

# Anchorage Industrial Land Assessment Update: Volume I

## Employment Land Need & Policy Recommendations

Municipality of Anchorage

Project No. 2130406000



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## Acronyms

AEDC	Anchorage Economic Development Corporation
ANS	Alaska North Slope
BEA	United States Bureau of Economic Analysis
CIRI	Cook Inlet Regional Inc.
DOL&WD	Alaska Department of Labor and Workforce Development
FAR	Floor Area Ratio
GDP	Gross Domestic Product
HLB	Heritage Land Bank
ISER	University of Alaska Anchorage Institute for Social & Economic Research
KAC	Knik Arm Crossing
Mat-Su	Matanuska-Susitna
MOA	Municipality of Anchorage
MSB	Matanuska-Susitna Borough
MSA	Metropolitan Statistical Area. The MSA is a combination of the Municipality of Anchorage (MOA) and the Matanuska-Susitna Borough (MSB).
NAICS	North American Industry Classification System
PLI	Public Lands & Institutions
PDR	Production-Distribution-Repair
SF	Square Feet
TWU	Transportation, Warehousing & Utilities
QCEW	Quarterly Census of Employment and Wages
WTI	West Texas Intermediate



# Executive Summary

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## 1.1 Introduction & Purpose

The Municipality of Anchorage (MOA) retained Cardno, Inc. to provide an updated assessment of industrial land sufficiency within the Anchorage Bowl and Chugiak-Eagle River areas. This report is the first of three volumes intended as an update to the 2009 Anchorage Industrial Land Assessment commissioned by the Municipality and the Anchorage Economic Development Corporation (AEDC). That report, published in 2009, is of sufficient vintage that revised analysis was deemed warranted given:

- The events of the Great Recession nationally and within the Anchorage MSA passed within the mean time;
- Assessments of both residential land and commercial land within the MOA were completed, documenting likely shortfalls of land capacity for both major uses;
- Significant differences between economic analysis and forecasting in the 2009 industrial assessment and other studies commissioned by the MOA and other regional entities;
- Progress on Knik Arm Crossing project planning and analysis;
- Legalization of recreational marijuana by Alaska voters in 2014 with uncertain industry impacts to industrial space usage and need in Anchorage; and
- Desire for a highly detailed industrial land supply assessment by or in coordination with Municipality of Anchorage Planning Division.

The MOA recognizes the importance of its industrial land inventory as a key asset in maintaining, growing, and diversifying the regional economy, particularly in light of turbulence in the oil industry. From an economic development and a land use planning perspective, particularly Anchorage as the economic hub of the state and its sizeable natural resource-based economy, industrial users are an essential core of the economy.

Vendors, service providers, administration, and customers of Anchorage industrial users drive much of the need for office uses in Anchorage. Industrial sectors also then ultimately drive much of the residential need to house the Anchorage industrial workforce and the workforce of other sectors such as retail with ties to or benefit from the health of industrial sector employers.

The specific purpose of the report, Volume I, is the following:

- Document the economic performance of the MOA, the Anchorage MSA, the State of Alaska, and the U.S. during and since the Great Recession as context for understanding updated industrial land demand in the future;
- Document the likely growth path for the local economic sectors concentrated in the MOA assuming contrasting scenarios of whether or not a Knik Arm Crossing is built;
- Identify resulting, updated industrial land demand and site needs to ensure adequate site and space capacity for growth over a twenty-year land-use planning period;

- Reconcile updated industrial land and site supply with expected industrial land needs to understand the true adequacy of industrial land capacity specifically for the MOA over the planning period; and
- Recommend policy options for supporting industrial economic development and achieving an adequate supply of industrial land within the Anchorage Bowl and the Chugiak-Eagle River areas of the Municipality.

This document addresses all of the above issues in coordination with Municipality of Anchorage Planning Division efforts to comprehensively inventory MOA industrial lands and uses. The results of that effort, *Volume II: Industrial Lands Inventory*, are utilized in this report. The reader is directed to that detailed analysis document for further reference of derivation of supply capacity in the MOA.

Additional land use planning context for this Industrial Land Assessment Update is also found in Volume II, Section 2, *Context*. The reader may specifically refer to “Why an industrial land inventory” subsection discussion on pages 11-16 of that volume.

This project also convened an industrial land assessment advisory committee, comprising members with expert knowledge of industrial facility needs, real estate, and planning and development (see page ii.). This technical advisory committee provided information and feedback at four meetings, regarding local industry trends and site needs; draft demand forecasts; land supply research methods, study areas, and acreage estimates; and the suggested policy options which appear in this report. Minutes from advisory committee meetings are included in Volume III of the Anchorage Industrial Land Assessment Update.

This study also benefited from hundreds of interactions with business people during the inventory, and from consultations with multiple public facility agencies and land holding entities including JBER, Eklutna, Inc., CIRI, and HLB, among others.

Finally, during late stages of the study process, crude oil prices experienced dramatic decreases well below pricing assumptions utilized by the State of Alaska for fiscal planning. Dramatically revised State revenue forecasting and great uncertainty about economic fallout both made it necessary to add a “Worst-Case” economic growth scenario for industrial land need analysis purposes.

## **1.2 Study Components**

To accomplish the above objectives of this analysis, analytical steps found in this document comprise the following:

- General Economic Trends Update
- Land Demand Forecast
- Land Need Reconciliation

*Volume II: Industrial Lands Inventory* comprises of a detailed Industrial Lands Inventory conducted by Municipality of Anchorage staff. The Industrial Lands Inventory is a separate but related volume to this document.

Volume III of the Anchorage Industrial Land Needs Update comprises a detailed land use database dictionary related to the Industrial Land Needs Update effort.

### **1.3 Study Area & Industrial Land Inventory**

The Industrial Lands Assessment encompasses the existing and potential future industrial land base of the Municipality, including vacant lands and lands currently in active use. The study area extent includes the industrial zoning districts, areas designated for industrial use in the Comprehensive Plan, non-industrial zoning district areas that have a concentration of industrial uses, and, lastly, undeveloped landholdings such as in the Eklutna vicinity which have been the subject of ongoing speculation about their future industrial potential. Its study area includes the Anchorage Bowl and Chugiak-Eagle River, as well Fire Island and Joint Base Elmendorf-Richardson. *Volume II: Industrial Lands Inventory* comprises the detailed study of the status of these lands, and informs this volume of the Industrial Lands Assessment.

### **1.4 Summary of Key Conclusions**

The following is a targeted summary of findings by industrial land topic focus.

#### How Much Industrial Land Will Be Utilized By MOA Economic Growth Through 2035?

- Reasonable estimates of normal economic growth and industrial land demand through 2035 range between 552 acres and 582 acres. Under the “Worst-Case” Scenario, the MOA would only see net new industrial land demand of less than 100 acres, mostly from sectors such as Education & Health Care Services and Retail not generally associated with traditional industrial activities.
- Assuming the Anchorage marijuana and marijuana-related industry proportionately resembles Denver, Colorado industry, an additional 42 gross acres to 54 gross acres will be needed to accommodate industry operations and/or other sector growth that would compete for limited space with the industry.

#### How Much Industrial Land is Available for MOA Area Economic Growth Through 2035?

- Greater MOA industrial land supply “High-Range” estimate is 419.0 acres of land in I-zoned districts and 347.5 additional acres zoned Public Lands & Institutions (PLI), Planned Community (PC), and Transition (T) districts. Under even more optimistic assumptions, Greater MOA industrial land supply is estimated at 988.5 acres including both land zoned for industrial use and PLI and T district lands.

#### Does the Greater MOA have sufficient industrial-zoned land to accommodate expected growth?

- Results of the analysis indicate that Anchorage Bowl and Chugiak-Eagle River combined supply of existing industrial land does not ensure sufficient capacity to accommodate employment gains under either Baseline growth scenario. 419.0 acres of industrial-zoned land – the “High-Range Estimate” – falls short of Baseline scenario demand by 109.6 to 134.4 acres through 2035 including current estimates of future marijuana-related industry growth.

**Figure ES-1 Anchorage Bowl & Chugiak-Eagle River Industrial Land Supply & Demand Reconciliation**

Growth Scenario	Industrial Land Supply Assumptions (Acres)				Industrial Land Demand & Net Surplus/(Deficit) (Acres)						
	I-1	+	I-2	=	Industrial Districts	All Districts	- PDR Sector Demand*	= PDR Net Supply	- Non-PDR Demand	= Total Net Supply	I-Zones Net Supply
<b>Continued Non-Industrial Use of Industrial Land</b>											
Baseline No Bridge	242.4		176.4	=	419.0	766.5	319.2	447.3	234.2	213.1	(134.4)
Baseline Bridge	242.4		176.4	=	419.0	766.5	304.3	462.2	224.4	237.9	(109.6)
Low Growth Bridge	242.4		176.4	=	419.0	766.5	45.4	721.1	83.1	637.9	290.4
<b>Only Industrial Uses on Industrial Land</b>											
Baseline No Bridge	348.4		235.1	=	583.6	988.5	319.2	669.3	234.2	435.1	30.2
Baseline Bridge	348.4		235.1	=	583.6	988.5	304.3	684.2	224.4	459.9	55.0
Low Growth Bridge	348.4		235.1	=	583.6	988.5	45.4	943.1	83.1	859.9	455.0

\*Note: Includes estimated, average marijuana industry-driven land demand of 47.6 acres. Excludes Airport, Railroad, & Marine Transportation land demand that would site on publicly-owned lands already accounted.

\*\*Note: Land under “All Districts” designation includes I-Zone lands as well as lands identified by the Municipality potentially available for industrial use but currently zoned PLI, T, and PC. “Total Net Supply” similarly denotes 20-year industrial land supply, including both I-Zone lands as well as lands presently zoned PLI, T, and PC, net of demand.

Source: Municipality of Anchorage and Cardno, Inc.

- Alternatively, aggressively assuming non-industrial utilization of industrial land is completely restricted in the future, the Anchorage Bowl and Chugiak-Eagle River combined inventory of 583.6 acres meets estimated twenty-year need with remaining capacity at 30.2 acres to 55.0 acres in 2035.
- Under the “Worst-Case” economic scenario, the addition of Chugiak-Eagle River industrial supply only further ensures sufficient capacity for meager industrial land need growth through 2035. Surplus capacity after twenty years is estimated at 290.0 acres to 455.0 acres of industrial-zoned land.

Under what economic scenarios if any is the current inventory of industrially-zoned land sufficient in the Greater MOA?

- The Anchorage Bowl and Chugiak-Eagle River combined have sufficient existing industrial-zoned under the “Worst Case” economic scenario. There is only sufficient industrial-zoned land in the MOA under Baseline growth scenarios if future non-industrial uses on industrial land are restricted.

Under what industrial supply availability assumptions if any does the Greater MOA study area have sufficient industrial land?

- The addition of PLI, PC, and T District lands in Chugiak-Eagle River does materially change industrial land insufficiency conclusions compared to Anchorage Bowl inventory alone. Assuming the lower capacity numbers – still considered “High-Range” overall – total industrial land supply of 766.5 acres is sufficient to meet total Baseline demand. Assuming

the most optimistic availability of land, capacity is certainly sufficient by a factor of 435.1 to 459.9 acres.

Does the Greater MOA study area have sufficient industrial land supply to accommodate core, Production-Distribution-Repair “PDR” employment growth?

- Construction, Mining, Manufacturing, Utilities, and Transportation are among those economic sectors classified as “Production-Distribution-Repair” or “PDR” sectors. These industries are the most typical industrial land users for essential business functions and employment.<sup>3</sup>
- Marijuana-related industry would also be classified as a “PDR” sector.
- The Anchorage Bowl and Chugiak-Eagle River combined have sufficient *total* industrial land capacity and industrial-zoned land alone to accommodate only “PDR” employment growth demand under all scenarios in this analysis.

In other words, Anchorage Bowl and Chugiak-Eagle River total supply capacity combined and estimated as described can be expected to quantitatively meet 20-year land demand under any economic scenario. Industrial-zoned land alone, however, does not sufficiently meet industrial land demand if non-industrial uses are continued to be allowed on industrial land at current rates. Additional land zoned PLI, PC and T would be needed to meet total need.

It should also be noted that most of the industrial land supply in Eagle River, Chugiak, Birchwood and Eklutna areas is not serviced by urban water or wastewater utilities. This reality would need to be remedied for some industrial uses to be considered feasible to locate there in the future. Urban services and other factors such as distance from regional transportation hubs (airport, rail, port), existing industrial clusters, and the largest market in the Bowl, to some degree diminish the Chugiak-Eagle River lands as a suitable replacement for Anchorage Bowl industrial lands, at least during this twenty-year planning horizon.

Key Municipality of Anchorage Policy Implications

The primary finding of this Industrial Land Assessment Update is that the current inventory of industrially-zoned land in the Municipality of Anchorage is insufficient to accommodate the next twenty years of economic growth. Furthermore, industrial land supply within the MOA faces market pressures to convert to other uses due to land scarcity for most other major uses, documented by other recent Municipality land use studies.

Municipal policies can be studied and adopted, however, that can in great measure remedy these and other industrial land inventory issues identified during the course of this study process.

Land supply and location, via primary land use regulatory authority at the Municipality, will of course be the most powerful tools available in achieving these goals. And as the results of *Volume II: Industrial Lands Inventory* indicate, the Municipality has some locational and supply quantity options between the Anchorage Bowl and the Chugiak-Eagle River geographies of policy study area.

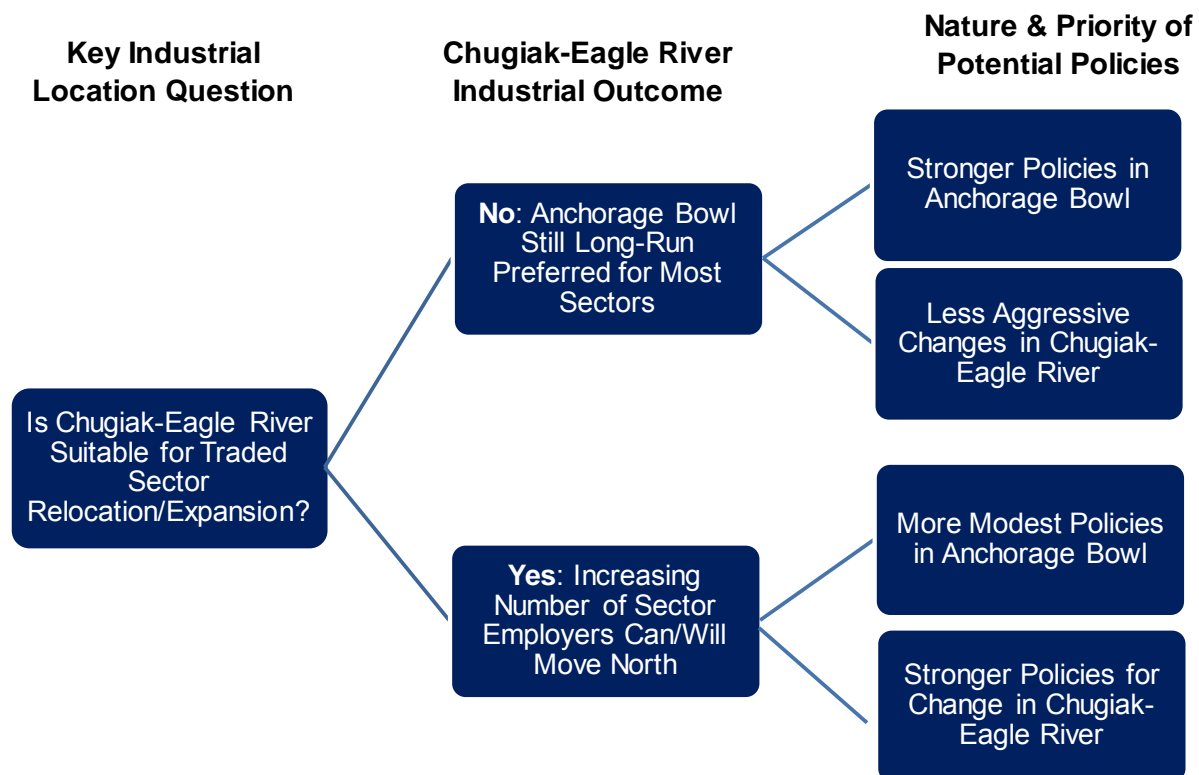
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<sup>3</sup> Additional definition and discussion of “PDR” economic sectors can be found in Section 3.2.3 of this volume.

The central question, therefore, in determining the best policies for future industrial land supply provision in the Municipality is the extent to which industrial development will continue to prefer the Anchorage Bowl and to what extent future industrial development growth will find Chugiak-Eagle River as the preferred location.

Figure ES-2 displays a schematic that illustrates this question of where industrial development will prefer to locate and how those preferences will affect the nature of types of policies appropriate for the Municipality to consider.

**Figure ES-2 Anchorage Bowl & Chugiak-Eagle River Industrial Location Preference & Policy**



The study process, including input and discussion from the Technical Advisory Committee, identified that the Anchorage Bowl will be the preferred industrial business location over the next twenty years and that policy direction as posed in Figure ES-2 should have the following resulting focus:

- Stronger policies for land use inventory, zoning, and economic development priorities within the Anchorage Bowl; and
- Less aggressive changes to policies regarding land use inventory, zoning, and economic development in Chugiak-Eagle River.

Resulting, recommended policies follow this direction and target both problems of declining industrial land supply as well as growing demand and pricing pressure from non-industrial uses. Concerted and coordinated implementation of policies addressing both limited industrial land supply and non-industrial demand pressure is highly recommended.

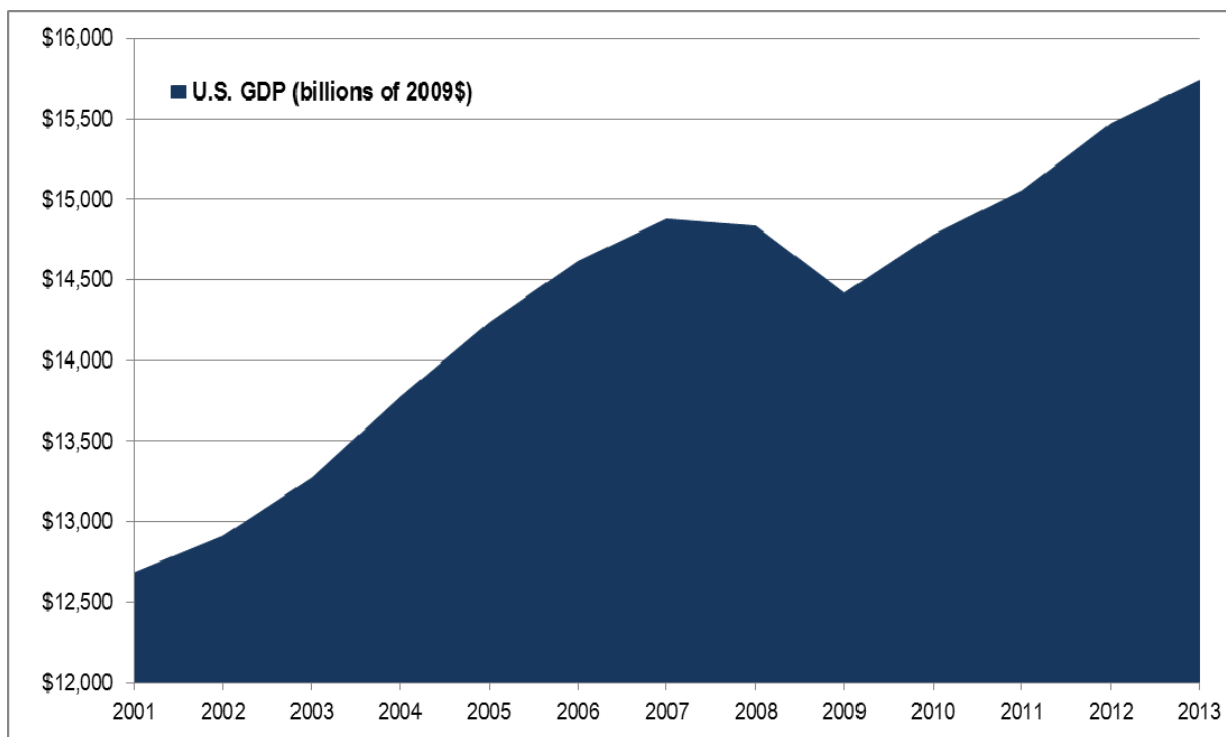
## 2 General Economic Trends Update

This section provides an update of key economic variables for the United States, the Anchorage MSA, and the Municipality of Anchorage economies since 2008. Previous forecasting of Anchorage industrial land need was completed under much economic uncertainty during the early stages of the severe recession.

