the largest increases in employment during that period.

Economic Clusters

Health Care and Health Services

The health care industry has been at the forefront of economic growth for 30 years and, in 2016, the industry added 600 jobs to the economy. An average of 20,000 Anchorage jobs are in the health care industry. Anchorage's ongoing shift to an older population increases the demand for healthcare services and ensures the continued growth of the industry. Nursing and residential care facilities employ 2,800 people and ambulatory health care services employ 11,000.

Leisure and Hospitality

Leisure and Hospitality remains a strong economic sector, with a projected 2% increase in tourists in 2017. One in 10 Anchorage jobs is in tourism, totaling around 18,000 jobs. In 2015, Alaska had 1.78 million visitors, the highest number ever recorded. Cruise passenger traffic also increased in 2015 after a 3% dip in 2014, while air traffic in Anchorage was up by 10%. The 2014-2015 visitor season had a $2.2 billion impact in the southcentral region.

Professional and Business Services

In 2016, the professional and business services sector employed an average of 18,900 people. The number of jobs lost in the professional services industry, roughly 1,600, was larger than any other sector due to a combination of oil losses, construction decline and a decrease in mining exploration. Consulting services, such as architects and engineers, sustained the largest losses and represent half of the professional services industry in Anchorage.[1]

Transportation

Two major shipping companies based in Anchorage reported a decrease in freight volume. In 2016, the Port of Alaska had an annual tonnage of 3,498,171 short tons, down 7.3% from 2015. The Flint Hills refinery closure led to fewer petroleum product shipments, and the lack of coal exports have caused a decline in the Alaska Railroad's freight volume as well. Quarterly freight tonnage decreased by 24.1% in 2016. Conversely, the amount of international cargo transported through Anchorage remains high. At the Ted Stevens International Airport, while cargo enplaned decreased by 1% in 2016, cargo deplaned increased by 9.3% and cargo transit increased by 7.7%.

1 Fried , N. (2017, January). Economic Forecast for 2017

Government

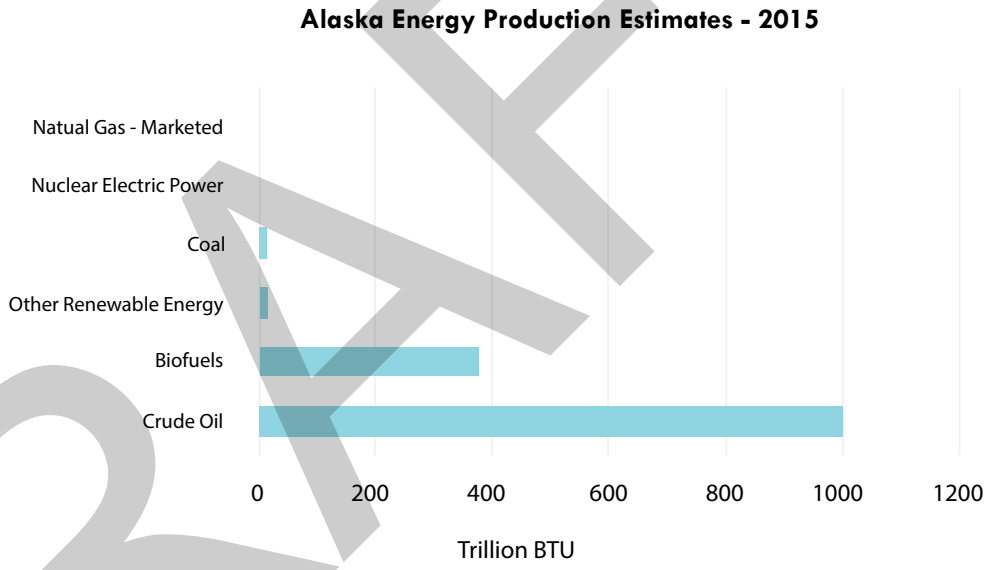
There are currently 29,100 government employees in Anchorage – 8,500 of which are federal, 10,100 of which are state, and 10,500 of which are local. The education sector accounts for 2,500, or nearly 25%, of state government jobs. 7,500 of local government jobs are in the education sector as well, accounting for over 70% of local government employment. State government employment, including the University of Alaska Anchorage, decreased by 4% in 2016. While local and federal government employment is expected to remain the same, the fiscal uncertainty within the state's operating budget will likely lead to more job losses in that sector in the coming years.[2]

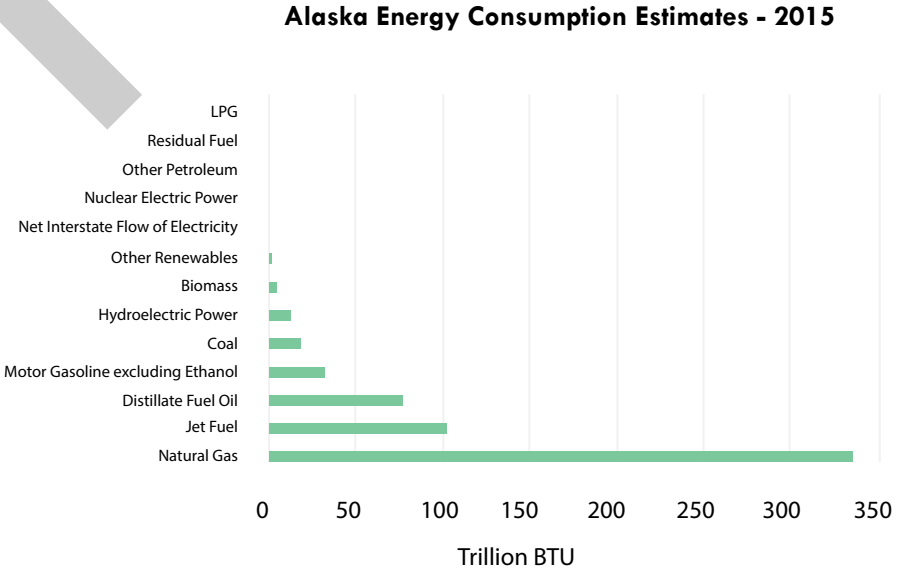
Construction

Anchorage is also headquarters for the state's construction industry. When Alaska's capital budget reached a 15-year low in 2016, Anchorage lost 900 construction jobs -- an 11% decline for the industry. Building valuation declined by 10% and the number of permits for new residential housing sunk to the lowest level in more than 25 years. Rising vacancy rates and budgetary uncertainty also hampered commercial activity.[3]

Mining, Including Oil and Gas

Most of the state's oil industry employers are headquartered in Anchorage and over 40% of the state's oil workers are from Anchorage, totaling 5,200 workers earning more than $700 million in annual wages. Job losses in this sector are expected to continue modestly over the next few years. Directly, 2,265 oil and gas employees reside in Anchorage, accounting for $409 million in wages. Anchorage's 2,025 support service employees earn $220 million in annual wages. An additional 24,050 jobs in Anchorage and $1.2 billion in annual wages are tied to the oil and gas industry. Through combined direct and indirect effects, the oil and gas industry employs 28,340 people in Anchorage and supports $2 billion in wages, which represents 17% of private





2 State of Alaska Department of Labor. (2017, September). [Monthly Employment Statistics].

3 Fried , N. (2017, January). Economic Forecast for 2017

sector jobs and 20% of private sector wages. The Anchorage-based Alaska Railroad Corporation receives $17.2 million per year for coal and gravel shipments. Several mining companies are also based in Anchorage, directly employing dozens of people and indirectly supporting the employment of professional service contractors.[4]

Seafood

While the majority of employment in the seafood industry is in Southcentral Alaska, commercial and sport fishing contribute economic activity to Anchorage. The municipality plays a critical role in surface and air logistics support for a variety of resource-driven industries, from oil and gas to mining. Seafood is no different. Anchorage is a hub for fresh seafood shipments, workers and fishery management conferences, all of which help circulate money through the regional economy. The fishery industry employs 2,200 people in Anchorage and garners $50 million through regional ports. Seafood processing is the largest manufacturing sector in Alaska and accounts for 72% of the state's manufacturing employment. The seasonality of the industry results in a reliance on nonresident workers to staff production jobs. Although nonresidents comprise 70% of the fishery workforce, the industry directly employs more workers than any private sector industry. It is the third largest basic sector job creator, following the oil-and-gas and visitor industries.[5]

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2016, nominal GDP in Anchorage contracted 5.6%, following a contraction of 2.9% in 2015. As of 2016, total GDP in Anchorage was $23,446,252,000.

4 McDowell Group. (2017, May). The Role of the Oil and Gas Industry in Alaska's Economy (Rep.).

5 McDowell Group. (2017). The Economic Value of Alaska's Seafood Industry (Rep.).

Infrastructure Assets

Infrastructure assets are the physical components of fundamental facilities and systems that ensure the city economy is able to function.

Healthcare

Anchorage has 3 large health care providers: Providence Alaska Medical Center, Alaska Regional Hospital and Alaska Native Medical Center. Providence Alaska Medical Center opened its current location in 1962 and continues to act as Anchorage's largest medical center. The hospital hosts 401 beds and received 17,322 admissions along with over 68,000 ER patients last year, generating $2 billion in revenue. Alaska Regional acts as another major health care provider in the community, with 142 beds, 550 practitioners over 1,000 employees. In 2015 the hospital generated $747 million in revenue. Alaska Native Medical Center provides comprehensive medical services to Alaska Native and American Indian people living in Alaska. The facilities contain 167 beds, and saw 57,000 ER visits and 270,000 outpatient visits while generating $410 million in revenue in 2016.

Education

Anchorage's infrastructure also includes many educational institutions. The University of Alaska Anchorage, a public university, is the largest institution, offering 22 occupational endorsements, 17 undergraduate certificates, 32 associates, 62 bachelors, 30 masters and 6 doctoral degrees, along with a technical division offering programs in aviation technology, computer and networking technology, construction, design and safety and culinary arts, hospitality and restaurant management. Established in 1954, the university serves over 20,000 students with an 11:1 faculty to student ratio and a satellite campus in Eagle River .

Alaska Pacific University, a private liberal arts college, is another key player in contributing to Anchorage's education. Established in 1957, APU serves 700 students with a 7:1 faculty to student ratio. The university offers 24 majors and the ability to obtain one-year certificates, associate, bachelor's, master's and doctoral degrees, along with post-baccalaureate certificates.

Anchorage also has several vocational training institutions. Classes and accreditations are offered for mechanics, crane and construction equipment operators, truck drivers, welders, carpenters, project managers, pipe-fitters, aircraft dispatchers, insurance coding and billing specialists, medical assistants, phlebotomy technicians and therapeutic massage therapists.