### 2.1 U.S. Economic Trends

The national Great Recession, which began in earnest with severe turbulence and downturn in the Financial Services industry, is officially over. Although severe with many lingering effects in the national housing market and the national labor market, the U.S. economy has recorded three straight years of overall growth. As of 2011, U.S. real Gross Domestic Product (GDP) had returned to its pre-Great Recession peak that occurred in 2007. Figure 2-1 provides a graphic depiction of real, inflation-adjusted U.S. GDP trend since 2001.

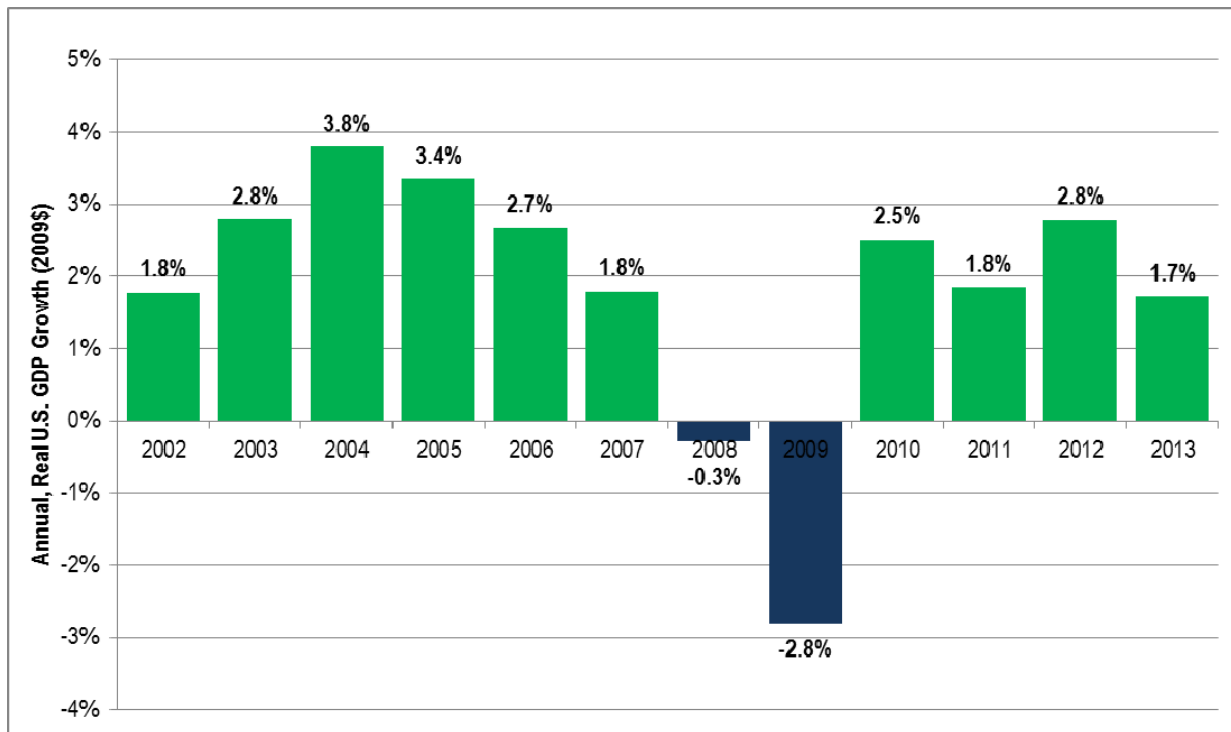
**Figure 2-1 U.S. Real Gross Domestic Product (GDP) Trend, 2001-2012**



SOURCE: U.S. Department of Commerce

At the worst of the Great Recession, the national economy withered by 2.8% in 2009. In 2008, when the financial industry seized into free-fall and national economic emergency, there was an overall 0.3% economic decline. The severe downturn and financial industry collapse occurred later in 2008 with meager growth and increasing downward pressure on the economy throughout the year. Figure 2-2 provides comparisons of annual, real U.S. GDP growth rates since 2002.

**Figure 2-2 Annual U.S. Real Gross Domestic Product (GDP) Growth, 2002-2012**



SOURCE: U.S. Department of Commerce

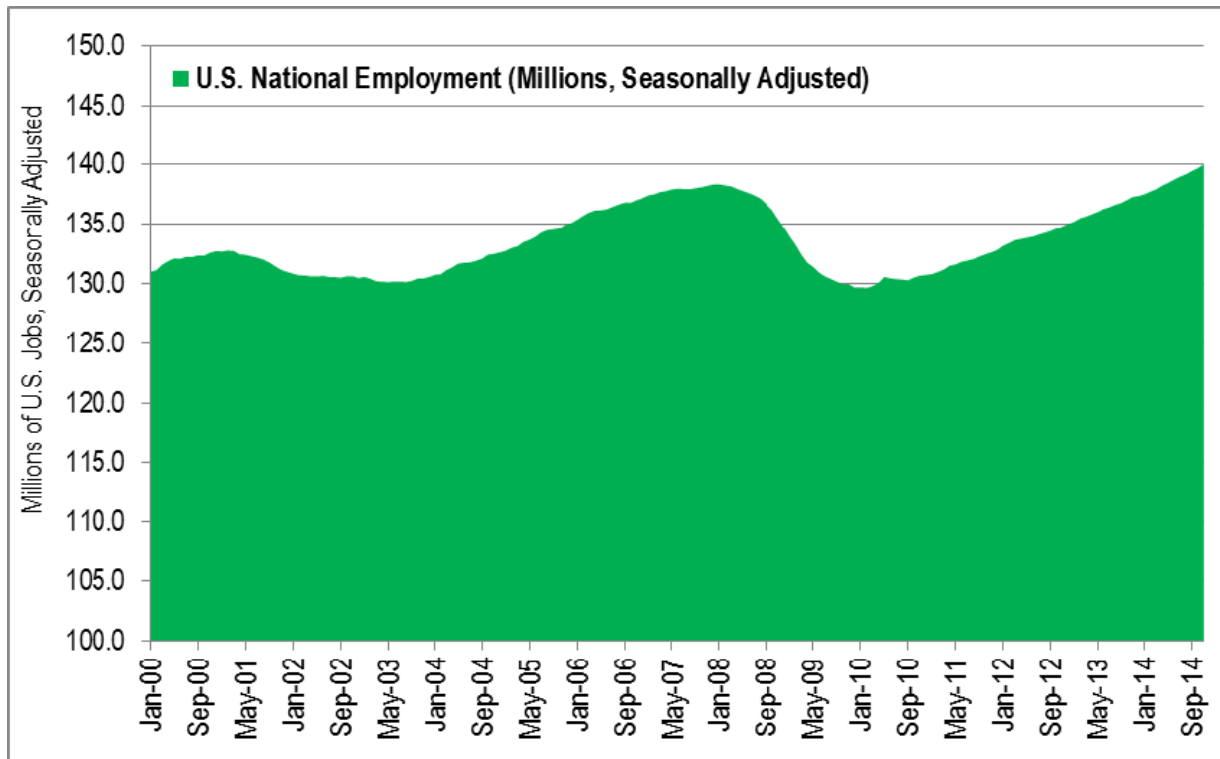
Preliminary data for 2014 indicates that the national economic recovery is technically entering its sixth year as the rebound started in later 2009. Significant economic turbulence due to U.S. federal budget politics and uncertainty, as well as international debt crises in Europe as part of broader international financial sector troubles, have been sizeable constraining factors on faster recovery.

Slow recovery has also occurred in the national housing market, with many metro areas only recently seeing stable housing values, increased access to credit, sales volumes, and resulting housing starts. Some economists credit the federal “Debt Ceiling” political showdown and turmoil created by federal debt limit uncertainty as greatly extending weakness in the national recovery as evidenced by the slowdown in 2011.

The remaining legacy of the Great Recession has been lackluster recovery of the U.S. labor market. As Figure 2-3 illustrates, despite national production already exceeding pre-Great Recession levels, U.S. employment has continued to lag behind. Only in January of 2014 did employment finally return to its pre-Great Recession peak recorded in March of 2008. Six years of anemic hiring by U.S. businesses, who instead have invested in productivity gains rather than hiring, have resulted in extended unemployment benefit expenses by state governments and long-term drag on public sector fiscal recovery.



**Figure 2-3 Monthly U.S. Employment Trend, 2002-2014 (Seasonally Adjusted)**

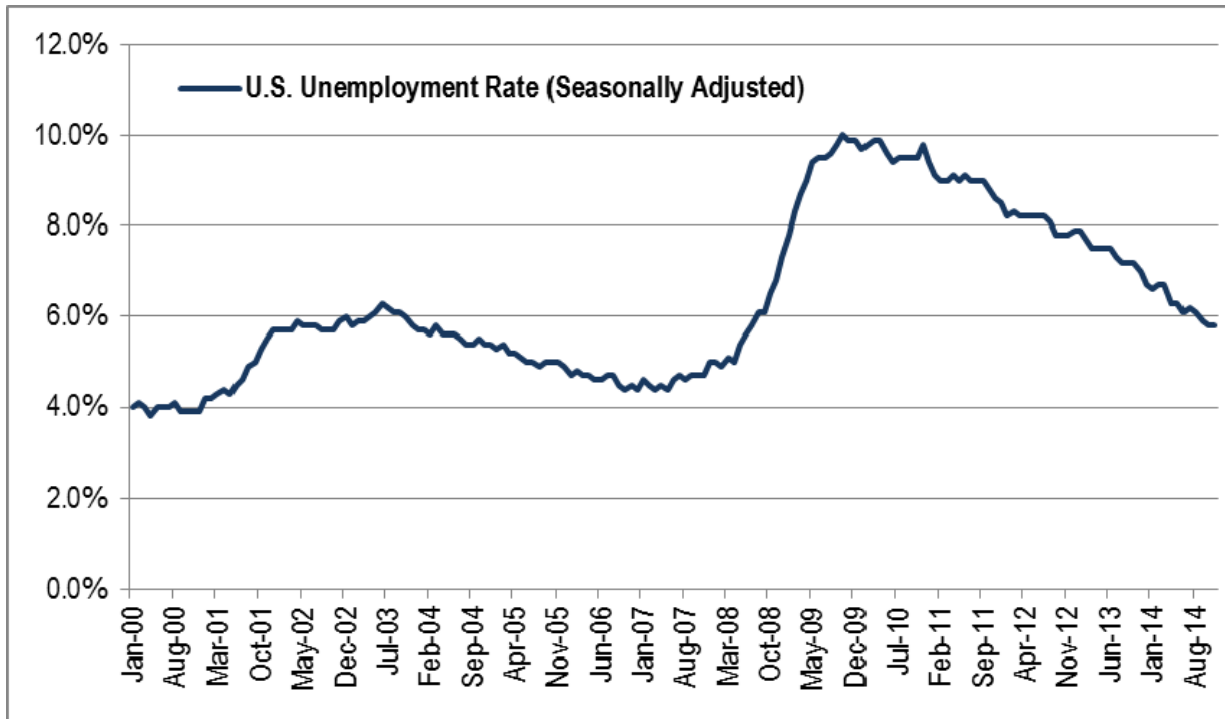


SOURCE: U.S. Bureau of Labor Statistics

Figure 2-4 displays the U.S. jobless rate from January 2000 to August 2014. At 6.5% in January of 2014, the national unemployment rate continues to exceed its peak level of 6.1% during the post-9/11 recession. According to the U.S. Bureau of Labor Statistics, however, total “underemployment” in the U.S. – those unemployed and looking for work, as well as discouraged workers, underutilized workforce given skills and experience, as well as part-time employment by virtue of no full-time position availability – peaked at roughly 17% in 2009 and remained above 12% for roughly four years until September of 2014.<sup>4</sup>

<sup>4</sup> <http://www.bls.gov/news.release/empsit.t15.htm>. (U-6 labor underutilization rate time series)

**Figure 2-4 Monthly U.S. Unemployment Rate, 2000-2014 (Seasonally Adjusted)**

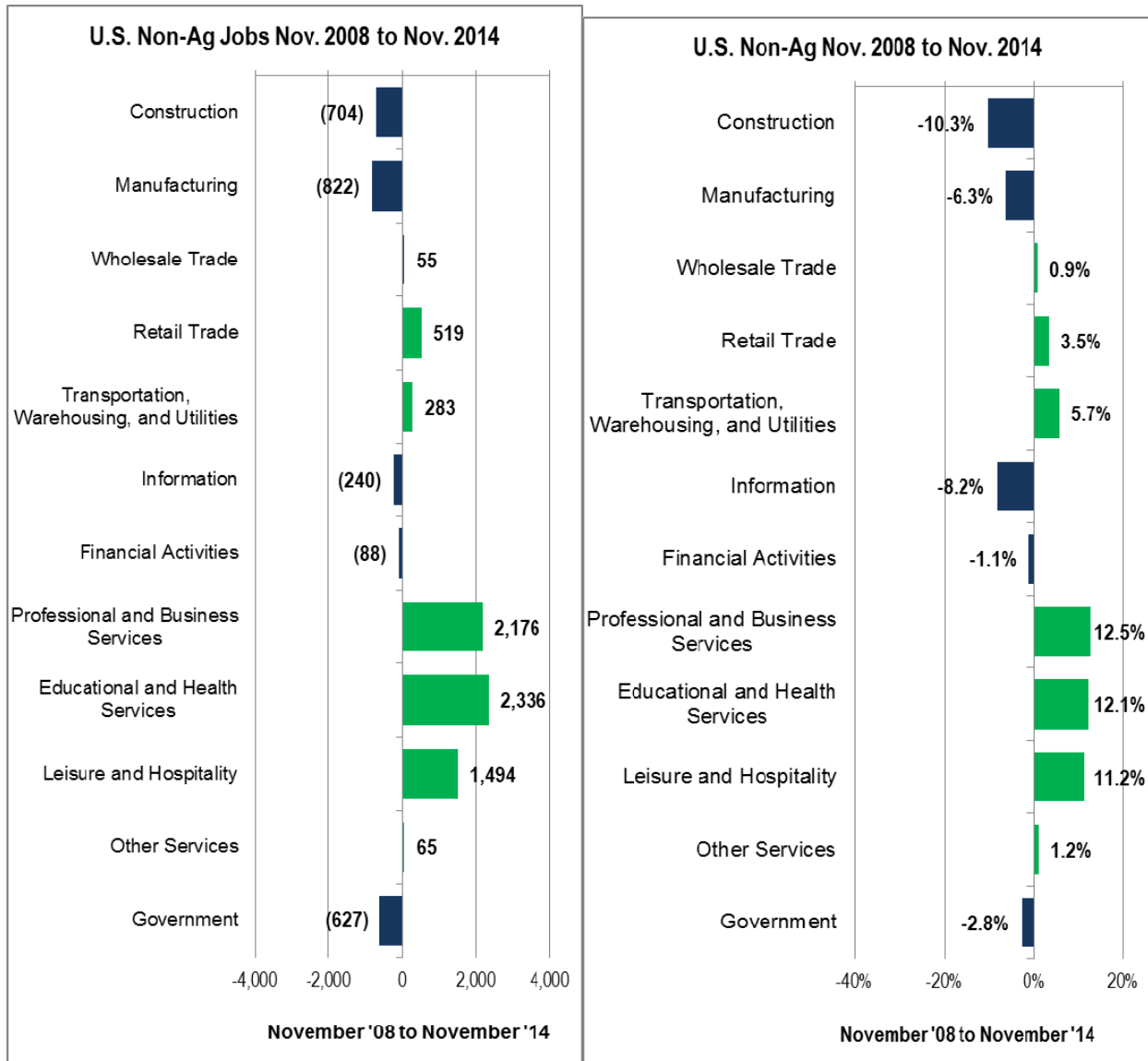


SOURCE: U.S. Bureau of Labor Statistics

Due to six years of tepid hiring growth nationwide, generally modest business investment volume, and continued growth in population and labor force, the Federal Reserve continues to maintain an expansionary policy of low interest rates in order to incent continued consumer spending, as well as reducing the cost of financing business capital investment and expansion.

Although disappointing, national hiring has not been lackluster in all industry sectors. Figure 2-5 provides a comparison of the twelve major non-agricultural industry categories by the North American Industry Classification System (NAICS).