There are 12 elementary schools in Anchorage that host partial or full alternative programs, such as language immersion (Russian, Spanish, Japanese, and Chinese), open optional and back-to-basics programs. The language immersion programs continue into middle and high school. Anchorage high schools host numerous alternative programs, including an international baccalaureate program, a biomedical career academy, a school-through-the-arts program, and other such school-within-a-school programs. There are 12 fully alternative schools which offer opportunities for self-directed learning and community engagement. Eight of those schools also offer programs for non-traditional students, such as those who are pregnant or have children; are incarcerated; have cognitive difficulties; or are at risk of dropping out. There are 8 charter schools in the Anchorage School District, five of which are primary schools with emphases on German immersion, Alaska Native cultural immersion, interdisciplinary and arts-based learning, and standards-based learning. King Career Center (KCC) provides career technical and vocational education to 11th and 12th graders in the Anchorage School District. The courses prepare students for post-secondary education or entry-level positions in many career fields. KCC offers 26 career pathway programs, 19 of which are taught by industry professionals.

Transportation

Anchorage plays a critical role in surface and air logistics support for the state's baseline industries, from oil and gas to mining and seafood sectors. Virtually all industries use transportation modes in or out of Anchorage. The

Alaska International Airport System (AIAS) is an integral re-fueling stop for cargo carriers travelling between Asian producers and consumers in the contiguous United States. In addition to serving 5.4 million passengers annually, Anchorage's airport is among the top five global airports for cargo throughput. Air freight shipments are within 9.5 hours of 90% of the industrialized world.

The state's primary marine transport hub is the Port of Anchorage, an intermodal transport facility with direct connections to Alaska's marine, highway, rail, pipeline, and air cargo systems. With three cargo terminals, two petroleum terminals, a dry barge landing and 125 acres of cargo-handling infrastructure, the Port of Alaska serves 74% of the Alaskan population and handles 85% of consumer goods for the state. However, the Port currently faces severe structural disadvantages. The infrastructure has exceeded its economic and design life, and the terminals are too small to efficiently handle most modern cargo container ships. The original docks were built in the 1950s, and engineering studies show the wharf piles have lost up to 75 percent of their original thickness. The Port sits in an active seismic zone and, in its current condition is unlikely to survive another significant earthquake. Without complete renovations, the Port of Alaska will have to shut down part of its operations within a decade.[6]

Outside of air cargo operations, Alaska's road and rail connectivity to Lower 48 markets is underdeveloped and the travel distance is considerable. Seattle -- the closest large Lower 48 city -- is over 2,300 miles away by road. There is no rail line connecting Anchorage to the rest of the country. Only one highway connects the municipality to the rest of the state, Canada and the Lower 48.

The Alaska Railroad Corporation operates 450 miles of mainline railroad, connecting Whittier and Seward to Anchorage and Fairbanks. It was the first railroad authorized to transfer liquefied natural gas by the Federal Railroad Administration. It is also a vital component of the visitor industry and, due to an increase in winter tourism, has had to add additional trips between Anchorage and Fairbanks to accommodate demand. The railroad is connected to the rest of the continent by rail barge, accepting shipping containers in the Southcentral Port of Whittier for rail transport.

Energy and Utilities

Anchorage's energy sources for heating and electricity are local. Natural gas from Cook Inlet is the primary heating source for nearly all homes and businesses in Anchorage and is the primary power generation fuel for Anchorage. Power is also produced from other renewable resources such as multiple hydroelectric sites, one wind farm, landfill gas and small solar installations on various homes and businesses.

Natural gas: The Cook Inlet has 20-25 producing gas fields that provide natural gas to the region.[7] Natural gas is currently used for heating, electricity generation and industrial purposes in Anchorage, the Kenai Peninsula to the south, and the Matanuska-Susitna Valley to the north. Anchorage Municipal Light and Power (ML&P), Chugach Electric Association (Chugach) and Hilcorp share ownership of the Beluga River Unit, which is a gas accumulation located along the northwestern shore of Cook Inlet. Gas produced in the Beluga River Unit is a portion of the natural gas used for power generation in Anchorage, the balance provided through gas contracts sourced within the Cook Inlet Region.

Electricity: The majority of Anchorage's electricity is generated by local natural gas-fired, modern and efficient combined cycle gas turbines. These power plants are the 200 megawatt (MW) capacity Southcentral Power Project owned by Chugach and ML&P, ML&P's 120 MW Plant 2A and other natural gas-generating units owned by both Chugach and ML&P, according to Chugach. Electricity for the Eagle River portion of the Municipality of Anchorage is provided by Matanuska Electric Association, Inc.'s reciprocating engine gas generators at its Eklutna Generation Station (171 MW). These three utilities, plus Golden Valley Electric Association Inc., Homer Electric

6 CH2M Engineers . (2016, October 17). Anchorage Port Modernization Program Test Pile Program Report of Findings

7 Alaska Department of Natural Resources (Sept. 2015), Updated Engineering Evaluation of Remaining Cook Inlet Gas Reserves

Association, Inc. and the City of Seward Electric Department form the interconnected power grid in the Railbelt region of Alaska from Fairbanks to Homer.

Hydropower: The largest hydro power source for Anchorage is from the Bradley Lake Hydroelectric Project located northeast of Homer, with a capacity of 120 megawatts (MW) and average annual power production of 385,500 megawatt hours (MWh), according to local utilities. The project is currently being expanded by the Battle Creek Diversion Project, which will increase water flow to the existing hydro facility and is anticipated to increase energy production by about 10 percent. Other hydro facilities include the Eklutna Power Plant, located 30 miles northeast of Anchorage and with a capacity of 47 MW, and the Cooper Lake Hydroelectric Project, which has a capacity of about 20 MW and is located on the Kenai Peninsula near Cooper Landing.

Wind: Collectively, the natural gas and hydroelectric generation facilities ensure the delivery of firm power to the residents and businesses in Anchorage. These generation facilities are supplemented by non-firm renewable generation resources. The 11wind turbines operated by Fire Island Wind, LLC on Fire Island, a couple miles from Anchorage, have a capacity of 17.6 MW and generate approximately 45,000 MWh per year, according to Chugach. The facility generates most of its power during the winter months due to higher winds and colder, denser air. Community energy use is also highest in winter. There is capacity to expand the windfarm, according to Fire Island Wind.

Solar: Solar power represents a small fraction of one percent of power generation and is distributed mostly in small increments on a growing number of homes and businesses in Anchorage. The installed capacity of distributed generation solar in Chugach's service area is 0.3 MW, according to the utility. Chugach is pursuing a 0.5 MW community solar project, with construction anticipated in 2018.

In the event of a disaster, the State Emergency Operations Center has nine diesel generators ranging from 45 kW to 175 kW in stock and ready to be deployed. The Alaska Department of Transportation and the Alaska Energy Authority stock another 20 generators ranging from 70 kW to 650 kW.

Other Anchorage utilities include water, wastewater, storm water, telecommunications, cable and cellular services. The Anchorage Water and Wastewater Utility (AWWU) provides water and sewer, with the majority of drinking water sourced from Eklutna Lake and ground wells. Treated water is distributed to the majority of the municipality through an extensive network of transmission and distribution mains, totaling over 840 miles in length. The storm drain system is comprised of oil and grease separators in storm drain catch basins and sedimentation basins that are owned by the Municipality or built by private developers. Storm water is collected to reduce flooding from rain and melting snow. The water collected is discharged into creeks, lakes or wetlands.

Anchorage's fiber optic capacity expanded recently as GCI completed its six-year TERRA project, with 400 miles of fiber optic cable and 13 new microwave towers providing network connection for 65 communities in Southwest Alaska. The TERRA Southwest and Northwest phases serve 84 communities totaling nearly 45,000 residents and covers 3,000 miles.

The Anchorage Regional Landfill was built in 1988 and has capacity through 2050, exceeding the typical 50-year life-expectancy for most Class 1 landfills. Due to limited infrastructure, operations at the Anchorage landfill are currently inefficient and result in a large carbon footprint. Trucks are used to transfer leachate for disposal in the Anchorage Water and Waste Water Utility sewer system. Installing a direct pipeline from one site to another would remove the issues from hauling leachate and create a more efficient system, according to local utilities. The MOA has already started incorporating sustainable practices into the process by establishing a gas-to-energy project.

2. SWOT Analysis

Survey

AEDC conducted a SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis throughout the first quarter of 2017. Through this online survey, 1,200 individual responses addressed a series of five open-ended questions, giving insight regarding public perception of Anchorage's economic climate. Survey responses were aggregated into major categories and the individual responses per category are displayed as a percentage of the total number of respondents to demonstrate the strength of public opinion. Several responses fell into multiple categories, therefore the summed category percentage exceeds 100%. The questions and the aggregated results are below:

In your opinion, what makes Anchorage's economy strong?

Tourism Industry	23%
Oil and Gas Industry	23%
Local businesses	23%
Population Diversity	14%
Transportation Industry	11%
Robust work force and job market	10%
Government services/funding/jobs	10%
Military base jobs and activity	9%
Attitude and resiliency of population	9%
Healthcare Industry	8%
Geographic factors and resources	8%
Education	6%
Did not respond to question	5%
Tax structure	3%
Fishing Industry	2%

In your opinion, what makes Anchorage's economy weak?

Lack of a diverse economy/overreliance on few key industries	40%
Government fiscal uncertainty	18%
High costs of living	10%
Lack of local businesses	9%
Prevalence of crime/drugs/homelessness	9%
Lack of jobs and high employee turnover	8%
Negative attitude of population	5%
Lack of infrastructure and transportation	5%
Poor education system	5%
Lack of taxes	4%
Lack of attractive downtown/city center	3%
Geographic factors	3%
Did not respond to question	3%
Too many taxes/disproportionate tax burden	3%
Lack of tax incentives for business	1%

In your opinion, what are opportunities for Anchorage's economy?

Increase business and industry diversity	29%
Increase year-round tourism opportunities	22%
Increase R&D and energy diversity	17%
Become a global logistics and trade hub	13%
Promote arts and culture and beautify city	13%
Become a recreation hub	11%
Improve infrastructure	11%
Improve education and university system	10%
Expand technology Industry	9%
Retain and encourage new talent	8%
Expand health care industry	6%
Institute new taxes	5%
Did not respond to question	5%
Fiscal clarity	5%
Improve attitude of population	5%
Improve safety and decrease crime/drugs /homelessness	2%
Decrease taxes	1%
Improve tax incentives for businesses	1%

In your opinion, what are threats to Anchorage's economy?

Government fiscal uncertainty	29%
Lack of an innovative and diverse economy	26%
High crime/drugs/homelessness	22%
Lack of talent retention and attraction	11%
Lack of local businesses	11%
High cost of living	9%
Cuts to education	9%
Negative attitudes and lack of community engagement	8%
Lack of taxes	8%
Job loss and wage decrease	8%
Poor infrastructure	8%
Too many taxes	7%
Environmental degradation /global climate change	4%
Did not respond to question	2%

The final question asked participants what initiatives or actions they would recommend to increase Anchorage's economic resiliency. Responses guided the development of the planks of this document.

Roundtables:

AEDC conducted a series of community and business-oriented roundtable meetings throughout Anchorage, from Eagle River to Girdwood. The purpose of these meetings was to foster a dialogue amongst a diverse group of individuals to obtain granular feedback regarding the state of Anchorage's economy. Those present at the roundtables were asked the same five questions as in the online survey. The results from these meetings were incorporated into the online survey responses and separated into major areas of focus.

The following strengths, weaknesses, opportunities and threats are listed in no particular order.

Strengths:

Alaska's economic center
Largest state university
Multitude of K-12 school options: public, lottery, charter, immersion etc.
Globally centered airport with direct routes
Port of Alaska
Railroad headquarters
Transportation and logistics center for state
Diverse, livable neighborhoods
Surrounded by natural beauty
Recreation opportunities
Unique Alaska brand
Oil and gas headquarters
Native corporation headquarters
Diverse workforce
Medical industry center for the state
Diverse population
Military bases

Weaknesses:

Lack of diverse and affordable educational opportunities
Low venture capital investment in Anchorage
Transient student population
Lack of infrastructure development and existing infrastructure is aging and corroding
High costs for shipping, transportation, and travel
Difficult permitting process and excess regulations around rebuilding
Lack of affordable, available housing
Lack of an attractive city center
Overly reliant on a few key industries
Lack of a diverse economy
High costs of capital and labor
Seasonal tourism industry only
Widespread increase in crime
Pervasive and persistent homelessness
Lack of community engagement

Opportunities:

Improve the university and education system
Retain and attract new talent with internship and mentorship programs
Increase job training for adults

Increase Arctic education and research opportunities
Capitalize on the airport by further developing aviation industry and increasing direct connections and air cargo opportunities
Improve infrastructure
Ease up municipal permitting process
Increase affordable housing
Beautify city
Increase industry diversity: agriculture, technology, manufacturing, renewable energy
Increase R&D and energy diversity
Increase winter tourism
Expand healthcare industry and transparency
Improve safety with community policing, more police resources, and community education on drugs

Threats:

Future budget cuts to education
Further decline of oil and gas production
State fiscal crisis and budget uncertainty
Lack of skilled labor
Lack of competition in higher education and outflow of university students to out-of-state schools
Anti-development attitude
Lack of funding for infrastructure
Climate change impact on several industries
Potential loss of military base or personnel
Narrow tax base
Polarization of political parties
Corrosion issues at the Port of Alaska

These results depict trends and clarify the major concerns and needs of Anchorage's citizens. This strategy seeks to leverage the current strengths of Anchorage's economy to create opportunities that mitigate existing weaknesses and are able to withstand future threats. The largest perceived threat against the future stability of the economy is the state's current fiscal crisis and uncertainty within the budget, followed closely by the threat of further decline in oil and gas production. The single largest weakness is the persistent lack of economic diversity. Anchorage's economy is challenged by an invariable industry base and a significant reliance on resource extraction and government spending.[8]

However, the SWOT analysis did reveal several potential opportunities for Anchorage's economy. Key among them were: revitalizing Anchorage's neighborhoods, rebuilding housing and infrastructure, improving the university system so as to better retain and attract talent and venturing into new industries while simultaneously expanding the scope of several existing key foundation industry sectors. These opportunities are reflected in the next section of this document through the proposed Strategic Initiatives.

8 Hobson, M. (2016, May 9). Economist explains bleak economic realities of oil crash.

3. Strategic Initiatives

Goal 1: URBAN REVITALIZATION

Urban revitalization is a goal Anchorage has been pursuing for decades; Anchorage 2020, Vision Anchorage, previous CEDS and AEDC's Live.Work.Play initiative have all attempted to catalyze the revitalization of Anchorage. Urbanization and modernization are essential to the future of Anchorage as reports have proven that industry chases talent and talent chases place.[9] Without workforce affordable housing in safe communities, effective public transportation, pedestrian friendly streets, modern shopping and grocery outlets and a vibrant arts scene, Anchorage will be unable to attract or retain the workforce needed to be economically sustainable.

Urban centers attract and retain workforce, encourage creativity and ultimately contribute to the overall brand of a city. With access to the mountains, a world class trail system, fishing, biking and other recreation, Anchorage is an obvious destination for the avid outdoor enthusiast. However, Anchorage is challenged in appealing to the person who wants to be able to live in a neighborhood where they can walk to a grocery store without crossing a major highway, take the bus to a concert downtown, or bike commute throughout the year. The Wall Street Journal reported millennials overwhelmingly favor urban settings and workplaces close to where they socialize.[10] Anchorage would benefit if it could combine its recreational opportunities with the cultural amenities of an urban center.

Based on the information collected from the SWOT Analysis, a revitalized downtown is viewed as an essential factor in Anchorage's continual development as a world-class northern destination. A city's downtown is a reflection of community image, prosperity and the level of investment, critical factors in business retention and recruitment efforts. Downtown represents a significant portion of the tax base. If the downtown declines, the property values will drop, placing more tax burden on other parts of the municipality. Downtown is the most visible indicator of a community's pride and commitment, along with its economic and social health. It's either an asset or a liability in the effort to retain existing residents and recruit new residents, business and industries, retirees, tourists and others to the community. Quality of life separates successful cities from declining communities in the new millennium. A revitalized downtown will attract workforce, inspire new industry development and foster community connections.

The Municipality of Anchorage is sharply focused on developing initiatives to improve community safety throughout the entire municipality. Anchorage has faced increasing crime rates for several reasons over the past several years; drug and alcohol abuse have led to an increase in homeless populations, increased theft and property damage and an increase in violent crimes. State and municipal budget constraints led to reduced police and safety resources, which has ultimately contributed to serious public safety concerns among Anchorage's residents.[11] Based on AEDC's SWOT Analysis, community safety is a huge concern for citizens and business owners alike and needs to be a key focus for the municipality moving forward. Anchorage has already made great efforts to reduce assaults and property crimes by increasing police patrols both on foot and in vehicles. The municipality's Parks and Recreation Department and community safety agencies are working to track and remove homeless camps in greenbelts as soon as they pop up and to improve visibility and lighting on the trails, yet more needs to be done to address the root causes of homelessness.

Objective 1: Community Safety

Action Plan:

- Increase communication between community partners (see list of partners below) to eradicate redundancies and inefficacies.

9 Development Counsellors International . (2017). Talent Wars.

10 Kusisto, L. (2017, May 22). Why Millennials Are (Partly) to Blame for the Housing Shortage.

11 City Data . (2015). Crime rate in Anchorage, Alaska (AK).

- Foster a sense of community activism and create connectedness in neighborhoods.
- Evaluate homeless, addiction and emergency service agencies and assess the needs for expansion.
- Increase housing options for the chronically homeless and increase treatment options for those who suffer from chronic addiction.

Potential Community Partners:
Anchorage Police Department, Anchorage School District, Federation of Community Councils, Anchorage Park Foundation, Municipality of Anchorage, Anchorage Downtown Partnership, Coalition to End Homelessness, Catholic Social Services, Covenant House, Community Safety Patrol and other social service agencies.

Potential Resources:
State of Alaska, Department of Housing and Urban Development, Department of Health and Human Services

Performance Measures:
- Decreased number of chronically and temporarily homeless individuals
- Reduced crime rates in Anchorage
- Increased number of detox beds
- Reduced number of 911 calls related to drugs or alcohol

Objective 2: Downtown Revitalization

Action Plan:
- Develop a robust policy toolbox (e.g. incentives, grants, streamlined permitting process, etc.) to address regulatory barriers, encourage responsible development and redevelopment in downtown.
- Increase collaboration among Community Partners to support and promote downtown as a major employment hub and the premier location for corporate headquarters.
- Increase public art and placemaking initiatives downtown.
- Improve the winter walkability of downtown through sidewalk maintenance and heating, covered walkways, and other northern climate best practices.
- Seek to ensure sidewalk fixtures and the ground floors of all buildings engage pedestrians and create an active, inviting urban experience with a comfortable, safe and vibrant pedestrian environment year-round.
- Implement the traffic and circulation recommendations of the Downtown Anchorage Comprehensive Plan (2007) to convert one-way streets into two-way streets.
- Develop more pedestrian-focused street designs and transform underutilized streets into pedestrian areas.
- Develop downtown bike networks and designated pedestrian areas to encourage walking and visiting local businesses.
- Encourage redevelopment of adjacent neighborhoods in a way that supports the goals of those neighborhoods, aligns with plans to revitalize downtown and provides additional housing options for downtown employees.

Potential Community Partners:
Anchorage Downtown Partnership, Anchorage Economic Development Corporation, Anchorage Chamber of Commerce, Municipality of Anchorage, Federation of Community Councils, Visit Anchorage, Downtown Community Council, Anchorage Community Land Trust, Anchorage Community Development Authority, private-sector real estate developers, NeighborWorks

Potential Resources:
State of Alaska, federal partners, private funding sources, non-profit partners

Performance Measures:
- Increased pedestrian traffic downtown
- Increased values for downtown construction projects
- Increased number of downtown residents
- Increased revenues for downtown businesses
- Increased downtown property values
- Increased number of community events downtown year-round
- Increased number of year-round businesses
- Increased number of and affordability of downtown housing units and number of mixed-use housing/ retail units
- Reduced downtown vacancy rates

Objective 3: Recreation Hub/Visitor Expansion

Action Plan:
- Expand year-round tourism with targeted marketing efforts and additional winter city amenities. Promote Anchorage as an adventure and niche tourism hub with year-round entertainment and recreation opportunities.
- Utilize greenbelts and urban trail (e.g. Chester Creek and Campbell Creek) access points as mini recreational areas, tourism and commercial hubs by offering amenities such as lodging, food and housing options.
- Promote and support bike sharing stations throughout the municipality to attract tourists and locals alike to all neighborhoods.
- Improve lighting and provide heated areas along trails and within parks and public spaces to encourage more winter activities, fairs, festivals and markets.

Potential Community Partners:
Anchorage Park Foundation, Parks and Recreation, Visit Anchorage, Municipality of Anchorage, Federation of Community Councils, Anchorage Economic Development Council, private businesses, Anchorage Downtown Partnership, Anchorage Community Land Trust, private developers, sports and recreation non-profits

Potential Resources:
Cooperative marketing programs, potential Tourism Improvement District Legislation, USDA Rural Development Grants, Community Tourism Assessment Model, Native American Tourism and Improving Visitor Experience (NATIVE)

Performance Measures:
- Increased number of businesses located near major Anchorage greenbelts
- Increased number of community events along the trail system
- Increased pedestrian, bike and other non-motorized traffic along Anchorage greenbelts
- Increased revenue to local businesses on the greenbelt
- Increased winter visitor numbers

Goal 2: INFRASTRUCTURE ASSETS AND HOUSING

Anchorage will develop infrastructure necessary to attract and retain firms as well as to develop entrepreneurs and accelerate business formation.