**Figure 2-5 Sector Job Trend, January 2008 to January 2014 (Thousands, Seasonally Adjusted)**



SOURCE: U.S. Bureau of Labor Statistics

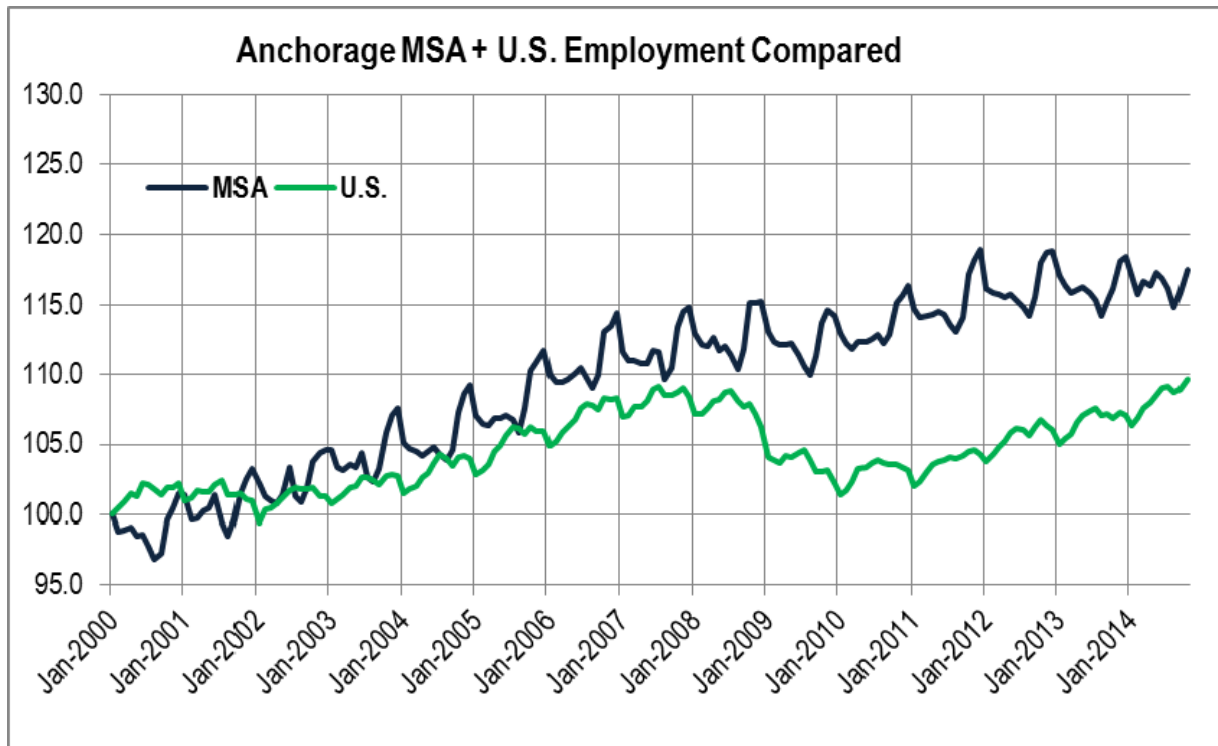
Education & Health Services has been the biggest bright spot through the Great Recession, adding over 2.3 million jobs over the past six years. The 12.1% sector employment growth rate, however, is bested by the 12.5% job growth rate in Professional & Business Services between November 2008 and November 2014. Leisure & Hospitality, Transportation, Warehousing, and Utilities, Retail Trade, Other Services, and Wholesale Trade also saw job gains from the end of 2008 – nearly the worst of the Great Recession – to November of 2014.

In terms of job losses, Manufacturing (822,000 jobs lost), Construction (704,000 jobs lost), and Government (627,000 jobs lost) have been worst performers since the worst of the Great Recession. Overall, as of 2014, five of the nation’s twelve primary industries still had not fully recovered to pre-recession employment levels.

## 2.2 Anchorage MSA Economic Trends

The Anchorage and Mat-Su MSA economy continued its trend of exceeding the nation in terms of job growth through the middle of 2014 and since the benchmark year of 2000. Employment continues to grow in an upward trend within the MSA, however fluctuations consistently occur throughout each year, reflective of seasonal employment like fishing and tourism (MSA data is not seasonally adjusted). Figure 2-6 expresses annual, indexed employment for the Anchorage MSA as compared to the U.S. as a whole.

**Figure 2-6 Anchorage MSA & U.S.A Employment Trend Index (January 2000 = 100.0)**

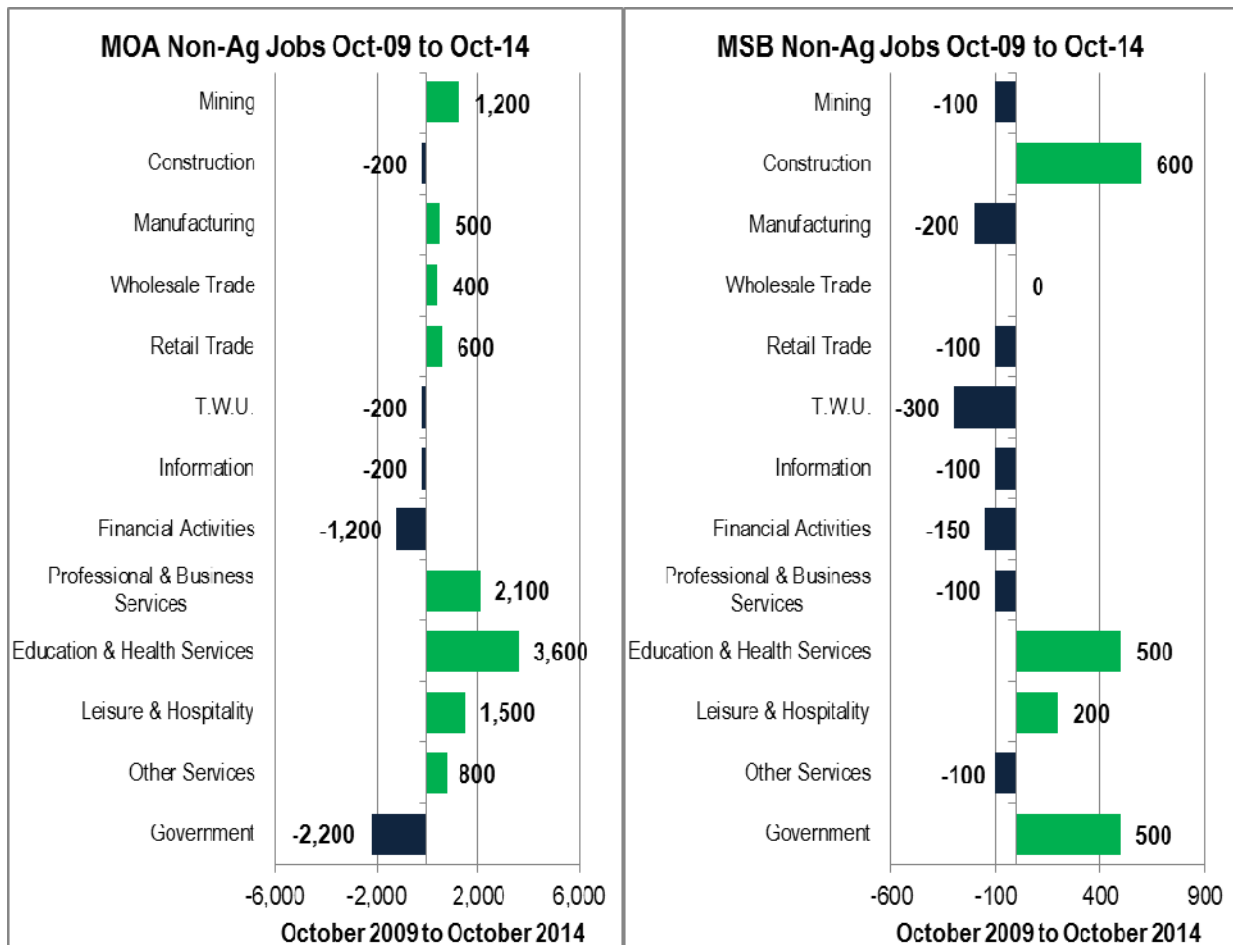


Source: Alaska Department of Labor and Workforce Development, US Bureau of Labor and Statistics

Recent Alaska Department of Labor & Workforce Development (AKDOL&WD) data for the Anchorage and Mat-Su economy include:

- The MSA added 2,242 jobs between October 2013 and October 2014. The expansion translates into a 1.2% annualized rate of growth.
- The MSA economy has consistently exceeded pre-Great Recession peak employment level at 166,000 jobs in December of 2007.
- Current total jobs in the region stand at 190,388 as of October 2014, the most recent month available. The MOA is presently estimated to have 149,418 jobs while the MSB is estimated to have 40,970 jobs.
- The Anchorage/Mat-Su MSA continues to have significantly greater seasonal fluctuation to job gains due to stronger ties to food production and tourism and seasonal impacts on various sectors.

**Figure 2-7 MOA & MSB Industry Job Level Changes (2009-2014)**



Source: Alaska Department of Labor and Workforce Development

Figure 2-7 displays nonfarm industry job gains between the nearly worst of the Great Recession in October of 2009 and October of 2014. Both the MOA and the MSB job performance are detailed in Figure 2-7.

In Anchorage:

- Education & Health Services (3,600 jobs) led by the U-Med District, followed by Professional & Business Services (2,100 jobs) driven by Native corporation entity growth, and Leisure & Hospitality (1,500 jobs) have had the most job gains since the Great Recession.
- Government, Financial Activities, Information, Construction, and Transportation, Warehousing & Utilities still have not regained jobs lost in Anchorage since the worst of the Great Recession.
- From October 2009 to October 2014, Anchorage added 6,700 jobs net new jobs among all sectors combined.
- In October of 2014, Anchorage had 158,500 nonfarm industry jobs according to AKDOL&WD.

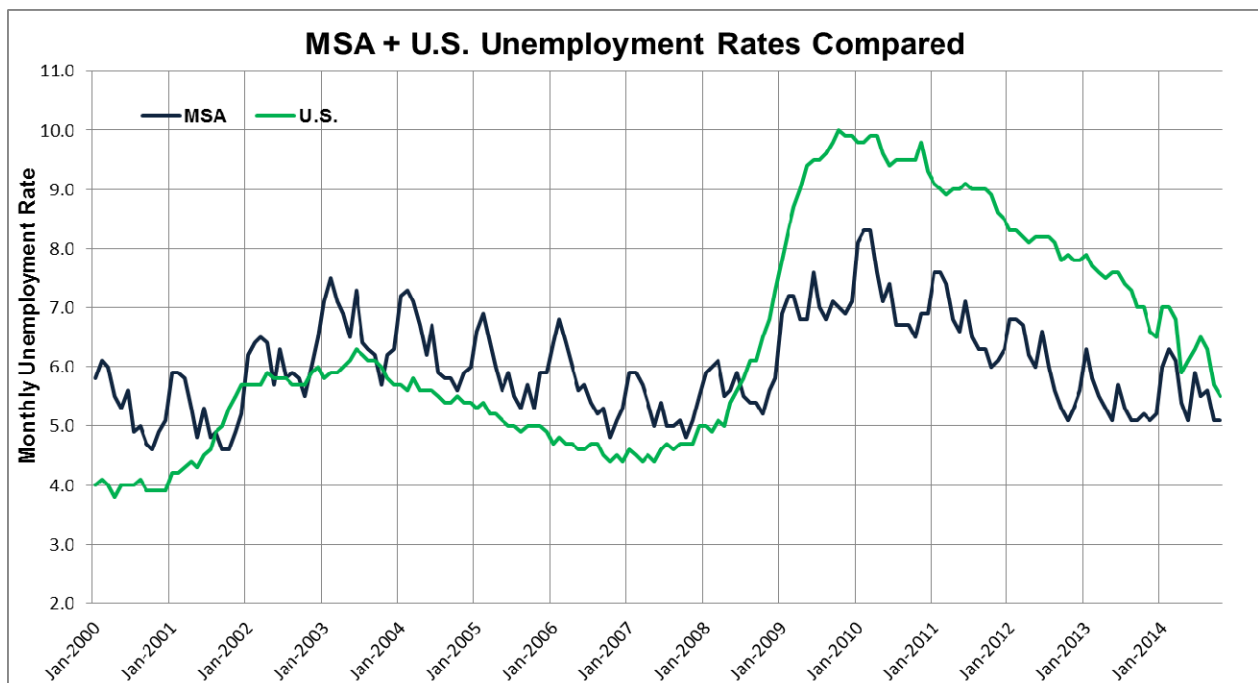
In the Mat-Su Borough:

- Construction (600 jobs), Education & Health Services (500 jobs), and Government (500 jobs) have led economic growth since the worst of the Great Recession.
- Eight key industry sectors have still not recovered all jobs lost since the worst of the Great Recession, with Transportation, Warehousing & Utilities (-300 jobs), Manufacturing (-200 jobs), and Financial Activities (-150 jobs) still demonstrating the largest jobs deficits compared to 2009.
- Between Octobers of 2009 and 2014, however, the MSB added 650 net new jobs among all sectors combined.
- There were 21,200 nonfarm industry jobs in the MSB in October of 2014 according to AKDOL&WD.

At its worst, the MSA unemployment rate reached a peak of 8.3% in early 2010. In early 2013, the regional jobless rate equaled the mid-2007 unemployment rate that occurred before the Great Recession.

From September 2009 to April of 2014, the region's unemployment rate has been well below the national jobless rate. The region's unemployment rate currently stands at 5.1%, its lowest level since 2009. The national jobless rate during the Great Recession reached 10% during the fall of 2009. The dramatic decrease in joblessness in the Anchorage and Mat-Su region through the beginning of 2014 would certainly indicate that the regional economy is expanding faster than active job-seekers to fill positions. However, as Figure 2-8 indicates, the unemployment trend has flattened during much of 2014.

**Figure 2-8 Anchorage MSA & U.S. Unemployment Rate Trend, 2000-2013**

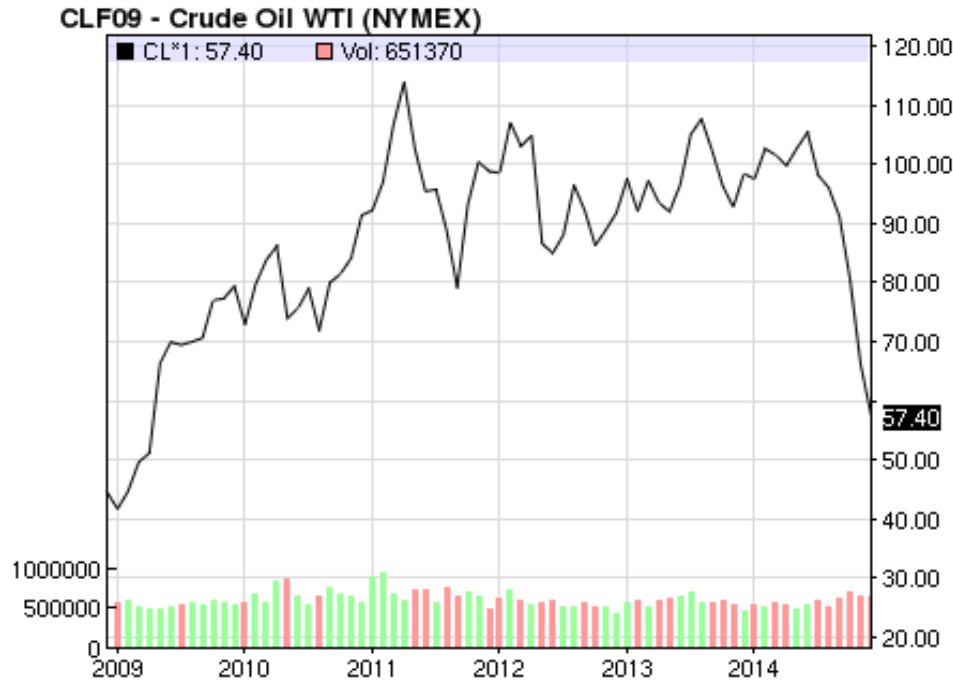


Source: Alaska Department of Labor and Workforce Development, US Bureau of Labor and Statistics

Local economic slowing has certainly been affected by dramatic reductions in the price of crude oil, as is the case for the benchmark West Texas Intermediate (WTI) Crude Oil Prices displayed in Figure 2-9. Although oil prices, specifically Alaska North Slope (ANS) West Coast prices and WTI have trended upward since 2009, the second half of 2014 has marked dramatic decreases

from \$105 per barrel to roughly \$60 per barrel late in 2014. By mid-January, the price per barrel dropped to \$46. As Anchorage continues to be the statewide hub of major resource extraction firms, including petroleum, the price drop-off appears to be having a definite curbing effect on oilfield investment and growth in 2014.

**Figure 2-9 West Texas Intermediate Crude Oil Price per Barrel, 2009-2014**



Source: Nasdaq.com (<http://www.nasdaq.com/markets/crude-oil.aspx?timeframe=6y>)

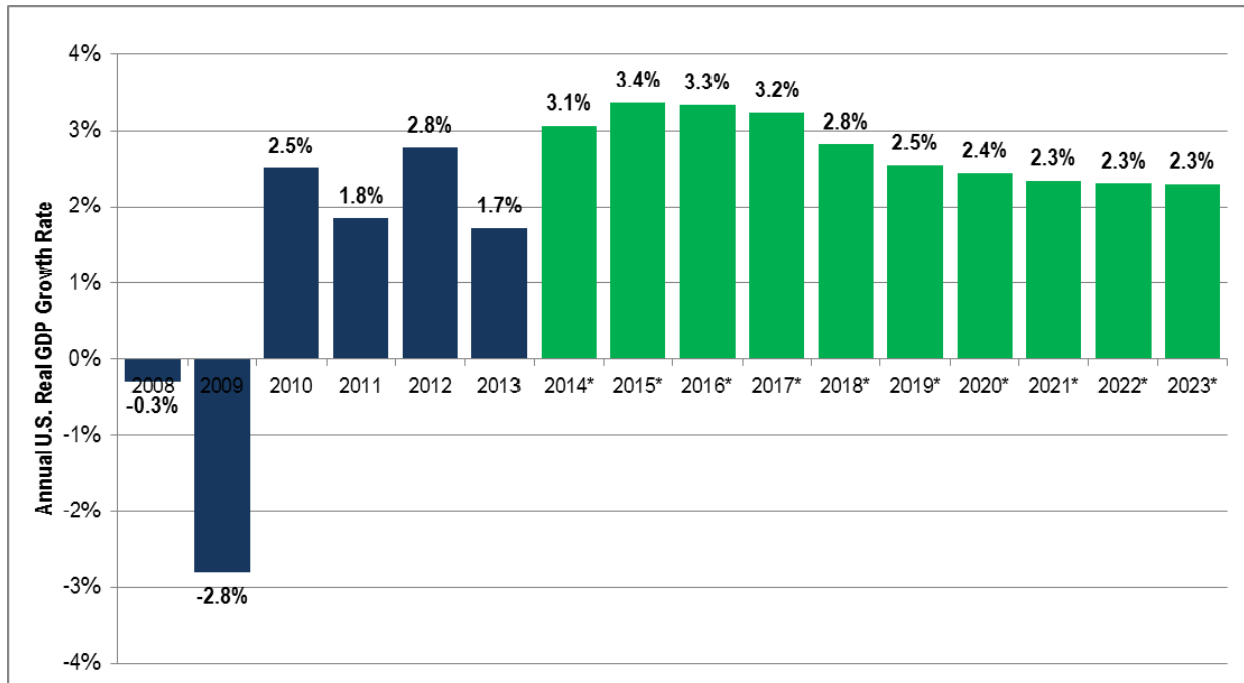
Given the uncertainty of the duration of low international oil prices, as will be discussed in the next section, the economic outlook for Anchorage is certainly muddled compared to just six months ago. For this reason, for purposes of industrial land demand analysis, a Low Growth Scenario for the Anchorage economy will be modeled for industry job growth potential and resulting industrial land needs through 2035.

## 2.3 Economic Outlook

### 2.3.1 National Outlook

Figure 2-10 provides a graphical summary of the most recent forecast of annual, U.S. real GDP through 2023 by the U.S. Office of Management and Budget (OMB).

**Figure 2-10 Forecasted U.S. Real GDP Annual Growth (2014-2023)**



\*Forecast values

Source: U.S. Office of Management and Budget (June 2014)

The most recent forecast, conservative in nature and the basis of planning the annual U.S. federal budget, is generally positive with annual economic growth averaging roughly 3.3% for three years beginning in 2015. Thereafter, the U.S. economy is anticipated to grow by 2.3% to 2.8% annually thereafter assuming no significant economic shocks.