Expanded transportation options will improve connectivity throughout the city, the state, and the Lower-48 Physical infrastructure also contributes to the span of digital infrastructure and technological capabilities. In the interconnected world, the sustainability of the Alaskan economy depends on the stable affordable access to broadband services. Continued improvements to Anchorage's infrastructure is key to an increased competitive economic advantage on the global stage.

Numerous engineering studies have documented that the Port of Alaska has a severe corrosion problem and that its wharf piles are in extremely poor condition. Anchorage currently spends millions of dollars each year to maintain the port's operational capacity but this fails to address the facility's ability to survive an earthquake or other natural disaster. The aging port infrastructure represents the largest risk to Anchorage's – and thus Alaska's – supply chain operations. Alaska's small and widely spread population – nearly 85% of which relies on the Port of Alaska – cannot economically support redundant cargo-handling facilities that could replace the port in an emergency situation.[12] Anchorage -- and Alaska as a whole -- must focus on repairing the Port of Alaska in order to sustain our current economic structure, but also to grow and diversify the economy in the future.

Anchorage also suffers from a persistent lack of workforce affordable and available housing, especially in urban neighborhoods. Diverse housing options for rental and ownership are imperative for a well-rounded, vibrant city.[13] Quality urban housing attracts millennials and young professionals to Anchorage, retains retirees and spurs the economic activity incentivizing outside investment.[14]

Objective 1: Transportation

Action Plan:

- Support planned improvements to the Port of Alaska and actively expand the role of the Port as an economic engine for Anchorage.
- Inventory current planning efforts and increase communication between entities in order to remove information silos.
- Work with community partners and developers to increase investment in new and existing road infrastructure.
- Seek out new opportunities for efficient public transportation options.
- Implement safe road sharing and sidewalk infrastructure for pedestrians.

Potential Community Partners:

Port of Alaska, Municipality of Anchorage, Anchorage Economic Development Corporation, Alaska Department of Transportation and Public Facilities, Federal Highways Administration, People Mover, Alaska Movement, State of Alaska

Potential Resources:

EDA, State of Alaska, Municipality of Anchorage, U.S. Department of Transportation, U.S. Army Corps of Engineers, NOAA, private sector investment.

Performance Measures:

- Increased ridership of the People Mover system
- Decreased accidents

12 American Society of Civil Engineers . (2017). Alaska Infrastructure Report Card

13 Kelly , D. (2016, July 8). Anchorage doesn't have enough homes to meet demand.

14 Kusisto, L. (2017, May 22). Why Millennials Are (Partly) to Blame for the Housing Shortage

- Targeted increase investments on pedestrian and public transportation infrastructure
- Upgraded all priority Port of Alaska infrastructure
- Maintained existing road infrastructure

Objective 2: Utilities

Action Plan:

- Evaluate water, sewer, storm water, natural gas and electrical infrastructure to determine emergency preparedness and resiliency of existing infrastructure.
- Invest in improved water, electrical and natural gas infrastructure to increase efficiency and improve emergency preparedness and resiliency.
- When economic, continue development of renewable hydro, solar and wind energy sources and energy storage technologies to decrease carbon emissions and further diversify fuel sources for power generation.
- Evaluate the expanded use of building backup generators and a fuel supply, and other backup power sources such as batteries (including the batteries in electric vehicles) in homes and businesses to increase redundancy and boost resiliency.

Potential Community Partners:

Municipality of Anchorage, Anchorage Waste and Wastewater Utility, Anchorage Soil and Water, Anchorage Municipal Light and Power, Fire Island Wind LLC, ENSTAR Natural Gas, Chugach Electric Association, Alaska Energy Authority, University of Alaska, Alaska Center for Energy and Power, Eklutna, Inc.

Potential Resources:

U.S. Department of Energy, SBA, U.S. Environmental Protection Agency's Energy Star Program, private sector development projects, Alaska Affordable Energy Strategy.

Performance Measures:

- Increased electric generation from renewable energy sources
- Increased rate stability
- Increased residential and commercial heating efficiency and resiliency
- Increased number of buildings with backup power sources that can be safely separated from the grid

Objective 3: Housing

Action Plan:

- Encourage the development of diverse housing options and mixed-use spaces with amenities to boost commerce, attract more traffic and foster vibrant communities in walkable neighborhoods.
- Specifically increase the amount of workforce housing and mixed-use housing construction.
- Expand home rental and ownership opportunities, particularly for moderate-income households such as early-career millennials and seniors
- Provide an effective mix of programs and services that address the housing and housing-related needs of residents, such as home improvement assistance, energy efficiency, and safe streets
- Encourage higher density housing along transit corridors.
- Increase market-rate housing opportunities in walkable locations near important amenities (e.g. grocery store, pharmacy, health care, public transit, etc.)
- Encourage sustainable and energy-efficient building practices.

Potential Community Partners:

Cook Inlet Housing Authority, Anchorage Community Land Trust, Alaska Housing Finance Corporation, private developers, Municipality of Anchorage, U.S. Department of Housing and Urban Development, NeighborWorks

Potential Resources:

USDA Rural Development grants, Alaska Municipal Conference, Alaska Housing Finance Corporation, Municipality of Anchorage, State of Alaska, private investors, Cold Climate Research Center, UAA College of Engineering, HUD

Performance Measures:

- Increased the number of downtown residents and housing units
- Increased the number of multi-family housing developments
- Increased the number of mixed-use developments
- Increased affordability of housing units for young professionals, small families and seniors
- Increased employment in construction

Goal 3: STRENGTHEN EXISTING INDUSTRIES

The Municipality of Anchorage is a hub community and critical location for business across the entire state for every industry. Anchorage will lead the state in actions to ensure Alaska has a strong, growing and sustainable economy. Alaska's abundant natural resources have led economic development since the state's inception. As the main economic hub for the state, Anchorage plays a vital role in the process of resource extraction. Alaska's remoteness from global markets combined with the climate and topography make the state a comparatively expensive place to extract resources.[15] Yet, the substantial role played by the resource industry in Anchorage's economy subjects the municipality's resiliency to the ever-changing nature of international and domestic markets.[16]

As the dominant economic development sector, the impact of resource extraction on the municipality's economy cannot be discounted. The State of Alaska's CEDS features several initiatives aimed at improving the resiliency and sustainability of the resource extraction industry. The oil and gas industry operates statewide and is incorporated in the economic strategy for the state as a whole. The brevity of direct initiatives focused on the resource extraction industry in Anchorage's strategy does not discount the vital importance of the sector in the Anchorage economy nor does it indicate a diversion of resources or jobs. Diversifying Anchorage's economy would increase the overall amount of capital and employment resources in the Anchorage economy, complementing and supporting oil and gas, mining and seafood's key roles in the local economy. Anchorage should proactively support future expansion and innovation opportunities within the resource extraction industry.

Anchorage is a hub for fresh seafood shipments, workers and fishery management efforts, all of which help circulate money through the regional economy. Seafood processing is the largest manufacturing sector in Alaska and the third largest basic sector job creator, following the oil-and-gas and visitor industries. The Anchorage economy garnered $149 million in labor income and 2,880 full-time jobs from the seafood industry in 2013. Anchorage port facilities shipped out 168 million pounds of Alaska seafood in 2013. The industry directly employs 3,440 workers who reside in Anchorage either year-round or seasonally. Including direct and secondary effects, Alaska's seafood industry accounts for about 0.9% of labor income earned in the Anchorage economy and about 1.2 percent of total employment. Several local businesses import Alaska seafood via truck or air cargo and the fishery industry transports $50 million worth of product through regional ports. Anchorage processes nearly all types of Alaska seafood from all over the state, including salmon, crab, halibut, cod, shrimp, and scallops.

In addition to the resource extraction industry, Anchorage has strong foundations in transportation, military, tourism, healthcare and shipping cargo via sea, land and air. The municipality's strategic geographic location has drawn significant military investment as well as major investments from the international air cargo industry. Sixty

15 Lee, O., Payne, J., Lassuy, D., & Vargas, J. (2015). Oil and Gas Revenues | Alaska State Economy

16 Knapp, G. (2016, March 30). Observations on Alaska's Economy and Economic Implications of Alaska's Fiscal Choices.

percent of all federal dollars spent in Alaska are devoted to defense spending. Military bases employ 8,500 people, accounting for 5 percent of Anchorage's labor force. Military personnel and their families comprise 10 percent of Anchorage's population and provide an incredible boost to the city's economy.

Joint Base Elmendorf-Richardson (JBER) hosts 10,200 Active Duty Troops. JBER is also the home base for 3,328 reserves and guard personnel, and employs an additional 3,562 civilians. JBER's total payroll is $909.2 Million annually, with an economic impact of over $1.6 Billion annually on the state of Alaska.[17] Anchorage's military personnel are an integral part of the city's economic base, but they also contribute to the very identity of the city. Military dependents fill schools, work in jobs across the city, and vote in local elections.

Anchorage is only 9.5 hours by air from 90 percent of the industrialized world, providing an ideal vantage point for the majority of the world's markets. The Ted Stevens Anchorage International Airport is the fifth busiest airport hub in the world in terms of cargo throughput. The strategic location combined with Alaska's liberalized air cargo transfer rights provide unique cost and operational efficiencies.

The Municipality partners with state and federal funders to support military and civilian operations, as well as industries such as construction and healthcare. According to UAA's Institute for Social and Economic Research, state support to local government budgets has increased from 12 percent in 2004 to nearly 30 percent in 2015. In 2015, the Municipality of Anchorage received $74.3 million in state money, more than double the amount received by any other Alaskan borough. While that amounts to only 4 percent of the Municipality's budget, there are large impacts that ripple throughout Anchorage when funding patterns shift. In 2016, around 30 percent of Alaska's state budget came from the oil industry and 19 percent came from the federal government. The state also received $8 billion through contracts, grants, loans and other forms of financial assistance.[18] Anchorage's multilayered relationship with the state and federal government subjects the municipality's economic strength to unpredictable legislative decisions.

Objective 1: Resource Industry

Action Plan:

- Maintain and grow logistical efficiencies based in Anchorage to better serve projects in remote areas by developing and revitalizing the Port of Alaska and continuing to invest in the Anchorage International Airport.
- Maintain and grow logistical efficiencies based in Anchorage via rail and road transportation systems.
- Support continued development of new technologies.
- Emphasize a center of excellence in research and development of new technologies in Anchorage.
- Support targeted workforce initiatives to grow and maintain a local and state workforce.
- Proactively support future expansion and innovation opportunities within the resource extraction industry.

Potential Community Partners:

University of Alaska Anchorage, Alaska Pacific University, Municipality of Anchorage, Business Enterprise Institute (UAA), Alaska Oil and Gas Association, Resource Development Council, Alaska Miners Association, Alaska State Chamber of Commerce, Anchorage Chamber of Commerce, private sector resource developers.

Potential Resources:

State of Alaska, Bureau of Land Management (BLM), Department of Natural Resources (DNR), Department of Transportation & Public Facilities (DOT&PF), Federal Aviation Administration (FAA)

Performance Measures:

- Increased tonnage traveling through the Port of Alaska

17 Northern Economics. (2016). Assessment of the Proposed Force Reduction of the 4-25th Airborne Brigade Combat Team.

18 Guettabi, M. (2016, November). What's Happened to the Alaska Economy Since Oil Prices Dropped?

- Increased graduates from local industry related programs
- Increased capital investment in the Port of Alaska
- Reduced costs in backhaul shipping

Objective 2: Medical Industry

Action Plan:

- Offer more varied medical training options and expanded education programs leading to internships and practical learning applications to increase local hire and employment numbers within the healthcare field.

Potential Community Partners:

Providence Alaska Medical Center, Alaska Regional Hospital, University of Alaska (College of Health), Alaska Pacific University, Alaska Native Tribal Health Consortium, Alaska Vocational Technical Center (AVTEC), Charter College

Potential Resources:

Department of Health and Human Services (DHHS), Municipality of Anchorage, Housing and Urban Development (HUD), Federal Emergency Management Agency (FEMA)

Performance Measures:

- Increased medical training programs and internships
- Increased local hire for medical jobs

Objective 3: Global Logistics and Trade Hub

Action Plan:

- Foster the growth of diversified economic sectors, expansion of sales activity outside Alaska or launching new firms looking to export high value goods/services globally.
- Leverage proximity to Asia and other international markets to become a center of global trade and expand Anchorage's role as an air cargo hub.
- Capitalize on airport cargo capabilities and expand utilization of cargo transfer services for international carriers through continued support of Ted Stevens Anchorage International Airport's business development initiatives, including airport-focused industry recruitment and carrier service expansion.
- Support exports of Alaska-produced products like seafood, specialized oil and gas technologies via air cargo.
- Increase Anchorage's real estate capacity for logistics projects: Address existing challenges to development (regulation, financing, etc.) and market opportunities focused on development of new logistics real estate.
- Expand utilization of empty backhaul containers with Alaska-based business.
- Utilize existing and new workforce development programs to support the workforce needs of companies in the logistics and trade sectors.

Potential Community Partners:

Municipality of Anchorage, Ted Stevens Anchorage International Airport, Port of Alaska, College of Business and Public Policy (UAA), Business Enterprise Institute (UAA), University of Alaska

Potential Resources:

Federal State Trade Expansion Program grants, The Western U.S. Agricultural Trade Association (through the Department of Natural Resources' Division of Agriculture), Governor's Office of International Trade

Performance Measures:

- Increased number of carriers and freight forwarders utilizing air cargo transfer rights
- Increased local hire and employment in this industry
- Increased north and southbound cargo tonnage
- Increased quantity and value of international exports

Objective 4: Military Partnership

Action Plan:

- Continue to support the Air Force Community Partnership Program between the Municipality of Anchorage and JBER.
- Explore ways to coordinate efforts on emergency management tactics and services.
- Explore ways to foster shared medical services.
- Explore ways to promote recreation opportunities on and around JBER for military personnel and civilians alike.
- Explore ways to expand shared logistic opportunities both by air and maritime.
- Expand partnerships between trade, apprenticeship and education programs.
- Expand energy and utility partnerships.

Potential Community Partners:

Municipality of Anchorage, Ted Stevens International Airport, Port of Alaska, College of Business and Public Policy (UAA), Business Enterprise Institute (UAA), University of Alaska, Trade Unions, Enstar, Chugach Electric, JBER, Anchorage Police Department, Charter College, Regional Medical Center, Providence Hospital, VA Medical Center, AWWU, ML&P, AEDC, Anchorage Chamber of Commerce, Chugiak-Eagle River Chamber of Commerce.

Potential Resources:

Federal State Trade Expansion Program grants, The Western U.S. Agricultural Trade Association (through the Department of Natural Resources' Division of Agriculture), Governor's Office of International Trade, Municipality of Anchorage, FEMA, DHHS, HUD

Performance Measures:

- Increased number of exiting military personnel remaining in Anchorage
- Increased local hire and employment of retired military personnel in Anchorage
- Increased number of exiting military personnel entering trade, apprentice and higher education in Anchorage
- Increased number of active duty military personnel

Goal 4: INDUSTRY DIVERSIFICATION

Building upon the extensive information on Anchorage's foundational economy in Goal 3, there is opportunity for Anchorage to attract additional new industries and expand upon current opportunities. A sustainable economy enhances a community's standard of living by creating wealth and jobs, encouraging the development of new knowledge and technology and helping to ensure a stable political climate. Having a diverse economy based on a wide range of profitable existing and new sectors plays a key role in sustainable economic growth. Economic expansion and diversification is imperative to reducing economic volatility and increasing real activity performance.

Anchorage's economy can grow in two ways: by growing existing basic industries and by increasing the multiplier behind support industry growth, bolstering the direct and indirect economic impacts of employment in these industries. Much of Anchorage's growth over the past four decades has been in support industries, yet this growth

has stalled and proven unsustainable since the onset of Alaska's recent recession.[19] The Institute for Social and Economic Research and the Alaska Department of Labor project employment losses in 2017 to expand to support industries and industries dependent on household spending.[20]

Industry diversification will place Anchorage in a better position to mitigate economic risks or seize emerging new growth opportunities. Just as individual investors seek a diverse financial portfolio, a community must also aim to develop a broad base of employment and wealth generators to comprise its economic portfolio. With a strong foundational economy in place, Anchorage must invest in new lines of economic growth by diversifying and expanding its basic industries. Economic diversification provides a sustainable source of productive jobs, reducing exposure to volatile market fluctuations, exhaustible industries and government dependence on export revenue.[21] Lower fiscal spending (such as cuts to public investment programs) in times of recession decreases economic activity and unduly inhibits future growth opportunities. Creating self-sustaining industries from scratch requires a concerted, coordinated effort and substantial resources. By focusing on innovation, research, and development, Anchorage can propel ahead and create the healthy economy desired by all.

One critical factor of industry diversification is cultivating entrepreneurship, which empowers individuals, improves standards of living throughout a community and creates jobs, wealth and innovation in the economy. Most of the net new jobs in the US are created by new and young companies and yet fewer jobs are being created than at any time in the past. Today, companies are employing far fewer workers to hit the same revenue scale. Technology plays a big role in this. With global increases in connectivity and technology ushering in a new economic era, Anchorage must seize an opportunity -- not by recruiting companies from other parts of the country or state, or only focusing on retaining existing companies -- but by concentrating on growing new companies and thereby creating more growth, jobs, wealth and innovation.
To do this requires a new model, putting the focus on people as the new companies. This new type of economic development is a human-centric strategy concentrating on the people who create economic value from scratch: entrepreneurs. In order to best start and grow innovative business, those entrepreneurs must have access to healthy entrepreneurial ecosystems.

Objective 1: Innovation District within University-Medical Area (UMed)

Action Plan:

- Build upon the MOA's current "UMed District" plan to revitalize the area and support the development of a next generation innovation district that connects businesses and institutions and serves as a hub of economic activity.[22]
- Ensure strong economic assets and a rich entrepreneurial ecosystem by being mindful of the firms, business types, institutions, mix of cultures, etc.
- Expand strong physical assets including a mix of public and private development, buildings, open spaces and associated infrastructure to encourage new levels of connectivity.
- Encourage networking assets between individuals, firms and institutions to generate, sharpen and accelerate ideas towards commercialization.
- Build the innovation district with physical connectivity in mind: provide pedestrian walkways between buildings, welcoming public spaces and easy access to and from the campus for all modes of transportation.
- Actively market the district as a place for companies to cohabitate and collaborate to attract more industries to both the innovation district and the municipality at large.
- Incorporate both co-working space as well as space for business incubation and/or acceleration.

19 Guettabi, M. (2016, May 11). An Assessment of Alaska's Economy.
20 Guettabi, M. (2017, January 18). What do we know about the Alaska economy and where is it heading?
21 International Bank for Reconstruction and Development. (2015). Economic Diversification and Nonextractive Growth (pp. 28-41, Rep.).
22 Planning and Zoning Commision. (2015, October). UMED District Plan.

- Expand research and development collaborations including the number of private sector/UAA partnerships that support research and development.
- Foster information sharing between local companies, start-ups, institutions and corporations by creating a centralized research and development data portal.
- Promote networking opportunities through the creation of collaborative workshops, trainings, symposiums and after-work activities. It's a leading tenant of innovation districts: "After-work activity cannot be an afterthought," according to the Brookings Institute.[23]
- Foster the development of an on-campus retail/service industry to attract economic activity to the area, integrate the local residents and university students and provide common meeting spaces for business networking.

Potential Community Partners:

University of Alaska Anchorage, Alaska Pacific University, Providence, Alaska Regional Hospital, Private Developers, Municipality of Anchorage, Launch Alaska, The 49th State Angel Fund, The Boardroom, Alaska Native Tribal Health Consortium, Welcome Anchorage, Southcentral Foundation, University Area Community Council, BLM, Alaska Mental Health Trust, Business Enterprise Institute (UAA), Small Business Development Center (SBDC) (UAA), Anchorage Park Foundation

Potential Resources:

Workforce Innovation and Opportunity Act programs, State CEDS plan, state and federal research grants, foundations

Performance Measures:

- Increased number and value of building permits within the UMed district
- Increased number of businesses in the UMed district
- Increased the number of minority-owned businesses in the UMed district
- Increased number of residents – especially students -- in the UMed district
- Increased investment dollars from outside companies within the UMed district
- Increased revenue for existing businesses within the UMed district
- Increased number of patents and licensing agreements with commercial entities coming from the UMed district
- Increased number of patents originating in the UMed district
- Increased total research grant, foundation and other funds originating in the UMed district

Objective 2: Energy Innovation

Action Plan:

- Encourage renewable energy industry growth and expansion through strategic support of new and existing companies as much as economically possible.
- Utilize battery energy storage capabilities as a means of emergency preparedness and disaster mitigation on a building scale when possible, including the possible use of vehicle to home (V2H) energy supply from electric vehicles.
- Identify existing barriers for the efficient and competitive use of renewable energy in Anchorage.