### 2.3.2 State of Alaska Outlook

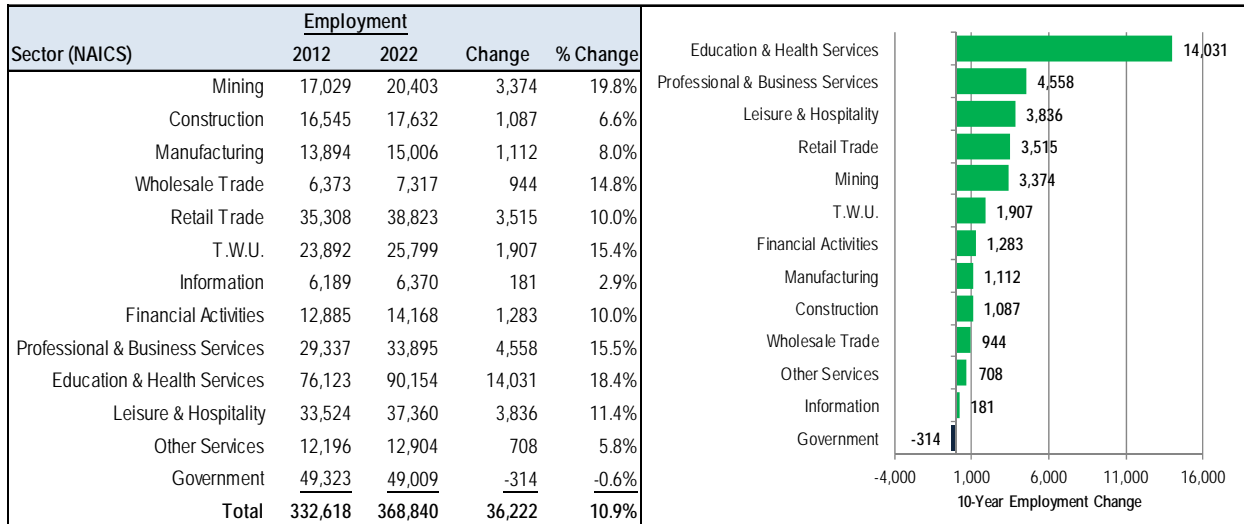
In October of 2014, AKDOL&WD released its ten-year industry employment forecast for the State of Alaska. By October, oil price drops had been sustained, though not as dramatically as over the following six weeks. The resulting forecast of statewide nonfarm industry employment is found in Figure 2-11.

- Overall, Alaska industry employment is projected to grow by 1.09% annually through 2022, adding a total of 36,222 jobs.
- Continued major investment in mining operations in the Interior are credited with boosting the Mining sector for sizeable job growth (8,874 jobs) despite potentially weak Petroleum extraction employment in that industry classification.



- Overall, ten-year statewide economic job growth is expected to be concentrated in Education & Health Services (14,081 new jobs), followed by Professional & Business Services (4,668 new jobs) and Leisure & Hospitality (3,836 new jobs.)
- Only Government is expected to see a ten-year decline in statewide employment, losing 314 jobs over the duration.

**Figure 2-11 Forecasted Alaska Nonfarm Industry Employment (2012-2022)**



Source: AKDOL&WD, October 2014 (<http://laborstats.alaska.gov/trends/oct14art1.pdf>)

Depending upon the ultimate duration of low oil prices, the above forecast may be rendered optimistic with extended oil price weakness, or reasonable if price levels fluctuate over the short-term and normal growth activity resumes. Additional discussion of the implications of oil price uncertainty in Anchorage is reserved for the following subsection.

## 2.4 Municipality of Anchorage Employment Forecasts

For the industrial land use planning period of 2015 to 2035, previous discussions provide the following context for how the MOA economy can be expected to grow:

- *National Economy:* Nationwide, the economy is expected to grow in excess of 3% for four years with gradually moderating growth rates annually thereafter. Low oil prices have mixed impacts as energy firms certainly experience contraction, but lower energy and auto fuel prices provide a boon to businesses and households via higher non-fuel spending potential.
- *Alaska Economy:* Roughly 1.1% annual job growth statewide through 2022, though with likely short-term slower performance in Mining via petroleum exploration growth curtailed and Government as the State of Alaska decides how to budget for annual services obligations given drastically different oil prices than projected earlier in 2014.

It is within the context of these two broader influencing factors that the Anchorage economy will perform during the 2015-2035 planning period for industrial land need.

For purposes of this study, however, a third factor affecting Anchorage industrial sector employment, land need, and regional urbanization pattern is the Knik Arm Crossing bridge

project planned by the Alaska Department of Transportation & Public Facilities. The roughly 1.7 mile bridge would extend from the vicinity of Government Hill and the Port of Anchorage across the Knik Arm to Point Mackenzie near Port Mackenzie. The potential project and its implications for the Anchorage economy and future urbanization within the Municipality are reserved for later in this report.

#### **2.4.1 Scenarios Defined**

Three distinct growth scenarios were estimated to best capture different economic outcomes given expected national and statewide economic performance, as well as near-term economic uncertainty about oil prices and the potential impacts of a Knik Arm Crossing, which would open up thousands of acres of undeveloped land in the Point Mackenzie within a 5-10 minute drive from Anchorage.

To formulate three economic growth scenarios for the Municipality of Anchorage, Cardno utilizes recent economic analysis and forecasting it conducted with Anchorage firm Agnew::Beck Consulting for the December 2014 *Knik Arm Crossing Independent Socioeconomic Review & Forecast*.<sup>5</sup>

The basis of the Knik Arm Crossing employment forecast for the Anchorage MSA was as follows:

- Detailed review of all past socioeconomic forecasts for the Anchorage MSA with focus on previous forecasts that explicitly included the Knik Arm Crossing. This process identified the 2009 employment forecast conducted by the UAA Institute of Social & Economic Research (ISER) for the Highway to Highway (H2H) project as the best basis for new regional economic forecasting.<sup>6</sup>
- Updated employment and population forecasts for the Anchorage MSA, comprising the Municipality and Mat-Su Borough, with new economic data since the 2009 ISER forecast. The new forecast resulted in slightly lower overall job growth and population growth projections compared to the 2009 ISER study.
- Literature review of studies identifying the long-term, permanent economic impact of major transportation infrastructure investment. Impacts were found to vary, but due to the geographic isolation of the MSA, unlike most MSAs throughout the U.S., growth impacts of the KAC were assumed to be measurable and beneficial, but not significant in magnitude overall.

The resulting forecast of economic and population growth with a Knik Arm Crossing resulted in modestly higher overall growth compared to the growth without a KAC. Geographic distribution of regional growth varied significantly, however. Most growth redistribution was found to occur within the Mat-Su Borough, from growth that would have located 45 minutes or more north of Anchorage in the Palmer & Wasilla area to the Point Mackenzie area, no more than 15 to 20 minutes from Anchorage.

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<sup>5</sup> <http://knikarmbridge.com/wp-content/uploads/2014/03/KAC-TR-Appendix-A.pdf>

<sup>6</sup> Economic and Demographic Projections for Alaska and Greater Anchorage Study, 2010-2035," Scott Goldsmith, Ph.D. of ISER, University of Alaska Anchorage, 2009.

Some Anchorage growth was found to move across the KAC to Point MacKenzie, but as the Technical Advisory Committee of this study process identified, the KAC study found the Anchorage Bowl to continue to be the preferred location for most employers. Anchorage growth was geographically allocated based on transportation modeling conducted by Anchorage Metropolitan Area Transportation Solutions (AMATS), specifically found in the 2035 Metropolitan Transportation Plan (MTP).<sup>7</sup>

The resulting three MOA economic growth scenarios are described as follows:

- **“Baseline No KAC Bridge” Scenario:** The MOA adds jobs at an average rate of 1.08% annually. Individual sectors grow at similar relative pace as recently projected by AKDOL&WD Statewide.
- **“Baseline KAC Bridge” Scenario:** MOA employment grows by an average rate of 1.05% annually. Individual sectors grow at similar relative pace as recently projected by AKDOL&WD Statewide.
- **“Low Growth KAC Bridge” Scenario:** The MOA adds jobs at an average rate of 0.66% annually, representing a “worst case” economic scenario for the Municipality. Individual sectors perform similarly relative to the Statewide forecast.

As will be discussed later in this subsection, it was found in the December 2014 *Knik Arm Crossing Independent Socioeconomic Review & Forecast* that a Knik Arm Crossing would likely not pose significant impacts to Anchorage industry sectors, but would more greatly act as a pressure valve for Anchorage housing demand and undersupply of residential unit capacity in the Anchorage Bowl. Therefore, ultimately, the “No KAC Bridge” and “KAC Bridge” scenarios are found to not be dramatically different.

As past economic performance in Anchorage displayed in Table 2-1 indicates, the growth scenarios modeled in this analysis are relatively conservative compared to the last twenty years of growth. Both the State of Alaska and the U.S. Bureau of Economic Analysis record Anchorage employment growing by between 1.4% annually and 1.5% annually since 1990.

**Table 2-1 MOA Historical Employment Growth Statistics**

		Historic Average Annual Employment Growth Rate		
Year Published	Report & Measure	1990-2000	2000-2009	1990-2009
2013	Alaska Dept. of Labor - Quarterly Census Employment & Wages	---	1.5%	---
2012	Bureau of Economic Analysis - Total Nonfarm Full-Time and Part-Time (Excludes Sole Proprietors)	1.4%	1.5%	1.5%

<sup>7</sup> [http://www.muni.org/Departments/OCPD/Planning/AMATS/Pages/1\\_MTP.aspx](http://www.muni.org/Departments/OCPD/Planning/AMATS/Pages/1_MTP.aspx)

## 2.4.2 **MOA Employment Forecast Results**

### 2.4.2.1 ***Baseline No KAC Bridge Scenario***

Results of the twenty-year MOA employment forecast, from 2015 to 2035, are found in Figure 2-12.

Provided sufficient industrial land is available to realize the Baseline No Bridge scenario:

- The MOA has the ability to grow from 158,200 jobs in 2015 to 196,400 jobs by 2035.
- Net job growth potential between 2015 and 2035 is estimated at 38,200 new jobs, led by Education & Health Services (10,600 jobs) and Professional & Business Services (7,300 jobs).
- Mining, Construction, Manufacturing, Wholesale Trade, and Transportation, Warehousing and Utilities are expected to add 6,500 jobs through 2035.

**Figure 2-12 Baseline No Bridge Scenario Employment Growth Forecast, MOA**

Baseline No KAC Bridge Scenario Employment Sector	Total Employment					Δ '15-'35
	2015	2020	2025	2030	2035	
Mining	3,400	3,800	3,800	3,900	3,900	500
Construction	8,500	9,400	9,500	9,600	9,800	1,300
Manufacturing	2,400	2,600	2,700	2,700	2,800	400
Wholesale Trade	4,500	5,400	5,600	5,700	5,900	1,400
Retail Trade	17,600	19,900	20,500	21,100	21,900	4,300
Transportation, Warehousing & Utilities	11,800	13,400	13,800	14,100	14,700	2,900
Information	3,800	4,200	4,300	4,300	4,300	500
Financial Activities	8,700	9,500	9,800	10,000	10,100	1,400
Professional & Business Services	19,400	22,600	24,000	25,400	26,700	7,300
Education & Health Services	24,700	29,000	30,900	33,100	35,300	10,600
Leisure & Hospitality	16,700	19,400	20,400	21,500	22,400	5,700
Other Services	5,800	6,600	6,700	6,800	6,900	1,100
Government	30,900	31,100	31,300	31,500	31,700	800
<b>Total</b>	<b>158,200</b>	<b>176,900</b>	<b>183,300</b>	<b>189,700</b>	<b>196,400</b>	<b>38,200</b>

Source: Cardno, Inc., based on *Knik Arm Crossing Independent Socioeconomic Review & Forecast*, Cardno, Inc. and Agnew::Beck Consulting

### 2.4.2.2 ***Baseline KAC Bridge Scenario***

Figure 2-13 provides the detailed employment forecast for the MOA assuming baseline or “medium growth” conditions and a Knik Arm Crossing is constructed beginning in 2017 with completion in 2019.

- The MOA is expected to grow from 158,200 jobs in 2015 to 195,300 jobs by 2035.
- Net job growth potential between 2015 and 2035 is estimated at 37,100 new jobs, led by Education & Health Services (10,400 jobs) and Professional & Business Services (7,100 jobs).
- Mining, Construction, Manufacturing, Wholesale Trade, and Transportation, Warehousing and Utilities are expected to add 6,300 jobs through 2035.

**Figure 2-13 Baseline Bridge Scenario Employment Growth Forecast, MOA**

Baseline KAC Bridge Scenario Employment Sector	Total Employment					Δ
	2015	2020	2025	2030	2035	'15-'35
Mining	3,400	3,800	3,800	3,900	3,900	500
Construction	8,500	9,400	9,500	9,600	9,700	1,200
Manufacturing	2,400	2,600	2,700	2,700	2,800	400
Wholesale Trade	4,500	5,400	5,600	5,700	5,900	1,400
Retail Trade	17,600	19,900	20,400	21,000	21,800	4,200
Transportation, Warehousing & Utilities	11,800	13,400	13,700	14,000	14,600	2,800
Information	3,800	4,200	4,300	4,300	4,300	500
Financial Activities	8,700	9,500	9,800	10,000	10,000	1,300
Professional & Business Services	19,400	22,600	23,900	25,300	26,500	7,100
Education & Health Services	24,700	29,000	30,800	33,000	35,100	10,400
Leisure & Hospitality	16,700	19,400	20,300	21,400	22,300	5,600
Other Services	5,800	6,600	6,700	6,800	6,900	1,100
Government	30,900	31,100	31,200	31,400	31,500	600
<b>Total</b>	<b>158,200</b>	<b>176,900</b>	<b>182,700</b>	<b>189,100</b>	<b>195,300</b>	<b>37,100</b>

Source: Cardno, Inc., based on *Knik Arm Crossing Independent Socioeconomic Review & Forecast*, Cardno, Inc. and Agnew::Beck Consulting

#### 2.4.2.2.1 Factors Contributing to Future Employment Retention in the MOA

The expectation that the MOA will not see significant job impacts from a Knik Arm Crossing is based on several key factors, some of which have been documented in recent MOA planning efforts. Below is a summary of the various industry sector factors that will affect continued competitive advantage for the MOA and limit the possibility of significant employment shifts with a Knik Arm Crossing.

##### Eklutna/Birchwood/Chugiak

Northern parts of the MOA along the Glenn Highway have begun to undergo land use and transportation planning development process, mostly private in nature. This is particularly true of the Eklutna area, some parts of which are further along as an industrial employment and residential area given landowner planning and interests. Development readiness of these areas will mean significant employment capture and retention for the MOA rather than an absolute shift. The topic will be discussed further later in this document.

##### MOA Industrial Land Supply Constraint

As will be discussed in greater detail later in this document, the MOA has limited room for all industrial businesses to expand based on past and new industrial land inventory efforts. In other words, construction of a Knik Arm Crossing mainly introduces a new set of MSB location options close to the Anchorage Bowl for firms already choosing the more distant Palmer-Wasilla “Core” of the MSB.

##### (Industrial) Business Cost Relocations

Opening of the Knik Arm Crossing will indeed open new business location options for various industrial-type businesses such as Manufacturing, Warehousing & Distribution, and Wholesale Trade. Site/land-constrained firms in Anchorage and firms not faced with such constraints in the

MSB might both find Point MacKenzie a compelling business relocation site or a new expansion site with the bridge.

Point MacKenzie should, however, be viewed as one of two strategic business locations emerging in the region including the Eklutna/North MOA area. Each have different competitive advantages that will appeal to different types of businesses, thus firm response to a Knik Arm Crossing cannot be viewed as a uniform, one-way employment shift over time.

- **Fee Simple Ownership vs. Long-Term Lease:** Businesses seeking industrial sites preferring to own land outright will likely find greater flexibility in the larger Point MacKenzie area. A combination of private and public interests own land in the Point MacKenzie area, thus land sales will likely be more common and easier for interested firms. Alternatively, firms preferring leased land for their location decisions may likely prefer the Eklutna area. Current land ownership is primarily by Eklutna, Inc., which has expressed that land sales have happened in special circumstances.<sup>8</sup>
- **Utility & Infrastructure Preferences:** Firms that require sooner water, wastewater, or other utilities or services may likely find the Eklutna/North MOA area preferable to Point MacKenzie, at least until such time that those specific utilities in sufficient capacity are extended feasibly.
- **Land Cost Sensitivity:** Because of the sheer size of the Point MacKenzie area, land availability with major transportation infrastructure via the Knik Arm Crossing will likely render Point MacKenzie advantageous from a land cost perspective. This will attract different potential firms, however, than the Eklutna/North MOA area. Firms that are sensitive to land costs are frequently those that use large sites with low intensity, such as equipment storage, construction yard uses, and some warehousing/distribution and transportation businesses. Other firms include those that need flexibility for future expansion and acquire significantly more land than immediately needed because of the low cost of acquisition and resulting low holding cost until time for improvement.
- **Central Location to the Region:** Eklutna/North MOA will be the strategically stronger location for various businesses that both heavily depend upon transportation infrastructure and serve both the MOA and MSB subregional economies. Arguably, until Knik Goose Bay (KGB) Road or another connection is improved significantly to the Parks Highway/Wasilla, the Glenn Highway will be the superior north-south freight transportation route for firms serving customers in both the high-growth Mat-Su economy and the far larger, but slower-growing Anchorage economy, and the Interior.
- **Office/Commercial Build-Out:** Industrial businesses that utilize more office facility build-out rather than higher unimproved land usage may find Eklutna/North MOA preferable. Such businesses are typically less sensitive to land costs and use smaller sites more intensively with structure and office uses. Furthermore, such businesses may prefer to be near existing and future planned commercial development along the Glenn Highway in the Eklutna/Birchwood area.

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<sup>8</sup> <http://www.eklutnainc.com/2013/corporate-lands/commercial.php>

- **Port, Airport, and Railroad Proximity:** Firms that rely significantly upon convenience and freight volume to and from Ted Stevens Anchorage International Airport and the Port of Anchorage, as well as Port MacKenzie and major new rail investment by the Alaska Railroad, will likely find Point MacKenzie location preferable to Eklutna/North MOA for future relocation and/or expansions site decisions.

### **MOA Commercial Land Supply Constraint**

The MOA has documented a shortage of sufficient commercial/retail land over the next twenty years.<sup>9</sup> Because retail development typically is the least sensitive to land costs – owing to retail paying premiums to be on highly visible, high traffic locations - it can put price pressure on industrial land supply and affect conversion to retail uses. But for that same reason, commercial development can also be far more economically suitable for higher-cost redevelopment of sites that were previously assigned other uses including industrial operations.

In other words, to the extent that the Knik Arm Crossing affects business relocation decisions from the MOA to the MSB, potential retail/commercial sites are opened up for retail/commercial uses that can feasibly locate on previously improved sites.

Second, also documented by the MOA, retail sales at MOA establishments are extraordinarily robust even for higher Alaska wages, further evidence of retail land supply constraint. Although some parts of Anchorage may be perceived as having predominantly retail or even “too much” retail, the quantity of existing retailers and services is actually constrained compared to the amount of money spent in Anchorage by residents, visitors, and businesses.