Potential Community Partners:

Renewable Energy Alaska Project, Municipality of Anchorage, Launch Alaska, electric utilities, Alaska Energy Authority, Alaska Center for Energy and Power

23 Brookings Institute. (2017, June 26). Advancing a new wave of urban competitiveness: The role of mayors in the rise of innovation districts

Potential Resources:
EDA, DED, AIDEA, federal research grants, private sector businesses

Performance Measures:
- Increase renewable energy use
- Increase renewable energy infrastructure
- Increase use of building-scale battery energy storage
- Increase portion of city GDP derived from renewable energy industry
- Increase job creation from renewable energy industry
- Decrease or stabilize electricity rates

Objective 3: Research & Development and Technology

Action Plan:
- Increase investment in R&D as an economic engine and way to more fully integrate university research resources and capabilities into the economy.
- Advocate for environmental resiliency through development of green technology.
- Create public-private partnerships to monetize disruptive technology (e.g. automation, building, construction, energy and medical technology) and connect workers in affected industries to training programs and other employment opportunities.
- Expand proof-of-concept incubator or accelerator programs to test technologies with commercialization potential.

Potential Community Partners:
Municipality of Anchorage, University of Alaska, Alaska Pacific University, Alaska Native Tribal Health Consortium, Southcentral Foundation, Launch Alaska, ISER, Arctic Domain Awareness Center (UAA), Alaska Science and Engineering Program, Institute of Social and Economic Research, Arctic Domain Awareness Center (UAA), Business Enterprise Institute (UAA)

Potential Resources:
EDA, DED, AIDEA, federal research grants, private sector businesses

Performance Measures:
- Increased local employment in the technology industry
- Increased number of technology companies based or operating in Anchorage
- Increased portion of city GDP derived from technology industry

Objective 4: Manufacturing and Entrepreneurship

Action Plan:
- Create public-private partnerships to kick-start manufacturing initiatives, developing an incubator or accelerator program specifically for manufacturing-oriented businesses to consolidate resources and knowledge.
- Engage funding/incentives to encourage manufacturing start-ups and further develop the industry, incentivizing the creation of rapid prototyping centers.
- Implement LEAN Manufacturing practices to reduce conversion cost per unit and overall production costs.
- Encourage import substitution to promote the manufacturing and purchase of local products.
- Support efforts to recruit, retain and cultivate talented people (entrepreneurs, professional services, tech employees, investors, developers, etc.) through strong links between schools, universities, tech bootcamps and the private sector.
- Create access points or bridges of inclusion for all people in Anchorage's entrepreneurial ecosystem

through events, organizations or online communities.

- Strengthen partnerships between people and institutions and provide ease of access to knowledge and resources to help entrepreneurs (mentor networks, universities, libraries, accelerators/incubator, investors, coworking spaces and manufacturing hubs).
- Identify leaders in the private and public sector to promote and celebrate entrepreneurship and innovative thinking.
- Support the intersections and collisions between people, ideas and resources through institutions (coworking spaces, research parks, coffee shops) or events (pitch competitions, conferences, meetups)
- Market Anchorage as a favorable place to launch a company
- Facilitate sprints, Startup Weekends, hackathons and other events that chanel entrepreneurial talent to create new products of companies.

Potential Community Partners:

Municipality of Anchorage, Southwest Alaska Municipal Conference's Manufacture Alaska Extension Partnership (MAKE) and US Manufacturing Extension Partnership (MEP) network, Business Enterprise Institute (UAA), Anchorage Makerspace, , the State of Alaska, University of Alaska, Alaska Pacific University, 49SAF Partner Funds, Alaska Investor Network, University of Alaska Center for Economic Development, Alaska Small Business Development Center, Anchorage Economic Development Corporation, Anchorage Chamber of Commerce, Anchorage Community Land Trust, Launch Alaska, The Boardroom, MakersSpace, Anchorage Library, Alaska Ocean Cluster Initiative, Anchorage Downtown Partnership, YWCA, Code for Anchorage, Startup Weekend, 1 Million Cups, private sector service providers

Potential Resources:

Buy Alaska Program, State of Alaska AK Loyal branding programs (Made in Alaska, Alaska Grown, Silver Hand), Federal EDA grants, Alaska Seafood Marketing Institute, Alaska Tourism Marketing Board, Alaska Tourism Industry Association, federal grants

Performance Measures:

- Increased number of manufacturing businesses
- Increased manufacturing industry employment
- Increased portion of city GDP from manufacturing industry
- Decreased imports of manufactured commodities
- Number of new businesses launched
- Number of new jobs associated with startups
- Number of startup events and meetups held
- Number of active angel investors and Venture Capitalists
- Amount of risk capital deployed
- Number of patents secured
- Number of active mentors

Goal 5: EDUCATION/WORKFORCE DEVELOPMENT

Anchorage is home the University of Alaska's largest campus (UAA) as well as APU and several career and technical training initiatives focusing on workforce readiness and certificate programs. Despite this, Anchorage has historically suffered and continues to suffer from what is called "brain drain." Students leave the state to pursue higher education and a more traditional college experience and often do not return to Alaska once they have earned degrees, or they leave immediately after college for jobs in the Lower 48. In 2014, the most recent year data was analyzed, 33 percent of graduating high school students in Alaska planning on attending college were enrolled in an out-of-state postsecondary institution. In comparison, according to the National Center for Education Statistics, nationally, 75 percent of students remain in their home state for college. Alaska has one of the lowest college graduation rates in the country. Nationally, 59 percent of students finish their bachelor's

degree within 6 years compared to 30.6 percent of students in Alaska. Only 10 percent of Alaskan college students graduate within the traditional 4 years.[24] This is in large part to a non-traditional student base, a transient military population and a lack of preparation from the Alaska K-12 system.

Alaska hosts nearly 20,000 active duty military personnel and their families; with that comes a large number of annual discharged personnel who either stay or leave the state. Many of these individuals are highly skilled but unable to connect with potential employers within the Anchorage business community.[25] Conversely, many companies have reported difficulty with finding qualified local employees. This is indicative of a pervasive problem with Anchorage's workforce development and job-matching opportunities. The universities are a fundamental mechanism for retaining exiting military personnel. The UAA military program offers numerous vocational and technical classes on JBER, earning the university Victory Media's Military Friendly School distinction eight years in a row.

Alaska's unique climate and community structure and its remote proximity to the rest of the United States also make it challenging to attract outside workforce. Anchorage has the potential to develop both K-12 and higher education resources and programs that will ultimately increase workforce retention and attraction efforts. By working with major industry employers such as Oil and Gas, Fishing, Mining and other foundational industries to create targeted training and internship programs, local universities will be able to expand their educational offerings and practical learning opportunities.

One reoccurring point of focus throughout the SWOT and public feedback process was the lack of quality education and high teacher turnover rate within the Anchorage School District. This not only impacts the students within the Anchorage School district, but also the economy as the municipality loses its educated workforce of teachers. Additionally, the SWOT stressed the lack of access to alternative education opportunities, vocational training and English-as-a-second-language courses, especially for lower-income populations. Anchorage hosts several charter and technical schools but they are often too expensive to accommodate the demographics most in need of their services.

Objective 1: University

Action Plan:

- Increase opportunities for university students to interact with industries through experiential learning, internships, mentorship and post-graduation job opportunities through UAA/APU in collaboration with private sector firms.
- Increase the number of industry partnerships with the University specifically seeking to better define "skill gaps" and shared mechanisms for addressing them.
- Capitalize on university research capabilities to increase the number of data-sharing links between universities, industries and government. Create an open path of communication and data sharing between the MOA and APU/UAA to boost Anchorage's Open Data initiative and make data more readily available to businesses, students and citizens.
- Build connections with large employers in all industries by offering joint training options in conjunction with the universities.
- Refine existing K-12 pathways leading to technology certifications for absorption into the local job market.

Potential Community Partners:

University of Alaska Anchorage, Alaska Pacific University, Anchorage School District, private sector businesses, Anchorage Chamber of Commerce, MOA, AEDC

24 Institute of Education Sciences . (n.d.). National Center for Education Statistics Data Lab.

25 Governing . (2016, May 31). Military Active-Duty Personnel, Civilians by State.

Potential Resources:
Workforce Innovaion and Opportunity Act (WIOA) funds, sector-based state workforce plans

Performance Measures:

- Increased share of Alaskans attending college in-state
- Increased retention rates of recent university graduates in Anchorage
- Increased university enrollment rates
- Increased graduation rates
- Decreased average length of time for graduation
- Increased job-match rates for recent university graduates

Objective 2: Workforce

Action Plan:

- Foster current and create new mentorship programs between exiting military personnel, the university and local businesses to forge relationships and increase skilled military workforce retention.
- Offer tailored training programs based on neighborhood needs. Perform ongoing surveys and observations of people, schools and businesses in underserved neighborhoods to gain a complete understanding of workforce gaps.
- Create training programs that would fill the workforce gaps in the service, tech and retail industries and increase marketing to key demographics, neighborhoods and high schools.
- Continually assess unmet workforce needs through surveys and outreach to local businesses, utilizing the information to improve training programs.
- Integrate skilled immigrants and refugees more fully into our economy to avoid the underutilization of skills and economic resources.
- Build opportunities for increasing entrepreneurial training and resources for low-income neighborhoods to promote targeted workforce development and address chronic community stress caused by poverty and under/unemployment.
- Encourage high quality and affordable childcare to support Anchorage's workforce.
- Foster relationships between K-12 Education, Higher Education, and technical programs.

Potential Community Partners: Joint Base Elmendorf-Richardson, University of Alaska, Alaska Pacific University, Anchorage Community Land Trust, King Career Center, Corrections facilities, Alaska Process Industry Careers Consortium, Small Business Development Center, Municipality of Anchorage, AEDC, Anchorage School District

Potential Resources: Alaska Community Foundation Vocational Fund for Alaska's Future grants, DCCED's Division of Community and Regional Affairs, Alaska Municipal League

Performance Measures:

- Increased retention and job-match rates of exiting military personnel
- Decreased unemployment rates in low-income neighborhoods
- Increased average wages in low-income neighborhoods
- Reduced non-resident workforce total

4. Resiliency:

"Many of the most important events which have changed Alaska's economy have been almost completely unexpected. Examples include World War II, the 1964 earthquake, the discovery of the giant Prudhoe Bay oil field, the Exxon Valdez oil spill, the dramatic rise in oil prices in 1979 and in the mid 2000s, and the recent world economic crisis. There are probably more surprises in Alaska's future, which may have similarly unanticipated and

dramatic effects." (2012 ISER – Introduction to Economy of Alaska, Gunnar Knapp).[26]

Improved economic stability for all citizens can make a significant difference in how well cities recover from a disaster. Located at the gateway to the Arctic, Anchorage is experiencing rapid environmental, economic and cultural changes. Environmentally, climate changes are occurring in Alaska at twice the rate they are in other regions of the world, resulting in dramatic changes to our freeze/thaw cycles, increased wildfire risk and flooding, according to the EPA. Socially, Anchorage is among the most rapidly diversifying cities in the U.S., which creates tremendous equity challenges and a need to ensure all residents have access to critical services.

Resilience strategies are needed to ensure Anchorage neighborhoods are capable of absorbing and responding to chronic stresses and acute shocks caused by these shifting economic, demographic and environmental drivers. This strategy should prioritize community engagement, infrastructure improvement, job training and the diversification of food and energy sources in ways that develop the skills, institutions and infrastructure necessary to overcome both chronic stresses and acute shocks.

Climate Change Resiliency

Climate change has the potential to significantly harm the sustainability of several key industries, as well as threaten the survival of the surrounding wildlife and natural environment. According to the EPA and the National Climate Association, Alaska is warming twice as fast as the rest of the nation and, in the past 60 years, Alaska has warmed six degrees. This has caused Arctic sea ice to retreat, shores to erode, glaciers to shrink, permafrost to thaw and wildfire occurrences to increase. The thawing of permafrost damages pipelines, buildings, transportation infrastructure, water supplies and sewer system.[27] The cost of maintaining public infrastructure is estimated to increase by 10-20 percent in the next 20 years. Energy production depends heavily on frozen tundra and ice roadways to support oil & gas exploration, especially in areas without conventional roadways. Climate change has also shifted the travel season from 200 days in 1970 to only 100 days in 2002. Anchorage needs to implement a plan to not only combat the symptoms of climate change, but to also prevent it from progressing further in the future.[28]

Adapting to climate change requires participation from the business community as well as the government. Commitments to implement environmentally-conscious business decisions should be secured from key industry players through public-private partnerships. There must be a concerted effort to optimize energy efficiency and minimize resource depletion and pollution.[29] Policy should encourage the use of energy-efficient building designs and waste reduction systems. These actions will help mitigate Anchorage's contribution to climate change as well as attract investment from outside companies focused on sustainability and corporate social responsibility.[30]

Natural Disaster Resiliency

Anchorage does not currently have cargo import capacity or infrastructure capable of substituting for the Port of Alaska in the event of a natural disaster. Trucking goods to Anchorage from the Lower 48 is up to three times more expensive per pound than shipping to the port and air transport can cost up to four times as much. The Port of Alaska docks -- currently unable to survive another major earthquake -- represent the largest threat to Alaska's import supply chain.[31] These are very serious threats if for no other reason than food security. The Port sits in an active seismic zone and has already survived the highest recorded earthquake in North America. Significant seismic activity could interrupt the daily activities of the Port, which would paralyze most of the state, including strategic military facilities.[32]

In order to safeguard the state's import capacity, the existing docks need to be replaced with facilities able to withstand a significant seismic event. The redesigned

26 Knapp, G. (2016, March 30). Observations on Alaska's Economy and Economic Implications of Alaska's Fiscal Choices.
27 Environmental Protection Agency . (2016, June). ADAPTING TO CLIMATE CHANGE .
28 Chapin, F.S., S.F.Trainor, P. Cochran, H. Huntington, C. Markon, M. McCammon, A.D. McGuire, and M. Serreze. (2014)
29 World Economic Forum . (2016, January). Global Agenda Council on Risk & Resilience Insights .
30 Markon, C.J., Trainor, S.F., and Chapin, F.S., III, eds. (2012)The United States National Climate Assessment - Alaska Technical Regional Report: U.S. Geological Survey Circular 1379
31 CH2M Engineers . (2016, October 17). Anchorage Port Modernization Program Test Pile Program Report of Findings
32 American Society of Civil Engineers . (2017). Alaska Infrastructure Report Card.

facilities need to include contingency plans to be operational and able to support recovery services within days of an anticipated earthquake during any time of year.[33]

A natural disaster would threaten the survival and efficacy of information systems as well. Hindered access to data can alter emergency crew response times as well as impair the return to normalcy post-disaster. The process of disseminating critical information must be reinforced and protected by backup and support systems connected to different power sources. An open-data portal in the Cloud would ensure that vital information is unaffected by damage to physical infrastructure.[34]

Energy Resiliency

Anchorage's energy sector has taken and will continue to take action to be more resilient in the event of a major disruption. Significant new electric infrastructure, as well as natural gas storage, has been developed over the past six years, including new power plants for all three electric utilities that serve Anchorage. Chugach's primary power plant is now in Anchorage, rather than across the inlet at Beluga, making it more affordable to operate and maintain and faster to bring back online in the event of a major disruption, according to the utility. The Beluga plant serves as peaking and backup generation and its location outside of Anchorage and on top of the gas field make it a strategic asset in the event of a disaster that impacts the Anchorage bowl.

ML&P and Matanuska Electric Association, Inc. (MEA) also have new power plants that allow for extra generating capacity which supports resiliency. Many of ML&P and Chugach's older power plants are available in the event of emergency, as are the firm hydro resources. The non-firm wind resources may or may not be able to provide power in the event of an emergency, depending on the existing generation resources' ability to integrate the variable wind effectively. Anchorage is connected to generating facilities in Fairbanks, Mat-Su, Eklutna, Seward and Homer through transmission interties south and north. In the event of a generation disruption in the Anchorage bowl, these additional assets could be used.

Chugach, ML&P and MEA are working together to pool their electric generation facilities in support of economic dispatch in which the most efficient generation units are operated to meet the daily and seasonally changing load requirements. This "power pooling" adds to both the economic development and resiliency of the community by reducing costs and coordinating the dispatch of all facilities, which allows for faster recovery in the event that generation units are out of service, according to Chugach.

The development of Cook Inlet Natural Gas Storage Alaska (CINGSA) also adds to the resiliency of the community by allowing for gas storage on the Kenai Peninsula.

Another development that contributes to the resiliency of Anchorage's energy sector is an increase in the number of homeowners and businesses that invest in backup power and/or heat generation. Likely the most common backup is in the form of a fuel-powered generator. Additionally, an increasing number of solar photovoltaics (PV) are being installed in Anchorage as the cost to install continues to decrease. While most solar PV systems are installed to deliver power to the building and grid only when grid power is present, some building owners are installing energy storage systems and control equipment to separate from the grid and provide power to the building in the absence of grid power. Likely due to the system cost, these more elaborate systems that include the ability to generate during an outage are much less common today. A solar PV system will produce power when the sun is shining, therefore limiting their effectiveness during winter, at night and on cloudy days.

A new trend in home battery storage may increase homeowners' ability to self-power for a period of hours to a few days in the event of a power outage. Examples of these battery systems include Tesla's Powerwall and Schneider Electric's EcoBlade.

Pandemic Resiliency

Epidemics and pandemics not only threaten the lives of thousands of people, but they also wreak havoc on the economy. Public health officials with the Center for Disease Control estimate that a major pandemic could cripple 60 percent of a workforce, shutting

33 CH2M Engineers . (2016, October 17). Anchorage Port Modernization Program Test Pile Program Report of Findings

34 Links, J., M.D. (2017, August 7). Predicting community resilience and recovery after a disaster.

down basic services and threatening the supply of necessary goods. A new strain of the influenza virus surfaces every 1-2 years and historically a pandemic has occurred every 10-50 years.[35] According to epidemiologists, a new pandemic is inevitable and the interconnected nature of global transportation will make managing it a challenge. Not only would a pandemic spread more quickly now than it would have in the past, but the process of identifying the virus or bacteria and developing a treatment would be infinitely more complicated.

The Municipality's Comprehensive Emergency Operations Plan predicts that a pandemic, infectious disease or contamination of food or water would cause the closure of critical facilities for more than 30 days.[36] Recognizing that Anchorage's population is susceptible to outbreaks and epidemics occurring across the globe due to its location and use as a global logistics and passenger hub for Alaska's transportation and tourism sectors, the municipality must be prepared with action plans and mitigation measures in the event of a global pandemic crisis. Access to clean water, food and medical supplies must be a paramount component of the pandemic resiliency strategy. There must be coordination between local law enforcement, hospitals and the CDC for contingency plans regarding a potential quarantine situation.

Economic Resiliency

Economic resiliency is the ability to prevent, withstand and quickly recover from acute shocks such as economic downturns or other significant events in the state, national or international economies, downturns in particular industries constituting a critical component of the region's economic activity and/or other external shocks (a natural or man-made disaster, closure of a military base, exit of a major employer, the impacts of climate change, etc.). Over the past century, Anchorage experienced acute shocks from events such as the 1964 Good Friday earthquake or the precipitous drop in oil prices that led to the recession of the 1980s. Economic resilience, however, should go beyond simply recovering from shocks; economic resilience for Anchorage will empower our community to recover, withstand and avoid acute shocks. Anchorage must develop the capacity to anticipate risk -- whether it be sustained low oil prices or a fluctuating tourism industry -- then evaluate its economic impact and build responsive capacity drawing upon public and private resources. Each of the goals and objectives in this strategy serves to increase Anchorage's economic resiliency, both in instances of acute shocks and overall long-term sustainability.

Implementation Actions

- Encourage the use of pollution control equipment, energy-efficient building designs, waste reduction systems and environmental remediation measures
- Ensure critical transportation infrastructure is repaired/replaced and is able to better withstand a natural disaster
- Upgrade and reinforce existing utility infrastructure to better withstand a natural disaster
- Ensure communication and coordination between key entities in the event of a crisis
- Seek opportunities to maintain, update, or improve local plans

Potential Community Partners:

Federal Emergency Management Agency, Municipality of Anchorage, Center for Disease Control, Port of Alaska, Joint Base Elmendorf-Richardson, Alaska International Airport System

Potential Resources:

Municipality of Anchorage, FEMA, State of Alaska

35 World Bank. (2017, July 18). Pandemic Preparedness and Health Systems Strengthening.

36 Municipality of Anchorage . (2015). Comprehensive Emergency Operations Plan

Evaluation Framework

The evaluation framework of this document is meant to act as a compass to align all of the goals, objectives and action items to accomplish a larger vision improving the Municipality of Anchorage as a whole. The following metrics are overarching goals -- the cumulative results of the objectives and action items listed above.

- 5,000 jobs created in the Municipality of Anchorage by 2023
- 100 new building permits approved throughout the municipality by 2023
- Decrease net outflow of workforce and residents by 1,000 people by 2023
- Increase net inflow of workforce and residents by 1,000 people by 2023
- Increase annual per capita income by $5,000 by 2023
- Increase of GDP per capita from $69,387 to $75,000 by 2023
- $100 million of new private investment dollars in the Municipality of Anchorage by 2023
- Action Plan for 2018

Overview of goals:

Urban Revitalization: A vibrant urban center attracts workforce, encourages creativity, improves quality of life and incentivizes further investment in the municipality. Through improved community safety, beautification efforts and recreation expansion, this strategy seeks to put Anchorage's urban amenities on par with the municipality's natural beauty.

Infrastructure and Housing: Infrastructure upgrades will ensure redundancies in critical systems to protect the municipality in the event of a natural disaster and improve the efficiency of everyday operations. By increasing options for attractive and affordable housing and mixed-use developments, this strategy will help develop vibrant, well-rounded communities and walkable neighborhoods.