But as population growth trend changes with a Knik Arm Crossing, Anchorage retail/commercial businesses will on average experience slower sales growth from currently, abnormally high levels. While not true for every individual retail/commercial business, overall the sector in Anchorage has the ability to absorb some reduction in sales growth relative to extraordinary historical trend due greatly to land supply constraint. Again, decreases in overall retail/services business in Anchorage would not be expected as the MOA is projected to continue to grow in a stable manner, but at a slightly slower pace with a Knik Arm Crossing than without.

### **Commercial Concentration in Anchorage**

Although population shifts are expected with a Knik Arm Crossing, specifically higher growth in the MSB/Point MacKenzie and somewhat dampened population growth in the MOA, the high concentration locational investment by government, energy, natural resource, tourism, healthcare, and education sectors in downtown Anchorage and Midtown Anchorage will not change. This, in turn, makes Anchorage a continued central location for:

- Related and support commerce for existing employment concentrations;
- The continuing, large and growing residential base in Anchorage;
- Its role as jumping-off point for much of Alaska tourism; and

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<sup>9</sup> Anchorage Commercial Land Assessment, January 2012  
(<http://www.muni.org/Departments/OCPD/Planning/Publications/Pages/default.aspx>)

- The primary destination for retail and services patronization by Alaska residents from elsewhere in the State.

### 2.4.2.3 Low Growth KAC Bridge Scenario

During late stages of the study process, crude oil prices experienced dramatic decreases well below pricing assumptions utilized by the State of Alaska for fiscal planning. Dramatically revised State revenue forecasting and great uncertainty about economic fallout both made it necessary to add a “Worst-Case” economic growth scenario for industrial land need analysis purposes.

Figure 2-14 provides the detailed employment forecast for the MOA “low growth” conditions and a Knik Arm Crossing is constructed beginning in 2017 with completion in 2019. The “low growth” scenario assumes a “worst case” economic scenario, where annual employment growth in the MOA averages 0.66% - less than the “baseline” forecast of 1.05% and significantly slower than historical growth of 1.5% between 1990 and 2000.

**Figure 2-14 Low Growth Bridge Scenario Employment Growth Forecast, MOA**

Low Growth KAC Bridge Scenario Employment Sector	Total Employment					Δ '15-'35
	2015	2020	2025	2030	2035	
Mining	3,400	3,700	3,600	3,600	3,500	100
Construction	8,500	9,100	9,000	8,900	8,900	400
Manufacturing	2,400	2,500	2,500	2,500	2,500	100
Wholesale Trade	4,500	5,200	5,300	5,300	5,400	900
Retail Trade	17,600	19,200	19,300	19,500	19,900	2,300
Transportation, Warehousing & Utilities	11,800	12,900	13,000	13,100	13,300	1,500
Information	3,800	4,000	4,100	4,000	3,900	100
Financial Activities	8,700	9,200	9,200	9,300	9,200	500
Professional & Business Services	19,400	21,800	22,600	23,500	24,200	4,800
Education & Health Services	24,700	27,900	29,100	30,700	32,000	7,300
Leisure & Hospitality	16,700	18,700	19,200	19,900	20,300	3,600
Other Services	5,800	6,400	6,300	6,300	6,300	500
Government	30,900	30,700	30,750	30,800	30,900	0
<b>Total</b>	<b>158,200</b>	<b>171,300</b>	<b>173,950</b>	<b>177,400</b>	<b>180,300</b>	<b>22,100</b>

Source: Cardno, Inc., based on *Knik Arm Crossing Independent Socioeconomic Review & Forecast*, Cardno, Inc. and Agnew::Beck Consulting

- The MOA is expected to grow from 158,200 jobs in 2015 to 180,300 jobs by 2035.
- Net job growth potential between 2015 and 2035 is estimated at 22,100 new jobs, led by Education & Health Services (7,300 jobs) and Professional & Business Services (4,800 jobs).
- Mining, Construction, Manufacturing, Wholesale Trade, and Transportation, Warehousing and Utilities are expected to add 3,000 jobs through 2035.

### 2.4.3 Comparison to 2009 Anchorage Industrial Land Assessment

Table 2-2 provides a comparison of employment forecasts found in this industrial lands assessment update as compared to the following:



- 2009 Industrial Land Assessment (EPS, Inc. for AEDC and MOA); and
- 2012 Commercial Land Assessment (Johnson Reid, LLC, Agnew::Beck, Blue Sky Consulting)

Overall, MOA employment forecasting in this updated industrial land assessment is most comparable to the employment forecast found in the 2012 Commercial Land Assessment. Annual job growth in that report, under the Base Scenario, projected 1,650 new jobs annually on average from 2010 to 2030.

Both Baseline scenario forecasts in this update expect roughly 1,900 new jobs annually through 2035, a slight uptick compared to the Commercial Land Assessment forecast. The increase can be attributed to better-than-expected MOA performance through the Great Recession in hindsight from 2014. The Commercial Land Assessment forecast was conducted in 2011 when there was far greater uncertainty about how Anchorage would economically perform given financial crises and continued economic trouble nationwide.

**Table 2-2 MOA Land Use Planning Employment Forecasts**

		Forecast Data Point Comparisons		
Year Published	Report & Growth Scenario	2015	2030	Annual Growth
2009	Industrial Land Assessment - Base Scenario	223,677	267,518	2,877
2009	Industrial Land Assessment – High Scenario	231,279	295,210	4,262
2012	Commercial Land Assessment – Base Scenario	156,900	182,600	1,650
2012	Commercial Land Assessment – High Scenario	161,700	203,000	2,635
2014	Industrial Land Assessment Update – No Bridge	158,200	189,700	1,910
2014	Industrial Land Assessment Update - Bridge	158,200	189,100	1,855

Source: Various studies listed.

Table 2-2 also displays a primary rationale for the industrial land assessment update. The 2009 study projected an average of nearly 2,900 new jobs in the MOA annually under the Base Scenario. The employment dataset utilized for forecasting, from private data firm Woods & Poole Economics, estimated an existing employment level in Anchorage significantly in excess of estimates produced by AKDOL&WD. Although the study assumes employment growth rates consistent with other studies of the Anchorage economy, applying standard growth rates to a high employment level results in optimistic employment gains.

Accordingly, forecasts of employment and industrial land need found in the 2009 Industrial Land Assessment are viewed as aggressive, primarily due their completion prior to the Great Recession and assumption of higher economic growth rates.

This industrial land assessment update is intended as a revisit to describe future industrial land demand given employment levels consistent with standard data sources, as well as based on economic performance of the MOA through and after the Great Recession.

## 3 Industrial Land Demand Forecast

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Section 3 outlines methodology and estimates of future demand for industrial land for the MOA through 2035. Demand for industrial land is calculated as a function of future potential employment within a geographic area according to the following general methodology:

1. *Estimate the share of future employment that will utilize industrial space and land;*
2. *Calculate amount of developed industrial space required for each future industrial job;*
3. *Estimate total industrial space demand as a function of future industrial employment and average space required per job;*
4. *Convert developed industrial space demand into industrial land demand utilizing building footprint, or floor area ratio (FAR) assumptions.*
5. *Separately analyze potential marijuana-related industry growth in Anchorage and translate findings into comparable industrial space and land demand.*

Task 5 requires a different methodology than tasks 1 through 4 due to the still-uncertain nature of future marijuana industry resulting from recreational use legalization in November of 2014. Details are discussed in Section 3.3.

The resulting industrial land demand analysis for the Municipality of Anchorage is discussed in this section. Unless otherwise specified, space and land usage assumptions are based on local industrial development patterns as identified by MOA staff in *Volume II: Industrial Land Inventory*. The detailed, updated industrial land supply analysis was conducted in parallel to this updated industrial land demand assessment.

### 3.1 Industrial Space Utilization Forecasts

#### 3.1.1 Key Assumptions

A series of industrial space utilization assumptions were required to quantify future demand for developed industrial space, and then industrial land demand.

##### 3.1.1.1 **Industrial Share of Total Jobs**

Figure 3-1 provides a summary of key industrial job and typical industrial building type assumptions for each major MOA industry sector category. The share of Anchorage industry sector jobs that utilize industrial space and land ranges from 10% for professional services-dominant sectors such as Government and Education & Health Services, to as high as 95% for traditional PDR industrial sectors such as Mining, Manufacturing, and Wholesale Trade.

Overall, 30% of Anchorage employment will prefer to or need to utilize industrial space types and land if it is available.

##### 3.1.1.2 **Distribution of Industrial Jobs by Building Type**

Although not all industrial jobs require built industrial space to house them, the vast majority of industrial jobs utilize land associated with some type of developed space on-site. This analysis utilizes three broad and distinct industrial structure and usage types that capture the majority of

industrial activity types described in detail in Section 2 of *Volume II: Industrial Lands Inventory*. Figure 3-1 provides assumptions about what percentage of industrial employment growth will occur in each broad category of use: Warehouse & Distribution, General Industrial, and Industrial Business Park.

**Figure 3-1 Industrial Employment & Space Distribution Assumptions, MOA**

Industrial Space Usage Employment Sector	Industrial % of Total Jobs	Distribution by Building Type		
		Warehouse/ Distrib.	General Industrial	Business Park
Mining	95%	0%	100%	0%
Construction	50%	10%	80%	10%
Manufacturing	95%	0%	50%	50%
Wholesale Trade	95%	70%	20%	10%
Retail Trade	15%	50%	0%	50%
Transportation, Warehousing & Utilities	70%	70%	10%	20%
Information	30%	0%	0%	100%
Financial Activities	20%	0%	0%	100%
Professional & Business Services	35%	0%	0%	100%
Education & Health Services	10%	50%	0%	50%
Leisure & Hospitality	15%	10%	0%	90%
Other Services	75%	10%	65%	25%
Government	10%	20%	20%	60%

Source: Cardno, Inc. based on Municipality of Anchorage Industrial Land Supply Analysis

### Warehouse & Distribution Space

Physically, Warehouse & Distribution uses feature little to no office finish, high ceilings for product warehousing, packing, unpacking, and transfer, significant truck access and turnaround. Structures are frequently open warehouses inside, with more modern structures having high ceilings for higher-capacity and height inventory storage. A minority share of office space build-out can occur on a second floor in part of the structure. Uses are transportation-intensive and must be located proximate to easy access to and from major road and highway networks.

Industry sector usage is concentrated in Wholesale Trade, Transportation, Warehousing & Distribution, as well as various storage uses for most other industry sectors.

**Figure 3-2 South Anchorage Warehouse & Distribution Use Example**



Source: Municipality of Anchorage

### **General Industrial**

In this analysis, General Industrial space and land usage is a broad category that captures various, on-site production and repair activities that require site and building specifications specifically suited to the user or users in question. Operations on-site will usually be some business function involving value-added activities such as manufacture, fabrication, alteration, etc.

**Figure 3-3 Anchorage General Industrial Use Example**



Source: Municipality of Anchorage

Structures typically have a small percentage of office finish, open structure floor plans for versatile manufacturing, storage, staging, or other business activity usage, high ceilings for product/warehousing or manufacture, and significant truck access and turnaround. Structures

may also be associated with outdoor storage areas, or “laydown yards,” depending upon the user in question.

Manufacturing, Wholesale Trade, Construction, Utilities, some Warehousing & Distribution, Other Services (predominantly Repair Services), and Government will also use General Industrial space and land.

Overall, General Industrial space and land usage will vary the most among industrial types as space and land utilization will vary significantly from the particular business of each specific business or user to user.

### **Business Park**

Business/Industrial Park space is usually distinguished from other industrial uses by higher office use build-out, higher quality building finish for customer service-oriented functions, and generally light industrial uses.

**Figure 3-4 Multi-tenant Industrial Business Park Use Example**



Source: Municipality of Anchorage

Structures will frequently have office or sometimes retail-like finish in front, sometimes high ceilings for product/warehousing or on-site manufacture, and truck doors in back usually. Industrial build-out is usually up to 50%, sometimes more, before the structure would be considered “office business park” due to predominantly office-related use. Industrial business park space will often serve as a low-cost alternative to traditional office space where ample parking for employees and customers is required.

From an industry perspective, Manufacturing (light), Professional & Business Services, and some Health Services (testing, etc.) will greatly utilize Business/Industrial Park space. Size of users varies most greatly in the Business Park category, as it is often developed as multi-tenant for flexible usage with higher finish for office and customer-service function.

### 3.1.1.3 Space Square Footage per Industrial Job

Figure 3-5 provides a summary of ultimate industrial space per job assumptions, in square feet, utilized in this analysis. Figures represent square footage of built structure per employee, not square footage of land per employee. Conversion of industrial space usage to land usage via a floor area ratio (FAR) is reserved for later in this subsection.

Based on detailed findings of current industrial usage in *Volume II: Industrial Lands Inventory*, as well as past analysis of industrial space usage found in the 2009 Anchorage Industrial Land Assessment, future industrial space demand is estimated to range from:

- As low as 345 square feet per employee (Mining); to
- As high as 1,620 square feet per employee in the Manufacturing industry sector.

The latter, high figure is somewhat unique to Anchorage given the need to house manufacturing activities indoors during the winter that would occur outdoors in other, warmer U.S. markets.

**Figure 3-5 Industrial Space Usage Per Job (Square Feet) Assumptions, MOA**

Industrial Space Usage Employment Sector	Square Feet per Job			Average Space per Job			
	Warehouse/ Distrib.	General Industrial	Business Park	Warehouse, Distrib.	General Industrial	Business Park	Weighted Average
Mining	1,350	533	467	0	0	467	345
Construction	1,350	533	467	68	53	350	471
Manufacturing	2,000	1,300	1,000	1,000	520	100	1,620
Wholesale Trade	700	533	467	490	107	47	643
Retail Trade	1,350	533	467	675	0	234	909
Transportation, Warehousing & Utilities	2,000	533	467	1,400	53	93	1,547
Information	1,350	533	467	0	0	467	467
Financial Activities	1,350	533	467	0	0	467	467
Professional & Business Services	1,350	533	467	0	0	467	467
Education & Health Services	1,350	533	467	675	0	234	909
Leisure & Hospitality	1,350	533	467	135	0	420	555
Other Services	1,350	533	467	135	346	117	598
Government	1,350	533	467	270	107	280	657

Source: Cardno, Inc. based on Municipality of Anchorage Industrial Land Supply Analysis

### 3.1.2 Twenty-Year MOA Industrial Space Usage Forecasts

Given MOA employment forecast scenarios and previously discussed industrial space usage assumptions, 20-year industrial space demand projections are summarized as follows by MOA growth scenario. In addition to the above assumptions about space usage, it was assumed that 10% of total new space developed would have a 10% structural vacancy rate reflecting the tendency of a healthy industrial space market to have some vacancy in an equilibrium situation, i.e., without scarcity-induced lease rate escalation.

#### 3.1.2.1 Baseline “No KAC Bridge” Scenario

The baseline growth scenario would see an estimated demand for 9.95 million square feet of new industrial space over the next twenty years. Growth in new industrial space demand is

driven by an estimated addition of 11,315 new industrial-related jobs through 2035. Figure 3-6 provides detailed findings for this scenario.

**Figure 3-6 Baseline “No KAC Bridge” Scenario Industrial Space Demand, MOA**

Baseline No KAC Bridge Scenario Employment Sector	Jobs in Industrial Space		Avg. Space		Industrial Space Need (000s of sq. ft.)			
	2015	2035	'15-'35	Per Job	2015	2025	2035	'15-'35
Mining	3,230	3,705	475	345	1,225.8	1,370.0	1,406.0	180.2
Construction	4,250	4,900	650	471	2,202.2	2,461.2	2,539.0	336.8
Manufacturing	2,280	2,660	380	1,620	4,063.0	4,570.8	4,740.1	677.1
Wholesale Trade	4,275	5,605	1,330	643	3,025.1	3,764.6	3,966.3	941.2
Retail Trade	2,640	3,285	645	909	2,638.3	3,073.0	3,282.9	644.6
Transportation, Warehousing & Utilities	8,260	10,290	2,030	1,547	14,053.3	16,435.2	17,507.1	3,453.8
Information	1,140	1,290	150	467	585.6	662.7	662.7	77.1
Financial Activities	1,740	2,020	280	467	893.8	1,006.9	1,037.7	143.9
Professional & Business Services	6,790	9,345	2,555	467	3,488.0	4,315.1	4,800.5	1,312.5
Education & Health Services	2,470	3,530	1,060	909	2,468.4	3,088.0	3,527.7	1,059.3
Leisure & Hospitality	2,505	3,360	855	555	1,530.1	1,869.1	2,052.4	522.3
Other Services	4,350	5,175	825	598	2,862.4	3,306.6	3,405.3	542.9
Government	3,090	3,170	80	657	2,232.5	2,261.4	2,290.3	57.8
<b>Total</b>	<b>47,020</b>	<b>58,335</b>	<b>11,315</b>	<b>774</b>	<b>41,268.5</b>	<b>48,184.6</b>	<b>51,218.0</b>	<b>9,949.5</b>

Source: Cardno, Inc.

The Transportation, Warehousing, & Utilities sector is expected to continue to drive most developed space growth, driven by industry related to Ted Stevens Anchorage International Airport, the Port of Anchorage, and Anchorage’s continued role as transportation hub for the entire state.

Professional & Business Services is expected to be a distant second driver of industrial space development at 1.3 million square feet of new demand through 2035, followed by Education & Health Services (1.1 million square feet).

### 3.1.2.2 Baseline “KAC Bridge” Scenario

The baseline growth scenario assuming the construction of a Knik Arm Crossing before 2020 is associated with estimated demand for 9.7 million square feet of new industrial space over the next twenty years. Overall, that represents a 3% reduction in total new growth as a result of the Knik Arm Crossing.

Growth in new industrial space demand is driven by an estimated addition of 11,035 new industrial-related jobs through 2035. Figure 3-7 provides detailed findings for this scenario.



**Figure 3-7 Baseline “KAC Bridge” Scenario Industrial Space Demand, MOA**

Baseline KAC Bridge Scenario Employment Sector	Jobs in Industrial Space			Avg. Space	Industrial Space Need (000s of sq. ft.)			
	2015	2035	'15-'35	Per Job	2015	2025	2035	'15-'35
Mining	3,230	3,705	475	345	1,225.8	1,370.0	1,406.0	180.2
Construction	4,250	4,850	600	471	2,202.2	2,461.2	2,513.1	310.9
Manufacturing	2,280	2,660	380	1,620	4,063.0	4,570.8	4,740.1	677.1
Wholesale Trade	4,275	5,605	1,330	643	3,025.1	3,764.6	3,966.3	941.2
Retail Trade	2,640	3,270	630	909	2,638.3	3,058.0	3,267.9	629.6
Transportation, Warehousing & Utilities	8,260	10,220	1,960	1,547	14,053.3	16,316.1	17,388.0	3,334.7
Information	1,140	1,290	150	467	585.6	662.7	662.7	77.1
Financial Activities	1,740	2,000	260	467	893.8	1,006.9	1,027.4	133.6
Professional & Business Services	6,790	9,275	2,485	467	3,488.0	4,297.1	4,764.6	1,276.6
Education & Health Services	2,470	3,510	1,040	909	2,468.4	3,078.0	3,507.7	1,039.3
Leisure & Hospitality	2,505	3,345	840	555	1,530.1	1,860.0	2,043.2	513.1
Other Services	4,350	5,175	825	598	2,862.4	3,306.6	3,405.3	542.9
Government	3,090	3,150	60	657	2,232.5	2,254.1	2,275.8	43.3
<b>Total</b>	<b>47,020</b>	<b>58,055</b>	<b>11,035</b>	<b>774</b>	<b>41,268.5</b>	<b>48,006.1</b>	<b>50,968.1</b>	<b>9,699.6</b>

Source: Cardno, Inc.