Industry Diversification: In order to increase economic resiliency, Anchorage needs to diversify its economic base by focusing resources on basic industries with high growth potential. Expanding into new industries will create a diverse range of new jobs and enable the economy to better withstand acute shocks and be more self-sustaining in the long-term.

Education and Workforce Development: This strategy seeks to increase and diversify opportunities for education and workforce development for citizens of all ages and backgrounds. This will further the success of industry diversification as well as decrease student outflow and create economic opportunities for underserved populations and low-income neighborhoods.

The goals listed above are long-term goals meant to strategically guide Anchorage towards becoming a more vibrant, modernized and economically independent city. The objectives listed are intended to identify specific projects with meaningful impact, ultimately resulting in a stronger Municipality. Many of the strategies will require longer than five years to complete and thus this comprehensive strategy will be amended each year as the project scoping progresses and details like timeline, estimated costs and economic impacts become apparent. The following timeline lays out the focus for 2018 and expected accomplishments over the next calendar year.

Timeline

These are the steps AEDC will take throughout 2018 to execute the goals of the CEDS:

- Submit final CEDS document to the Mayor's Office and Anchorage Assembly for approval and adoption by March 2017.
- Build networks and establish relationships with community partners relevant to each objective; these partners will be project champions by September 2017.
- Work with project champions to narrow project focus to establish concrete metrics by December 2017.
- Work with project champions to identify funding opportunities by December 2017.
- Assist project champions with ongoing coordination of meetings and committee formation as needed on an ongoing basis.
- Check in with project champions regularly to ensure projects are progressing on an ongoing basis.
- By the end of 2018, AEDC will update the CEDS document to reflect our confirmed community partners and project champions, cost estimates, timelines and success metrics.

APPENDIX

Definitions:

Race: A race is a group of people with a common physical feature or features. Genetic differences within any designated racial group are often greater than differences between racial groups. (Cosmides, 2003)

Ethnicity: Ethnicity denotes groups, such as Irish, Fijian, or Sioux, etc. that share a common identity-based ancestry, language, or culture. It is often based on religion, beliefs and customs as well as memories of migration or colonization. Ethnicity is a state of belonging to a social group that has a common national or cultural tradition. (Cornell and Hartmann, 2007)

Tech-transfer: Technology transfer is the process by which technology or knowledge developed in one place or for one purpose is applied and exploited in another place for some other purpose. (Universal Technical Resource)

Innovation District: Dense enclaves that merge the innovation and employment potential of research-oriented anchor institutions, high-growth firms, and tech and creative start-ups in well-designed, amenity-rich residential and commercial environments. Innovation districts facilitate the creation and commercialization of new ideas and support metropolitan economies by growing jobs in ways that leverage their distinct economic attributes. These districts build on and revalue the intrinsic qualities of cities: proximity, density, authenticity, and vibrant places. Given the proximity of many districts to low-income neighborhoods and the large number of sub-baccalaureate jobs many provide, their intentional development can be a tool to help connect disadvantaged populations to employment and educational opportunities. (Brookings Institute)

Basic industry: Industrial sector which exports all or nearly all of its production. Basic industries, as a result of their foreign exchange earnings, create new incomes and additional spending power in their country's economy. Therefore any drastic or inordinate change in a basic industry's output or earnings will produce correspondingly widespread and deep effect on the entire local economy. (Business Dictionary)
Support/non-basic industry: Industrial sector that provides support services to a basic industry. The non-basic sector is composed of firms that largely depend upon local business conditions. Changes in the non-basic or support industries will only require a readjustment of incomes and spending patterns, and the country's overall economic condition will remain largely unaffected. (Business Dictionary)

Public-private partnership: The PPP Knowledge Lab defines a PPP as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance". (World Bank)

Open-data: Data that can be freely used, re-used and redistributed by anyone. The data must be available at no more than a reasonable reproduction cost, preferably by downloading over the internet. The data must also be available in a convenient and modifiable form. The data must be provided under terms that permit re-use and redistribution including the intermixing with other datasets. There must be universal participation with no discrimination against any persons or groups. (Open Knowledge International)

REFERENCES

American Society of Civil Engineers . (2017). Alaska Infrastructure Report Card. Retrieved from http://www.infrastructurereportcard.org/state-item/alaska/

Brookings Institute. (2017, June 26). Advancing a new wave of urban competitiveness: The role of mayors in the rise of innovation districts. Retrieved from https://www.brookings.edu/research/advancing-a-new-wave-of-urban-competitiveness/

Business Dictionary (n.d.) What is basic industry? definition and meaning. Retrieved August 14, 2017, from http://www.businessdictionary.com/definition/basic-industry.html

CH2M Engineers . (2016, October 17). Anchorage Port Modernization Program Test Pile Program Report of Findings . Retrieved from https://www.portofanc.com/wp-content/uploads/APMP-TPP_CH2M-Report-of-Findings.pdf

Chapin, F.S., S.F.Trainor, P. Cochran, H. Huntington, C. Markon, M. McCammon, A.D. McGuire, and M. Serreze. (2014). Ch. 22: Alaska. Climate Change Impacts in the

United States: The Third National Climate Assessment. Retrieved from http://nca2014.globalchange.gov/report/regions/alaska#intro-section

Chmura Economics and Analytics. (2017). [Anchorage Demographics]. Unpublished raw data.

CIRI. (n.d.). Fire Island Wind Project . Retrieved from http://fireislandwind.com/

City Data . (2015). Crime rate in Anchorage, Alaska (AK). Retrieved from http://www.city-data.com/crime/crime-Anchorage-Alaska.html

ConocoPhillips. (2013, June). Beluga River Gas Field. Retrieved from http://alaska.conocophillips.com/who-we-are/alaska-operations/cook-inlet/Pages/beluga-river-gas-field.aspx

Cornell, S., & Hartmann, D. (2007). Ethnicity and Race: Making Identities in a Changing World. Thousand Oaks: Pine Forge Press.

Cosmides, L., Tooby, J., & Kurzban, R. (2003). Perceptions of Race. TRENDS in Cognitive Science, 4 (7), 173-179.

Development Counsellors International . (2017). Talent Wars. Retrieved from http://aboutdci.com/talent-attraction-research-2017/

Environmental Protection Agency . (2016, June). ADAPTING TO CLIMATE CHANGE . Retrieved from https://www.epa.gov/sites/production/files/2016-07/documents/alaska_fact_sheet.pdf

Fried , N. (2017, January). Economic Forecast for 2017 (Rep. No. 1). Retrieved http://labor.alaska.gov/trends/jan17.pdf

Governing . (2016, May 31). Military Active-Duty Personnel, Civilians by State. Retrieved from http://www.governing.com/gov-data/military-civilian-active-duty-employee-workforce-numbers-by-state.html

Guettabi, M. (2016, May 11). An Assessment of Alaska's Economy. Retrieved from http://www.iser.uaa.alaska.edu/Publications/presentations/2016_05_11-AKEconomyAssessmentWhatWeKnow.pdf

Guettabi, M. (2016, November). What's Happened to the Alaska Economy Since Oil Prices Dropped? . Retrieved from http://www.iser.uaa.alaska.edu/Publications/2016_11-WhatHappenedtotheAKEconomySinceOilPricesDropped.pdf

Guettabi, M. (2017, January 18). What do we know about the Alaska economy and where is it heading? Retrieved from http://www.iser.uaa.alaska.edu/Publications/presentations/2017_01_18-WhatDoWeKnowAKEconomy.pdf

Hobson, M. (2016, May 9). Economist explains bleak economic realities of oil crash. E&E News. Retrieved from https://www.eenews.net/stories/1060036804 Institute of Education Sciences . (n.d.). National Center for Education Statistics Data Lab. Retrieved from https://nces.ed.gov/datalab/

International Bank for Reconstruction and Development. (2015). Economic Diversification and Nonextractive Growth (pp. 28-41, Rep.). Washington DC: The World Bank. Retrieved from https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ccpe-synthesis_full.pdf.

Katz, B., & Wagner, J. (2016, September 28). The Rise of Innovation Districts. Retrieved from https://www.brookings.edu/essay/rise-of-innovation-districts/

Kelly , D. (2016, July 8). Anchorage doesn't have enough homes to meet demand. Retrieved from https://www.adn.com/economy/article/anchorage-doesnt-have-enough-homes-meet-demand/2014/03/09/

Knapp, G. (2016, March 30). Observations on Alaska's Economy and Economic Implications of Alaska's Fiscal Choices. Retrieved from http://www.iser.uaa.alaska.edu/Publications/presentations/2016_03_30-ObservationsOnAlaskasEconomy.pdf

Kusisto, L. (2017, May 22). Why Millennials Are (Partly) to Blame for the Housing Shortage. Retrieved from https://www.wsj.com/articles/why-millennials-are-partly-to-blame-for-the-housing-shortage-1495445403

Lee, O., Payne, J., Lassuy, D., & Vargas, J. (2015). Oil and Gas Revenues | Alaska State Economy

(Rep.). Retrieved http://www.northslope.org/media/doc/2014/Nov/Alaska_Revenue_and_State_Economy.pdf

Links, J., M.D. (2017, August 7). Predicting community resilience and recovery after a disaster. Retrieved from https://blogs.cdc.gov/publichealthmatters/2017/08/predicting-community-resilience-and-recovery-after-a-disaster/

Markon, C.J., Trainor, S.F., and Chapin, F.S., III, eds. (2012)The United States National Climate Assessment - Alaska Technical Regional Report: U.S. Geological Survey Circular 1379. Retrieved from https://pubs.usgs.gov/circ/1379/pdf/circ1379.pdf

McDowell Group. (2017). The Economic Value of Alaska's Seafood Industry (Rep.). Retrieved from http://www.mcdowellgroup.net/wp-content/uploads/2017/10/ak-seadfood-impacts-sep2017-final-digital-copy.pdf

McDowell Group. (2017, May). The Role of the Oil and Gas Industry in Alaska's Economy (Rep.). Retrieved from https://www.aoga.org/sites/default/files/final_mcdowell_group_aoga_report_8.16.17.pdf

Municipality of Anchorage . (2015). Comprehensive Emergency Operations Plan. Retrieved from http://www.muni.org/Departments/OEM/Plans/Documents/2015_CEOP%20protected.pdf

Municipality of Anchorage . (2015, March 10). Infrastructure (Rep.). Retrieved from http://www.muni.org/Departments/OCPD/Planning/Projects/WestAnch/Documents/D.Infrastructure-WestAnchorageProfile_15Mar10.pdf

Open Knowledge International. (n.d.). What is Open Data . Retrieved from http://opendatahandbook.org/guide/en/what-is-open-data/

Planning and Zoning Commision. (2015, October). UMED District Plan. Retrieved from http://publicdocs.muni.org/sirepub/cache/2/

State of Alaska Department of Natural Resources. (Sept. 2015). Retrieved from http://dog.dnr.alaska.gov/Documents/ResourceEvaluation/2015CookInletGasReserves.pdf