Like the “No KAC Bridge” scenario, Transportation, Warehousing, & Utilities sector is expected to generate the most developed space growth. Professional & Business Services is again a distant second driver of industrial space development at 1.28 million square feet of new demand through 2035, followed by Education & Health Services (1.04 million square feet).

### 3.1.2.3 Low Growth “KAC Bridge” Scenario

Assuming the recent plummet in oil prices is sustained for a longer period and the regional economy experiences far more sluggish performance through 2035, new industrial space demand under this scenario is roughly half of the Baseline scenarios.

**Figure 3-8 Low Growth “KAC Bridge” Scenario Industrial Space Demand, MOA**

Low Growth KAC Bridge Scenario Employment Sector	Jobs in Industrial Space			Avg. Space	Industrial Space Need (000s of sq. ft.)			
	2015	2035	'15-'35	Per Job	2015	2025	2035	'15-'35
Mining	3,230	3,325	95	345	1,225.8	1,297.9	1,261.8	36.0
Construction	4,250	4,450	200	471	2,202.2	2,331.7	2,305.8	103.6
Manufacturing	2,280	2,375	95	1,620	4,063.0	4,232.3	4,232.3	169.3
Wholesale Trade	4,275	5,130	855	643	3,025.1	3,562.9	3,630.1	605.0
Retail Trade	2,640	2,985	345	909	2,638.3	2,893.1	2,983.1	344.8
Transportation, Warehousing & Utilities	8,260	9,310	1,050	1,547	14,053.3	15,482.5	15,839.8	1,786.5
Information	1,140	1,170	30	467	585.6	631.9	601.0	15.4
Financial Activities	1,740	1,840	100	467	893.8	945.2	945.2	51.4
Professional & Business Services	6,790	8,470	1,680	467	3,488.0	4,063.4	4,351.0	863.0
Education & Health Services	2,470	3,200	730	909	2,468.4	2,908.1	3,197.9	729.5
Leisure & Hospitality	2,505	3,045	540	555	1,530.1	1,759.2	1,860.0	329.9
Other Services	4,350	4,725	375	598	2,862.4	3,109.1	3,109.1	246.7
Government	3,090	3,090	0	657	2,232.5	2,221.6	2,232.5	0.0
<b>Total</b>	<b>47,020</b>	<b>53,115</b>	<b>6,095</b>	<b>774</b>	<b>41,268.5</b>	<b>45,438.9</b>	<b>46,549.6</b>	<b>5,281.1</b>

Source: Cardno, Inc.

The Low Growth scenario is associated with an estimated demand for 5.28 million square feet of new industrial space over the next twenty years. Growth in new industrial space demand is

driven by an estimated addition of 6,095 new industrial-related jobs through 2035. Figure 3-8 provides detailed findings for this scenario.

Demand for new industrial space types is significantly weaker under this scenario, with less than 100,000 square feet of new space demand from Mining, Information, Financial Activities, and Government sectors over the twenty-year planning period. Weakness in Government employment, driven by both diminished oil revenues at the state level and diminished population and economic growth, thus lower service demands, has negligible new employment and space demand within the MOA.

### 3.2 Industrial Land Demand Forecasts

#### 3.2.1 Key Floor Area Ratio Assumptions

The primary factor for converting estimates of industrial space demand into industrial land demand is the floor area ratio (FAR), or the percentage of an industrial land site that is covered by the building footprint. Figure 3-9 displays the assumed FARs for each of the major industry sectors in the Municipality.

**Figure 3-9 Industrial Floor Area Ratio (FAR) Assumptions by Sector and Forecast Year, MOA**

Employment Sector	<u>Assumed Floor Area Ratio (FAR)</u>				
	2015	2020	2025	2030	2035
Mining	0.15	0.15	0.16	0.16	0.17
Construction	0.17	0.17	0.18	0.18	0.19
Manufacturing	0.32	0.33	0.34	0.34	0.35
Wholesale Trade	0.42	0.43	0.44	0.45	0.46
Retail Trade	0.30	0.31	0.32	0.32	0.33
Transportation, Warehousing & Utilities	0.17	0.17	0.18	0.18	0.19
Information	0.41	0.42	0.43	0.44	0.45
Financial Activities	0.23	0.24	0.24	0.25	0.25
Professional & Business Services	0.23	0.24	0.24	0.25	0.25
Education & Health Services	0.26	0.27	0.27	0.28	0.29
Leisure & Hospitality	0.22	0.23	0.23	0.24	0.24
Other Services	0.32	0.33	0.34	0.34	0.35
Government	0.24	0.25	0.25	0.26	0.26

Source: Cardno, Inc. based on Municipality of Anchorage Industrial Land Supply Analysis

FARs for 2015 are assumed to be consistent with average FARs for each sector as estimated in Table 21 of *Volume II: Industrial Lands Inventory*. Every five years thereafter, it is assumed that FARs increase by 2.5% reflecting higher land prices in the land constrained Anchorage Bowl and the likely tendency for employers to utilize land with higher intensity given land cost and potentially the cost of redevelopment or reuse of previously existing improvements.

Applying FARs to industrial space need yields a calculation of “net” industrial land demand, which comprises the building footprint, parking and access, and associated landscaping. However, true or “gross” industrial land need requires public facilities such as roads, sidewalks,

setbacks, and other land use and zoning code requirements in addition to the core economic use of the property. Accordingly, a 10% “gross up” factor was utilized.

### 3.2.2 Twenty-Year MOA Industrial Land Demand Forecasts

20-year industrial land demand projections are generally summarized as follows by MOA growth scenario.

#### 3.2.2.1 **Baseline “No KAC Bridge” Scenario**

Under this baseline scenario, the MOA would be expected to see demand for 581.7 acres of industrial land through 2035. Over two-thirds of that demand would be driven by Transportation, Warehousing and Utilities uses, again greatly anchored by the airport and port. Professional & Business Services is a distant second driver of new industrial land need over the next twenty years at 94.5 acres of new demand. Figure 3-10 provides detailed analysis results.

**Figure 3-10 Baseline “No KAC Bridge” Scenario Industrial Land Demand (Gross Acreage)**

Baseline No KAC Bridge Scenario Employment Sector	Industrial Space Need (000s of sq. ft.)			Predicted Land Need (Acres)			
	2015	2035	'15-'35	2015	2025	2035	'15-'35
Mining	1,225.8	1,406.0	180.2	206.4	219.5	214.4	8.1
Construction	2,202.2	2,539.0	336.8	327.1	348.0	341.7	14.6
Manufacturing	4,063.0	4,740.1	677.1	320.6	343.3	338.9	18.3
Wholesale Trade	3,025.1	3,966.3	941.2	181.9	215.4	216.0	34.2
Retail Trade	2,638.3	3,282.9	644.6	222.1	246.2	250.3	28.3
Transportation, Warehousing & Utilities	14,053.3	17,507.1	3,453.8	2,087.5	2,323.7	2,356.0	268.5
Information	585.6	662.7	77.1	36.1	38.8	37.0	0.9
Financial Activities	893.8	1,037.7	143.9	98.1	105.2	103.2	5.1
Professional & Business Services	3,488.0	4,800.5	1,312.5	383.0	450.9	477.5	94.5
Education & Health Services	2,468.4	3,527.7	1,059.3	239.7	285.5	310.4	70.7
Leisure & Hospitality	1,530.1	2,052.4	522.3	175.6	204.2	213.4	37.8
Other Services	2,862.4	3,405.3	542.9	225.9	248.4	243.5	17.6
Government	2,232.5	2,290.3	57.8	234.9	226.5	218.3	-16.6
<b>Total</b>	<b>41,268.5</b>	<b>51,218.0</b>	<b>9,949.5</b>	<b>4,738.9</b>	<b>5,255.7</b>	<b>5,320.7</b>	<b>581.7</b>

Source: Cardno, Inc.

Although the Government sector was estimated to see no new growth and no net loss in industrial space need, the sector is estimated to reduce its industrial land footprint by roughly 17 acres over the next twenty years under this scenario. The primary reason for the reduction is the assumption that future expansion, and retention of existing employment, would occur at higher intensity of use.

#### 3.2.2.2 **Baseline “KAC Bridge” Scenario**

Under this baseline scenario, the MOA would be expected to see demand for 552.4 acres of industrial land through 2035. Transportation, Warehousing and Utilities would still be the primary driver of new industrial land usage in Anchorage, followed by Professional & Business Services at a distant second (91.0 acres). Government industrial land usage is expected to decline slightly with the assumption that future new space in general is at higher intensity, and thus the portion of the sector that uses industrial facility types generally consolidates rather than expands. Figure 3-11 provides detailed analysis results.

**Figure 3-11 Baseline “KAC Bridge” Scenario Industrial Land Demand (Gross Acreage)**

Baseline KAC Bridge Scenario Employment Sector	Industrial Space Need (000s of sq. ft.)			Predicted Land Need (Acres)			
	2015	2035	'15-'35	2015	2025	2035	'15-'35
Mining	1,225.8	1,406.0	180.2	206.4	219.5	214.4	8.1
Construction	2,202.2	2,513.1	310.9	327.1	348.0	338.2	11.1
Manufacturing	4,063.0	4,740.1	677.1	320.6	343.3	338.9	18.3
Wholesale Trade	3,025.1	3,966.3	941.2	181.9	215.4	216.0	34.2
Retail Trade	2,638.3	3,267.9	629.6	222.1	245.0	249.2	27.1
Transportation, Warehousing & Utilities	14,053.3	17,388.0	3,334.7	2,087.5	2,306.9	2,340.0	252.4
Information	585.6	662.7	77.1	36.1	38.8	37.0	0.9
Financial Activities	893.8	1,027.4	133.6	98.1	105.2	102.2	4.1
Professional & Business Services	3,488.0	4,764.6	1,276.6	383.0	449.1	473.9	91.0
Education & Health Services	2,468.4	3,507.7	1,039.3	239.7	284.5	308.6	68.9
Leisure & Hospitality	1,530.1	2,043.2	513.1	175.6	203.2	212.5	36.8
Other Services	2,862.4	3,405.3	542.9	225.9	248.4	243.5	17.6
Government	2,232.5	2,275.8	43.3	234.9	225.7	216.9	-18.0
<b>Total</b>	<b>41,268.5</b>	<b>50,968.1</b>	<b>9,699.6</b>	<b>4,738.9</b>	<b>5,233.1</b>	<b>5,291.3</b>	<b>552.4</b>

Source: Cardno, Inc.

### 3.2.2.3 Low Growth “KAC Bridge” Scenario

Assuming sustained weakness in the Alaska and Anchorage economies due to longer-term low crude oil prices or other similarly unexpected economic shocks, the MOA is estimated to see as little as 93.5 acres of new industrial land demand through 2035. Figure 3-12 provides detailed analysis results.

**Figure 3-12 Low Growth “KAC Bridge” Scenario Industrial Land Demand (Gross Acreage)**

Low Growth KAC Bridge Scenario Employment Sector	Industrial Space Need (000s of sq. ft.)			Predicted Land Need (Acres)			
	2015	2035	'15-'35	2015	2025	2035	'15-'35
Mining	1,225.8	1,261.8	36.0	206.4	208.0	192.4	-13.9
Construction	2,202.2	2,305.8	103.6	327.1	329.7	310.3	-16.8
Manufacturing	4,063.0	4,232.3	169.3	320.6	317.9	302.6	-18.1
Wholesale Trade	3,025.1	3,630.1	605.0	181.9	203.9	197.7	15.8
Retail Trade	2,638.3	2,983.1	344.8	222.1	231.8	227.5	5.4
Transportation, Warehousing & Utilities	14,053.3	15,839.8	1,786.5	2,087.5	2,189.0	2,131.6	44.1
Information	585.6	601.0	15.4	36.1	37.0	33.5	-2.5
Financial Activities	893.8	945.2	51.4	98.1	98.8	94.0	-4.1
Professional & Business Services	3,488.0	4,351.0	863.0	383.0	424.6	432.8	49.8
Education & Health Services	2,468.4	3,197.9	729.5	239.7	268.8	281.4	41.6
Leisure & Hospitality	1,530.1	1,860.0	329.9	175.6	192.2	193.4	17.8
Other Services	2,862.4	3,109.1	246.7	225.9	233.5	222.3	-3.6
Government	2,232.5	2,232.5	0.0	234.9	222.5	212.8	-22.1
<b>Total</b>	<b>41,268.5</b>	<b>46,549.6</b>	<b>5,281.1</b>	<b>4,738.9</b>	<b>4,957.8</b>	<b>4,832.4</b>	<b>93.5</b>

Source: Cardno, Inc.

Although there is no net employment loss in any industry over the 20-year period under this low growth scenario, higher efficiency of industrial land usage and consolidation results in a declining industrial footprint in seven of the thirteen primary industry sectors. Government, Mining, and Construction have very similar consolidation projections at a roughly 13-20 acre footprint reduction within the MOA. Professional & Business Services leads among industry

sectors expanding industrial land footprint under the low growth scenario, followed by Transportation, Warehousing & Utilities and Education & Health Services.

### **3.2.3 Twenty-Year MOA Industrial Land Demand by Production, Distribution & Repair**

As part of the industrial land supply update, the Municipality of Anchorage further classified the different NAICS economic sectors based on the “PDR” or Production, Distribution, and Repair recommended methodology by the American Planning Association. Industry sectors most likely to utilize industrial land are thereby given a more formal description, particularly for informing land use policy. Additional discussion of industrial “PDR” uses in Anchorage is also found on pages 25-28 of *Volume II: Industrial Land Supply*.

Figures 3-13, 3-14, and 3-15 summarize projected industrial land demand within the MOA according to this methodology for the Baseline “No KAC Bridge,” Baseline “KAC Bridge,” and Low Growth “KAC Bridge” scenarios, respectively. All estimates of industrial land demand through the lens of PDR sectors, or core industrial sectors versus all sectors that utilize industrial land, are consistent with results expressed in the previous subsection. Results with PDR sector consideration should be viewed as having greater industry sector detail, particularly for the unique economy of the MOA.

#### **3.2.3.1 Baseline “No KAC Bridge” Scenario**

Of total industrial land demand under this scenario, key “PDR” sectors – those that are classically considered industrial users or have industrial economic function – drive an estimated 348 acres of industrial land need through 2035. Industrial land need for those sectors comprises 60% of the total estimated for this growth scenario.

- Ground transportation and freight services is the single largest source of industrial land need over the next twenty years at roughly 166 acres.
- Airport, railroad, and marine transportation functions will require the second-largest new need for industrial land at 75.9 acres.
- Wholesale trade business is projected to be a distant third in terms of twenty-year industrial land need at 34.2 acres.

The remaining 40% of total industrial land demand through 2035, or 234.2 acres, will be driven by non-PDR sectors such as Retail and Education & Health Services. Estimates for these sectors should be viewed as industrial land demand for activities preferred to be in lower-cost and more flexibly spaced industrial facilities and land than on true office/commercial parcels.

But unlike PDR-defined sectors, who utilize industrial sites for core business functions, non-PDR sectors have greater flexibility between commercial land and industrial land for intended uses. This includes prevailing storage of inventory and containers on site by major retailers among other examples in Anchorage, as well increased construction and usage of traditional office buildings for consolidated operations in the Professional & Business Services sector, which might otherwise have utilized lower-cost business park space for office employment function.

**Figure 3-13 Baseline “No KAC Bridge” Scenario Industrial Land Need by Key PDR Sectors**

<b>Baseline No KAC Bridge Scenario</b>		
<b>Economic Sector</b>	<b>20-Year Demand</b>	
<b>Key PDR Industrial Land-Utilizing Sectors</b>	<b>Acres</b>	<b>% Share</b>
<b>Manufacturing and Natural Resource Production</b>	<b>26.3</b>	<b>4.5%</b>
Manufacturing (except non-metal. Mineral prod.)	17.1	2.9%
Non-metallic Mineral Products and Quarrying	4.9	0.8%
Agriculture, Nurseries, and Tree Production	0.0	0.0%
<b>Construction</b>	<b>14.6</b>	<b>2.5%</b>
<b>Vehicle and Equipment Repair</b>	<b>4.0</b>	<b>0.7%</b>
<b>Utilities - Power, Water, and Sewage</b>	<b>15.0</b>	<b>2.6%</b>
<b>Airport, Railroad, and Marine Transportation</b>	<b>75.9</b>	<b>13.0%</b>
<b>Warehousing and Ground Transportation</b>	<b>177.5</b>	<b>30.5%</b>
Warehousing	11.8	2.0%
Ground Transportation and Freight Services	165.7	28.5%
<b>Wholesale Trade</b>	<b>34.2</b>	<b>5.9%</b>
<b><i>Key PDR Industrial Land-Utilizing Sectors Total</i></b>	<b><i>347.6</i></b>	
<b>Other Sectors Utilizing Industrial Land</b>		
<b>Retail Trade</b>	<b>28.3</b>	<b>4.9%</b>
<b>Communications and Information</b>	<b>0.9</b>	<b>0.2%</b>
<b>Finance, Real Estate, Leasing, and Self-Storage</b>	<b>5.1</b>	<b>0.9%</b>
Finance, Insurance, and Real Estate Services	0.6	0.1%
Leasing, Equipment Rental, and Self-Storage	4.4	0.8%
<b>Business, Professional, and Technical Services</b>	<b>94.5</b>	<b>16.3%</b>
Professional & Business Services	57.9	9.9%
Services to Buildings and Facilities	31.1	5.3%
Waste Management, Salvage, and Snow Disposal	5.5	1.0%
<b>Education and Health Services</b>	<b>70.7</b>	<b>12.1%</b>
<b>Leisure and Accommodations</b>	<b>37.8</b>	<b>6.5%</b>
<b>Personal and Other Services (except Repair)</b>	<b>13.1</b>	<b>2.3%</b>
<b>Residences</b>	<b>0.4</b>	<b>0.1%</b>
<b>Government and Public Safety</b>	<b>-16.6</b>	<b>-2.9%</b>
<b><i>Other Sectors Utilizing Industrial Land Total</i></b>	<b><i>234.2</i></b>	
<b>Grand Total All Sectors</b>	<b>581.7</b>	

Source: Cardno, Inc.

### **3.2.3.2 Baseline “KAC Bridge” Scenario**

As with previous results, the presence of the Knik Arm Crossing by 2020 is not expected to significantly change industrial land demand among core industrial PDR sectors or non-PDR sectors. Industrial land demand under this scenario from key “PDR” sectors drives an estimated 328 acres of industrial land need through 2035. Ground transportation and freight services, airport, railroad, and marine transportation, and wholesale trade businesses are anticipated to similarly lead PDR-defined sector industrial land need over the next twenty years.

The remaining need, or 224 acres will be driven by non-PDR sectors, particularly Education & Health Services (68.9 acres), Professional & Business Services (55.7 acres), and Services to Buildings & Facilities (29.9 acres). Figure 3-14 provides detailed analysis results.

**Figure 3-14 Baseline “KAC Bridge” Scenario Industrial Land Need by Key Sectors**

Baseline KAC Bridge Scenario		
Economic Sector	20-Year Demand	
Key PDR Industrial Land-Utilizing Sectors	Acres	% Share
<b>Manufacturing and Natural Resource Production</b>	<b>26.3</b>	<b>4.5%</b>
Manufacturing (except non-metal. Mineral prod.)	17.1	2.9%
Non-metallic Mineral Products and Quarrying	4.9	0.8%
Agriculture, Nurseries, and Tree Production	0.0	0.0%
<b>Construction</b>	<b>11.1</b>	<b>1.9%</b>
<b>Vehicle and Equipment Repair</b>	<b>4.0</b>	<b>0.7%</b>
<b>Utilities - Power, Water, and Sewage</b>	<b>14.1</b>	<b>2.4%</b>
<b>Airport, Railroad, and Marine Transportation</b>	<b>71.4</b>	<b>12.3%</b>
<b>Warehousing and Ground Transportation</b>	<b>166.9</b>	<b>28.7%</b>
Warehousing	11.1	1.9%
Ground Transportation and Freight Services	155.8	26.8%
<b>Wholesale Trade</b>	<b>34.2</b>	<b>5.9%</b>
<b>Key PDR Industrial Land-Utilizing Sectors Total</b>	<b>328.0</b>	
<b>Other Sectors Utilizing Industrial Land</b>		
<b>Retail Trade</b>	<b>27.1</b>	<b>4.7%</b>
<b>Communications and Information</b>	<b>0.9</b>	<b>0.2%</b>
<b>Finance, Real Estate, Leasing, and Self-Storage</b>	<b>4.1</b>	<b>0.7%</b>
Finance, Insurance, and Real Estate Services	0.5	0.1%
Leasing, Equipment Rental, and Self-Storage	3.5	0.6%
<b>Business, Professional, and Technical Services</b>	<b>91.0</b>	<b>15.6%</b>
Professional & Business Services	55.7	9.6%
Services to Buildings and Facilities	29.9	5.1%
Waste Management, Salvage, and Snow Disposal	5.3	0.9%
<b>Education and Health Services</b>	<b>68.9</b>	<b>11.8%</b>
<b>Leisure and Accommodations</b>	<b>36.8</b>	<b>6.3%</b>
<b>Personal and Other Services (except Repair)</b>	<b>13.1</b>	<b>2.3%</b>
<b>Residences</b>	<b>0.4</b>	<b>0.1%</b>
<b>Government and Public Safety</b>	<b>-18.0</b>	<b>-3.1%</b>
<b>Other Sectors Utilizing Industrial Land Total</b>	<b>224.4</b>	
<b>Grand Total All Sectors</b>	<b>552.4</b>	

Source: Cardno, Inc.

### 3.2.3.3 Low Growth “KAC Bridge” Scenario

Dramatically slower economic growth, as modeled by the Low Growth “KAC Bridge” scenario, yield sizably different industrial land need estimates for key industrial PDR and non-PDR sectors. With sustained lower oil prices or any other longer-term economic shock that achieves sustained, poor economic performance in Anchorage, non-PDR industry sectors will drive the

vast majority of industrial land need during the planning period at 83.1 acres or 89% of the scenario total.

**Figure 3-15 Low Growth “KAC Bridge” Scenario Industrial Land Need by Key Sectors**

Low Growth KAC Bridge Scenario		
Economic Sector	20-Year Demand	
Key PDR Industrial Land-Utilizing Sectors	Acres	% Share
<b>Manufacturing and Natural Resource Production</b>	<b>-32.0</b>	<b>-5.5%</b>
Manufacturing (except non-metal. Mineral prod.)	-16.9	-2.9%
Non-metallic Mineral Products and Quarrying	-7.6	-1.3%
Agriculture, Nurseries, and Tree Production	0.0	0.0%
<b>Construction</b>	<b>-16.8</b>	<b>-2.9%</b>
<b>Vehicle and Equipment Repair</b>	<b>-0.8</b>	<b>-0.1%</b>
<b>Utilities - Power, Water, and Sewage</b>	<b>2.5</b>	<b>0.4%</b>
<b>Airport, Railroad, and Marine Transportation</b>	<b>12.5</b>	<b>2.1%</b>
<b>Warehousing and Ground Transportation</b>	<b>29.2</b>	<b>5.0%</b>
Warehousing	1.9	0.3%
Ground Transportation and Freight Services	27.2	4.7%
<b>Wholesale Trade</b>	<b>15.8</b>	<b>2.7%</b>
<b>Key PDR Industrial Land-Utilizing Sectors Total</b>	<b>10.3</b>	
<b>Other Sectors Utilizing Industrial Land</b>		
<b>Retail Trade</b>	<b>5.4</b>	<b>0.9%</b>
<b>Communications and Information</b>	<b>-2.5</b>	<b>-0.4%</b>
<b>Finance, Real Estate, Leasing, and Self-Storage</b>	<b>-4.1</b>	<b>-0.7%</b>
Finance, Insurance, and Real Estate Services	-0.5	-0.1%
Leasing, Equipment Rental, and Self-Storage	-3.6	-0.6%
<b>Business, Professional, and Technical Services</b>	<b>49.8</b>	<b>8.6%</b>
Professional & Business Services	30.5	5.2%
Services to Buildings and Facilities	16.4	2.8%
Waste Management, Salvage, and Snow Disposal	2.9	0.5%
<b>Education and Health Services</b>	<b>41.6</b>	<b>7.2%</b>
<b>Leisure and Accommodations</b>	<b>17.8</b>	<b>3.1%</b>
<b>Personal and Other Services (except Repair)</b>	<b>-2.7</b>	<b>-0.5%</b>
<b>Residences</b>	<b>-0.1</b>	<b>0.0%</b>
<b>Government and Public Safety</b>	<b>-22.1</b>	<b>-3.8%</b>
<b>Other Sectors Utilizing Industrial Land Total</b>	<b>83.1</b>	
<b>Grand Total All Sectors</b>	<b>93.5</b>	

Source: Cardno, Inc.

Such an outcome would largely be due to continued economic growth in the MOA, but a greater share of it would be from industries that support population rather than industrial activity, such as Retail, Business & Professional Services, and tourism.

With weaker economic performance statewide, population growth might be slower than more robust economic scenarios, but weaker economies elsewhere in the state will cause Anchorage



to act more like a population magnet from within Alaska to actual or perceived greater economic opportunity. Transition of existing population, due to aging and need for different services and greater volume of services particularly healthcare will continue to drive PDR sector growth regardless of key industrial sector business performance.

Core industrial, or PDR industry sectors are estimated to only require 10.3 new net acres of land under the “worst case” scenario. Although transportation-related sectors would be expected to grow though more modestly, Manufacturing, Construction, and Repair businesses would experience sufficient economic weakness to remain constant in current facility footprint or consolidate operations.

### 3.2.4 Industrial Acreage by Typical Business Site Sizes

A final expression of industrial land need for Municipality consideration regards typical site sizes needed by different businesses based on size of current and planned future operations. Many central city jurisdictions that are largely built out, such as Anchorage, are frequently left with industrial-zoned parcels that are smaller in size, irregular in shape, location, or would be difficult to assemble for a size of size and shape suitable for the plans of a specific business and its economic function.

Accordingly, Figure 3-16 details estimated 20-year need for industrial land by typical site sizes for individual businesses or business park types for multi-tenant development. The distribution of demand by acreage is based on U.S. Department of Commerce CenStats County Business Pattern data, which provides details of employer sizes by standard NAICS sectors to the five-digit level. Analysis implicitly assumes that the current distribution of business by employment count size will continue into the future. Here “Anchor” refers to a very sizeable, single industrial user that would be key to either an existing or new industry in Anchorage.

**Figure 3-16 MOA 20-Year Industrial Land Demand by Common Site/Employer Size**

	Demand Projections - Gross Acreage			
	Typical Acreage	Base No Bridge	Base w/Bridge	Low w/Bridge
Anchor or Large Park	50 or over	46.5	44.2	-
Large User or Mid Park	25.0 - 50.0	69.8	66.3	-
Medium User or Smaller Park	10.0 - 25.0	145.4	138.1	42.1
Expanding User	5.0 - 10.0	174.5	165.7	28.0
Small Business: Lower Intensity	2.0 - 5.0	69.8	66.3	11.2
Small Business: Higher Intensity	1.0 - 2.0	52.4	49.7	8.4
Very Small Business	< 1.0 Acre	23.3	22.1	3.7
<b>Totals</b>		<b>581.7</b>	<b>552.4</b>	<b>93.5</b>

Source: Cardno, Inc.

- **Anchor User or Large Park (50+Acres):** Only one industrial site in this size range will be required under both Baseline scenarios at just under 50 acres with or without a Knik Arm Crossing. Assuming longer-term weaker economic performance under the third scenario, the MOA would not be expected to see demand for a site over 50 acres in size.

- **Large User or Mid Park (25 to 50 acres):** Roughly two or three sites would likely be required within the Municipality under both Baseline growth scenarios. In either case, a single business park with many users or a larger single, unique user could be expected. No site between 25 acres and 50 acres in size would likely be needed under longer-term economic weakness expressed by the third growth scenario.
- **Medium User or Smaller Park (10 to 25 acres):** Between five and fifteen sites between 10 and 25 acres will be needed under both Baseline growth scenarios. Under the low growth scenario, roughly two to three sites in this category will likely see development need through 2035.
- **Expanding User (5 to 10 acres):** Twenty to forty industrial sites will be demanded by firms under both Baseline growth scenarios through the MOA during the planning period. Although the category is labeled expanding users – denoting single users that acquire a site well in excess of existing operations to accommodate significant future growth – multiuser or tenant parks can certainly comprise part of size category land need. Under the low growth scenario, the MOA would be expected to need two to five sites.
- **Small Businesses: Lower Intensity (2 to 5 Acres):** The MOA will see demand for this site size category in the range of 14 to 35 sites under both Baseline growth scenarios for smaller firms that will frequently require a smaller building footprint and greater outdoor space need. With far slower economic growth, the MOA is expected to see demand of two to five sites for this demand category.
- **Small Businesses: Higher Intensity (1 to 2 Acres):** Under both Baseline scenarios, the MOA can expect new demand for such sites ranging from roughly 25 to 50 business locations through 2035. With far more sluggish economic growth, only four to eight new sites in this size category will be required by local industry.
- **Very Small Business (Less than 1 Acre):** Miscellaneous demand for various, small industrial sites is estimated to be a combined 22 to 23 acres under both Baseline scenarios. Most site demand will be close to one acre given decreasing site flexibility as parcel size decreases. Under the worst-case scenario, the MOA would see a combined demand for just under four acres for this size category.

### 3.3 Potential Anchorage Marijuana Industry Impacts

On November 4, 2014, a majority of Alaska voters approved Ballot Measure 2-13PSUM “An Act to Tax and Regulate the Production, Sale, and Use of Marijuana.” Most similarly to Colorado and Washington, the approved measure legalized private recreational possession and growing of marijuana, within certain limits, statewide.<sup>10</sup> Approval of the ballot measure occurred during the final stages of this Industrial Land Assessment update process. At the request of the Anchorage Assembly, the Industrial Land Assessment update has taken up consideration of the potential impacts to industrial space and land need within the Municipality due to potential legalized marijuana industry presence in Anchorage.

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<sup>10</sup> [http://ballotpedia.org/Alaska\\_Marijuana\\_Legalization,\\_Ballot\\_Measure\\_2\\_%282014%29](http://ballotpedia.org/Alaska_Marijuana_Legalization,_Ballot_Measure_2_%282014%29)

### **3.3.1 Industry Impact Methodology**

#### **3.3.1.1 *Industry Context***

Legalization of recreational use of marijuana in Alaska, and specifically Anchorage, poses new and unique industry growth that would require industrial space for various, licensed marijuana growing operations as well as manufacturing and distribution of regulated recreational marijuana and marijuana-related products.

Despite legalization in Alaska, as well as in Colorado, Washington, and Oregon, marijuana continues to be illegal at the federal level. This poses unique industry growth potential in a somewhat “self-contained” or geographically isolated manner within the jurisdiction of the State:

- Shipment and/or transport of marijuana plants, plant material, or products would make those products subject to Federal interstate commerce law, where marijuana is deemed an illegal/controlled substance.
- Financing of marijuana industry, including insurance, payroll, and other related services, by federally-chartered financial institutions is deemed illegal by the Federal government.<sup>11</sup>

Therefore, marijuana and marijuana-related products for use and consumption within Alaska will require most if not all aspects of product growth, harvest, manufacturing, and distribution to be located within the State of Alaska, or until such time as Federal law is changed pertaining to marijuana. And as the commercial, transportation, and population center for the state, Anchorage will be the likely location for a significant share of statewide marijuana growth, harvest, product manufacture, warehousing, and distribution.

#### **3.3.1.2 *Anchorage Industrial Space Demand: Denver, Colorado Case Study***

To understand the potential demand for industrial space and land within the Municipality of Anchorage from potential Alaska marijuana industry growth, a case study approach was adopted to identify a comparable situation to what may occur in Anchorage with growth of a statewide marijuana industry.

Denver, Colorado poses the most comparable and informative case study for Anchorage industry demand for industrial space and land. Recreational marijuana was legalized by Colorado voters in 2012, and it is the understanding of Cardno that Alaska’s Ballot Measure 2 was modeled on the Colorado marijuana legalization effort. Although Washington has also legalized recreational marijuana in somewhat similar fashion, implementation of marijuana regulations and authorization of retail establishments has not had as long of a time period and study as has Colorado.

#### **3.3.1.3 *Case Study Intent & Limitations***

At present time, much continues to be uncertain about industry formation and regulation within the State of Alaska and specifically within the Municipality of Anchorage. On May 9, 2015, Alaska House Bill 123 was signed into law by Governor Walker establishing a Marijuana Control

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<sup>11</sup> [http://www.nytimes.com/2015/02/08/business/marijuana-industry-in-colorado-eager-for-its-own-bank-waits-on-the-fed.html?\\_r=0](http://www.nytimes.com/2015/02/08/business/marijuana-industry-in-colorado-eager-for-its-own-bank-waits-on-the-fed.html?_r=0)

Board that will be in charge of crafting specific statewide marijuana industry regulation, as well as oversee enforcement.<sup>12</sup>

Due to there being only early progress with regulation and implementation at the State level, the Anchorage Assembly has not yet taken up many specific issues related to marijuana industry. As of the production of this report, the Anchorage Assembly has addressed the issue of public use and potentially hazardous manufacturing process for marijuana oil concentrates.<sup>13</sup> Local regulation of commercial marijuana plant growth, harvesting, value-added product manufacture, storage, distribution, and retailing will be settled by the MOA in the near future as a result.

Estimation of the potential demand for industrial space and land by marijuana-related industry in Anchorage is, therefore, a highly speculative exercise given so much regulatory uncertainty at both the State and local level.

- Further complicating matters will be the varying stringency of marijuana-related ordinances approved by various local jurisdictions throughout the Alaska in addition to Anchorage. Local definitions of public use as well as local zoning ordinance and business license ordinance, among other things, are not yet settled elsewhere. This further obscures the potential comparability of statewide marijuana product demand , usage, and thus Anchorage marijuana industry presence and growth to industry in Denver.
- Finally, per the Alaska Constitution, Ballot Measure 2 can possibly be repealed by the Alaska Legislature on February 24, 2017, two years to the date from when marijuana generally became legal statewide per the ballot measure.<sup>14</sup> Given the two-year window, it is uncertain what effect this will have on typically five-years or more lease arrangements for industrial and commercial space, longer-term leases on land, as well as duration of project construction financing and operation financing among other things.

The resulting modeling effort for both local marijuana industry growth and its demand for industrial space is primarily intended to inform this Industrial Lands Assessment for the Municipality. As a 20-year analysis of the adequacy of industrial land within the Anchorage Bowl and Eagle River-Chugiak areas, simplifying assumptions are both necessary – due to significant uncertainty about regulations - and appropriate for the intent of the analysis for land use planning and policy.

Accordingly, this analysis of marijuana industry growth and resulting industrial space and land demand within the Municipality makes the following simplifying assumption in order for study to be possible:

- *Municipality of Anchorage marijuana industry regulation and ultimate industry outcome is assumed to be both permanent and reasonably similar in scope and outcome as found in Denver, Colorado.*

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<sup>12</sup> <http://www.adn.com/article/20150506/bill-establishing-marijuana-control-board-alaska-signed-law>

<sup>13</sup> <http://www.muni.org/Departments/police/Pages/KnowYourGrow.aspx>

<sup>14</sup> <http://www.adn.com/article/20150506/bill-establishing-marijuana-control-board-alaska-signed-law>

Although greatly simplifying in nature, the assumption allows ample data about the Denver, Colorado marijuana industry and its industrial space demands to be utilized to inform potential industry impacts to industrial space and land supply in Anchorage.

### 3.3.1.4 Methodological Steps

For purposes of Anchorage marijuana industry industrial real estate demand quantification, the following four basic methodological steps were utilized.

1. Identify Anchorage MSA Marijuana Industry Size Potential as a Percentage of Denver
2. Identify Denver MSA Regional Marijuana Industry-Driven Industrial Market Activity
3. Apply Anchorage MSA Industry Percentage of Denver to Denver MSA Industrial Market Activity
4. Identify City of Denver vs. Suburban MSA Location of Marijuana Industry to Inform Municipality Share of Anchorage MSA for Industry Location

Findings for each are expressed in the following section.

### 3.3.2 Anchorage Marijuana Industry Demand for Industrial Real Estate Findings

#### 3.3.2.1 Anchorage MSA Industry as Percentage of Denver MSA Industry Size

Basically, total potential market for marijuana and marijuana-related products purchases depends on total market area population. Population driving a regional market comprises both permanent population, namely residents of that market, and transient population, or temporary visitors. Figure 3-17 provides a comparison of City of Anchorage, City of Denver, Anchorage MSA, and Denver MSA measures of permanent population and visitor populations.

**Figure 3-17 Anchorage MSA Marijuana Industry Potential as Percentage of Denver MSA**

Consumer Measure		Anchorage	Denver	Year	Anchorage as % of Denver
Population	City	300,950	649,495	2014	46%
	MSA	380,789	2,357,404	2014	16%
Annual Visitor Volume		1,849,700 1/	13,600,000 2/	2012	14%
<b>Potential Marijuana Industry Market: Anchorage as % of Denver:</b>					<b>15%</b>

1/ Statewide visitor counts from "Alaska Visitor Statistics Program VI, Interim Visitor Volume Report Fall/Winter 2013-14", McDowell Group for Alaska Department of Commerce, Community, and Economic Development

2/ Longwoods International for VISIT DENVER, 2013.

SOURCE: U.S. Census Bureau, McDowell Group, and Longwoods International

The comparison results in a weighted average calculation for the population size of the likely marijuana industry in Anchorage relative to the market observed in the Denver, Colorado region.

Overall, the Anchorage MSA is roughly 15% the size of the Denver MSA market area in terms of total permanent and temporary population. As data in Figure 3-17 emphasize, it is important to distinguish the City of Denver and the broader Denver MSA, the latter representing the regional population driving the “Denver” marijuana industry. Though the Municipality of Anchorage is nearly half the size of the City of Denver in terms of population, the Anchorage MSA is only 16% of the Denver-Aurora-Lakewood regional MSA.

It is also important to note that despite the sizeable and economically important tourism industry for Alaska, statewide visitor counts – the great majority of which pass through Anchorage – comprise only 14% of annual visitor counts to the Denver MSA. Denver and the regional marijuana industry there benefit from a major international passenger hub airport and the intersection of Interstate 25 (north-south) and Interstate 70 (east-west), among other things.

In other words, total market depth for a Denver, Colorado-like marijuana industry in Anchorage stands to be a fraction of well-publicized Denver industry size and activity.

### 3.3.2.2 Anchorage MSA & MOA Industrial Need Estimates

Marijuana industry-driven demand for industrial space and land within the Municipality of Anchorage can be estimated methodically with the understanding of how the Anchorage area market for marijuana industry compares to the Denver region.

Figure 3-18 provides a step-by-step quantification of potential industrial space demand (square feet), as well as a translation of space demand into demand for gross industrial land (acres) for the MOA.

**Figure 3-18 Anchorage MSA & MOA Industrial Demand Estimation (Sq. Ft Space & Acres)**

Marijuana Industry Facility Demand Factor	Industrial Space/Land Scenario	
	Low	High
Denver MSA Marijuana-Driven Space Absorption (sq. ft.)	3,500,000	4,500,000
x Anchorage MSA Market (% of Denver MSA)	<u>15%</u>	<u>15%</u>
= Anchorage MSA Potential Industrial Space Need (sq. ft.)	533,500	685,900
x Non-Suburban Share of Industrial Demand	<u>75%</u>	<u>75%</u>
= MOA Industrial Space Need (sq. ft.)	400,100	514,400
÷ Blended Warehouse & Manufacturing Floor Area Ratio	0.245	0.245
÷ Square Feet Per Acre	<u>43,560</u>	<u>43,560</u>
= MOA Equivalent Net Industrial Land Need (acres)	37.5	48.2
÷ Net-to-Gross Conversion Factor	0.9	0.9
= MOA Equivalent Gross Industrial Land Need (acres)	41.7	53.6

SOURCE: Newmark Grubb Knight Ellis, Colliers International, Sherpa Commercial Real Estate, and Cardno

Results of the analysis indicate the following:

- *The Anchorage MSA stands to see between 533,500 square feet and 685,900 square feet of industrial space usage by marijuana-related businesses.*

The finding rests on the generally recognized market research by international real estate brokerage firm Newman Grubb Knight Frank that Denver MSA regional marijuana industry has absorbed roughly 4 million square feet of industrial space since recreational marijuana legalization.<sup>15</sup>

However, there is continued uncertainty regarding total market absorption due to the marijuana industry. Most business transactions, including space commitments, continue to be in cash due to the inability of federally-insured financial institutions to participate in marijuana-related commerce. Local Denver brokerage firm Sherpa Commercial Real Estate estimates a range of industrial space absorption by the marijuana industry at 3.5 million to 4.5 million square feet.<sup>16</sup> Both figures are utilized for Anchorage market potential as a low demand and high demand scenario, respectively.

- *Municipality of Anchorage industrial space demand from marijuana-related industry is estimated to range from 400,100 square feet to 514,400 square feet.*

Review of Denver MSA industrial market reports by Newman Grubb Knight Frank, Colliers International and other brokerages indicates that the vast majority of Denver marijuana industry absorption of industrial space has occurred in existing, sometimes vintage warehouse structures in the East Denver and Aurora market area. This area of most activity is located along the Interstate 70 corridor, which comprises the majority of classic industrial warehouse space served by rail, air, and freeway in the Denver area. Roughly half of this space is located in the City of Denver and half outside of Denver, largely in the suburb Aurora.

Within the Anchorage MSA, the share of regional, existing warehouse industrial space suitable for marijuana growing and value-added production and distribution is most certainly higher than 50%. Denver's I-70 corridor industrial area formed in great measure due to the Aurora location of Stapleton Airport. In contrast, Anchorage has the vast majority of transportation infrastructure and proximate industrial space inventory in the MSA. Specifically, Ship Creek industrial properties as well as industrial areas along the Seward Highway corridor in the Dowling and International area are highly likely locations for marijuana industry facility demand based on observed market behavior in Denver.

A definitive, current inventory of existing industrial warehouse space in the Mat-Su Borough "Core" area of Palmer and Wasilla could not be identified. Therefore, this analysis conservatively assumes the Municipality of Anchorage has 75% of MSA existing space inventory and will similarly capture 75% of MSA marijuana industry space demand, which prefers cheaper, existing warehouse-type space.

- *If all marijuana industry demand for industrial space was hypothetically built as new space, the Municipality would see between 41.7 and 53.6 acres of gross industrial land absorption.*

According to Denver area industry market reports, the marijuana industry has strongly preferred low-cost, existing warehouse or flexible-use industrial space. This is for a few

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<sup>15</sup> 2<sup>nd</sup> Quarter 2014 Denver Industrial Market Trends Report, Newman Grubb Knight Frank.

<sup>16</sup> <http://www.cresherpa.com/cre-industry-blog/category/marijuana>

different reasons, most notably: cheaper space to modify with frequently expensive, high-tech growing equipment; and lower facilities cost as a counterweight to substantial energy consumption and cost, as well as significant water costs. Up to 10% of Denver area electricity consumption is being cited as due to the marijuana industry.<sup>17</sup> In fact, a recent Northwest Power & Conservation Council study of future Pacific Northwest power need with the marijuana industry in Washington in Oregon found that power consumption for the growth of four marijuana plants is the equivalent power needed to run 29 refrigerators.<sup>18</sup>

But the surge in demand for such space has outstripped supply of such space, driving up classic warehouse facility prices and driving vacancy rates very low. This has not only attracted investment in new growing facility warehouse construction, but has also forced other sectors that use similar warehouse space to seek other locations elsewhere in the region including newly constructed space.

Whether new industrial space is built to accommodate local marijuana industry, or new space is constructed to accommodate other sectors that cannot expand in existing space in Anchorage, roughly 42 to 54 acres of gross industrial acreage demand will be driven by marijuana industry according to the assumptions of this analysis.

For the time being, while marijuana is illegal under Federal law, the Anchorage Bowl will likely be the most favored location for marijuana growers given the prevalence of existing and lower-cost, flexible-use warehousing and existing connections to higher capacity, competitively-priced electricity and water. Eagle River-Chugiak, based on best-available information, is likely a less-favored location. In that submarket, facilities and infrastructure would have to be constructed new, this would require financing rendered illegal by federally-insured or federally-chartered financial institutions. While Denver has seen new space construction funded purely privately and not financed, the Anchorage market is estimated to be 15% of the Denver market and not likely to attract major private investment in new facilities compared to Colorado, Washington, or Oregon.

This assumes a Floor Area Ratio blended between warehouse use in Anchorage (0.17) and manufacturing facilities in Anchorage (0.32). The resulting, assumed FAR for marijuana industry-driven space is 0.245.

The estimate of gross industrial acreage demand driven by marijuana industry in Anchorage also assumes a net-to-gross adjustment of 0.9, implying that actual site development comprises 90% of acreage need, while an additional 10% will typically be required by right-of-way and other public facilities.

It should be noted that earlier, preliminary estimates of industrial space demand within the MOA driven by marijuana-related industry ranged from 150,000 square feet to 300,000 square feet. The lower, preliminary figures were reviewed and discussed by the Anchorage Assembly in February of 2015.

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<sup>17</sup> [http://www.confluence-denver.com/features/sustainable\\_cannabis\\_071614.aspx](http://www.confluence-denver.com/features/sustainable_cannabis_071614.aspx)

<sup>18</sup> <http://www.nwccouncil.org/media/7130334/p7.pdf>



Final results, ranging from 400,100 square feet to 514,400 square feet, are a significant increase and were revised for the following reasons:

- Preliminary estimates assumed 50% of Anchorage MSA marijuana industry-driven space demand would occur within the MOA and 50% would occur outside the MOA/inside the Mat-Su Borough. This assumption was based purely on the 50% split demonstrated between City of Denver and City of Aurora, Colorado location choices of Denver area marijuana industry. Aurora captured up to 50% of demand by virtue of much Interstate 70 corridor, older warehouse space located in that city versus Denver. Anchorage, on the other hand, has a far greater share of Anchorage MSA older warehouse space, the preferred space of Denver area marijuana growers and other businesses. Without a definite estimate of such total space in the Mat-Su Borough, a 75% share was assumed for Anchorage, up from the preliminary assumption of 50%.
- The “Low Range” preliminary estimate for industrial space demand in Anchorage was meant purely to “bracket” the possibility, as of January of 2015, that Anchorage/Alaska marijuana industry would be far more restricted in scope than legalized in Denver. Although much regulatory detail at the State and local level are still uncertain, news coverage and analysis of marijuana in Alaska by Alaskan media points in the direction of more similarities to Colorado than not. Accordingly, Denver industry was assumed to be more comparable than not to Anchorage, and thus it was not deemed necessary to have an aggressively low estimate of space reflective of a very restrictive industry in Alaska.

## 4 Industrial Land Need Reconciliation

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Section 4 is a reconciliation of potential industrial land demand by the MOA economy through 2035 and available industrial land supply for growth in the MOA. It assesses the demand for industrial land under each growth scenario discussed in Section 3 in comparison to the potential industrial land supply under various assumptions discussed in *Volume II: Industrial Lands Inventory*.

Accordingly, this section will answer the following questions given updated industrial land demand analysis in this document as well as detailed industrial land supply findings achieved by Municipality of Anchorage staff:

- Does the Anchorage Bowl have sufficient industrial-zoned land to accommodate expected growth?
- Under what economic scenarios if any does the Anchorage Bowl have sufficient industrial-zoned land?
- Under what industrial supply availability assumptions if any does the Anchorage Bowl have sufficient industrial land?
- Does the Anchorage Bowl have sufficient industrial land supply to accommodate core, Production-Distribution-Repair “PDR” employment growth?
- Does the Greater MOA, Anchorage Bowl and Chugiak-Eagle River, have sufficient industrial-zoned land to accommodate expected growth?
- Under what economic scenarios if any does the Greater MOA have sufficient industrial-zoned land?
- Under what industrial supply availability assumptions if any does the Greater MOA have sufficient industrial land?
- Does the Greater MOA have sufficient industrial land supply to accommodate core, Production-Distribution-Repair “PDR” employment growth?

### 4.1 Supply & Demand Reconciliation

#### 4.1.1 Supply & Demand: Anchorage Bowl Reconciliation

The first industrial land demand and supply reconciliation for the MOA is limited to the Anchorage Bowl for context purposes. For this analysis, industrial land supply findings found in *Volume II: Industrial Lands Inventory* are utilized. Two definitions of industrial land supply availability are utilized for analysis purposes:

- **Land Supply With Non-Industrial Utilization:** The Municipality Planning Division estimated potential industrial land capacity within the Anchorage Bowl assuming analytically-determined non-industrial uses that can be expected on industrial land. The result yielded a “High” estimate of 388.3 total acres, 231.6 of which are currently zoned I-1 or I-2. The remainder comprises PLI (Public Lands & Institutions) and T (Transition) districts, which would have development restrictions if used for industrial purposes. This definition of industrial land supply was concluded to be a “High-Range Estimate”

because it makes optimistic assumptions about specific parcels with uncertain future uses.

- Land Supply Without Non-Industrial Utilization:** If identified, potential “High-Range Estimate” industrial land capacity assumes no rate of non-industrial utilization of industrial land. This additionally optimistic industrial land capacity methodology finds 588.1 acres of total industrial land capacity, 385.3 acres of which are presently zoned explicitly for industrial use (I-1, I-2, or I-3). The remaining acres are use-restricted for industrial purposes under either PLI or T district zoning.

Results of the industrial land and supply reconciliation for the Anchorage Bowl are found in Figure 4-1.

**Figure 4-1 Anchorage Bowl Industrial Land Supply & Demand Reconciliation**

Growth Scenario	Industrial Land Supply Assumptions (Acres)				Industrial Land Demand & Net Surplus/(Deficit) (Acres)						
	I-1	+	I-2	=	Industrial Districts	All Districts	- PDR Sector Demand*	= PDR Net Supply	- Non-PDR Demand	= Total Net Supply	I-Zones Net Supply
<b>Continued Non-Industrial Use of Industrial Land</b>											
Baseline No Bridge	151.4		80.2		231.6	388.3	319.2	69.1	234.2	(165.1)	(321.8)
Baseline Bridge	151.4		80.2		231.6	388.3	304.3	84.0	224.4	(140.3)	(297.0)
Low Growth Bridge	151.4		80.2		231.6	388.3	45.4	342.9	83.1	259.7	103.0
<b>Only Industrial Uses on Industrial Land</b>											
Baseline No Bridge	252.0		133.3		385.3	588.1	319.2	268.9	234.2	34.7	(168.1)
Baseline Bridge	252.0		133.3		385.3	588.1	304.3	283.8	224.4	59.5	(143.3)
Low Growth Bridge	252.0		133.3		385.3	588.1	45.4	542.7	83.1	459.5	256.7

\*Note: Includes estimated, average marijuana industry-driven land demand of 47.6 acres. Excludes Airport, Railroad, & Marine Transportation land demand that would site on publicly-owned lands already accounted.

Source: Municipality of Anchorage and Cardno, Inc.

- Does the Anchorage Bowl have sufficient industrial-zoned land to accommodate expected growth?**

Results of the analysis indicate that the Anchorage Bowl does not have sufficient industrial land capacity to accommodate employment gains under either Baseline growth scenario. 231.6 acres of industrial-zoned land – the “High-Range Estimate” – falls short of Baseline scenario demand – including estimated marijuana industry growth - by roughly 297 to 322 acres through 2035.

Under even more optimistic industrial land supply assumptions, the Anchorage Bowl inventory of 385.3 acres of industrial land falls short of Baseline growth scenarios need by 143.3 to 168.1 acres through 2035.

Assuming the Low Growth Scenario for the Anchorage economy, however, the Anchorage Bowl has sufficient industrial-zoned land to accommodate all expected

growth under both inventory methodologies. Meager growth under this scenario leaves the Anchorage Bowl with 103.0 acres to 256.7 acres of industrial zoned land after 2035.

- **Under what economic scenarios if any does the Anchorage Bowl have sufficient industrial-zoned land?**

Under only the ‘Worst Case’ economic scenario does the Anchorage Bowl alone have sufficient industrial-zoned land to accommodate twenty years of growth.

- **Under what industrial supply availability assumptions if any does the Anchorage Bowl have sufficient industrial land?**

Neither industrial land supply methodologies – allowing typical non-industrial utilization on industrial land or not allowing it - affect conclusions about industrial-zoned land supply sufficiency in the Anchorage Bowl.

Adding all candidate PLI and T District lands to the industrial land inventory also does not ensure sufficient land for industrial uses if non-industrial utilization continues at current rates. If non-industrial uses continue as currently, the Anchorage Bowl has 388.3 total acres including PLI and T District acreage. Given total expected demand, there would still be a deficit of land in 2035 estimated at 140.3 to 165.1 acres.

However, *aggressively assuming no non-industrial utilization on industrial land*, the addition of all PLI and T District does change industrial land sufficiency conclusions for the Anchorage Bowl. Converting all candidate PLI and T District land ensures 34.7 to 59.5 acres of industrial inventory by 2035 under the Baseline scenarios.

- **Does the Anchorage Bowl have sufficient industrial land supply to accommodate core, Production-Distribution-Repair “PDR” employment growth?**

Anchorage Bowl industrial-zoned land capacity cannot be counted on *alone* to accommodate “PDR” employment growth-induced land need unless future development does not allow non-industrial utilization. Under that assumption, industrial-zoned land alone totaling 385.3 acres is enough to accommodate 304.3 to 319.2 acres of Baseline “PDR” growth need including the estimate of future marijuana industry demand.

On the other hand, the Anchorage Bowl has sufficient *total* industrial land capacity – both industrial-zoned land and PLI and T District land - to accommodate only “PDR” employment growth demand under all scenarios in this analysis.

In other words, generally only under aggressive industrial capacity assumptions or “Worst-Case” economic performance does the Anchorage Bowl have sufficient industrial land capacity to accommodate industrial employment growth through 2035.

#### **4.1.2 Supply & Demand: Greater MOA Study Area Reconciliation**

Given reconciliation findings for the Anchorage Bowl, a second analysis is conducted assuming estimated land supply capacity of the Greater MOA study area. Capacity numbers represent the Anchorage Bowl plus the Chugiak-Eagle River area as discussed in *Volume II: Industrial Lands Inventory*.

Two resulting definitions of industrial land supply availability are utilized for analysis purposes:

- Land Supply With Non-Industrial Utilization:** Under this supply methodology, the Greater MOA result yielded a “High” estimate of 766.5 total acres, 419.0 of which are currently zoned I-1, I-2, or I-3. The remainder comprises PLI (Public Lands & Institutions), PC (Planned Community), and T (Transition) districts, which would have development restrictions if used for industrial purposes.
- Land Supply Without Non-Industrial Utilization:** This additionally optimistic industrial land capacity methodology finds 967.6 acres of total industrial land capacity, 583.6 acres of which are presently zoned explicitly for industrial use (I-1, I-2, or I-3). The remaining acres are use-restricted for industrial purposes under PLI, PC or T district zoning. Results of the industrial land and supply reconciliation for the Greater MOA study area are found in Figure 4-2.

**Figure 4-2 Anchorage Bowl & Chugiak-Eagle River Industrial Land Supply & Demand Reconciliation**

Growth Scenario	Industrial Land Supply Assumptions (Acres)				Industrial Land Demand & Net Surplus/(Deficit) (Acres)							
	I-1	+	I-2	= Industrial Districts	All Districts	- PDR Sector Demand*	= PDR Net Supply	- Non-PDR Demand	= Total Net Supply	I-Zones Net Supply		
<b>Continued Non-Industrial Use of Industrial Land</b>												
Baseline No Bridge	242.4		176.4	=	419.0	766.5	319.2	=	447.3	234.2	<b>213.1</b>	<b>(134.4)</b>
Baseline Bridge	242.4		176.4	=	419.0	766.5	304.3	=	462.2	224.4	<b>237.9</b>	<b>(109.6)</b>
Low Growth Bridge	242.4		176.4	=	419.0	766.5	45.4	=	721.1	83.1	<b>637.9</b>	<b>290.4</b>
<b>Only Industrial Uses on Industrial Land</b>												
Baseline No Bridge	348.4		235.1	=	583.6	988.5	319.2	=	669.3	234.2	<b>435.1</b>	<b>30.2</b>
Baseline Bridge	348.4		235.1	=	583.6	988.5	304.3	=	684.2	224.4	<b>459.9</b>	<b>55.0</b>
Low Growth Bridge	348.4		235.1	=	583.6	988.5	45.4	=	943.1	83.1	<b>859.9</b>	<b>455.0</b>

\*Note: Includes estimated, average marijuana industry-driven land demand of 47.6 acres. Excludes Airport, Railroad, & Marine Transportation land demand that would site on publicly-owned lands already accounted.

Source: Municipality of Anchorage and Cardno, Inc.

- Does the Greater MOA have sufficient industrial-zoned land to accommodate expected growth?**

Results of the analysis indicate that the addition of Chugiak-Eagle River supply does not ensure sufficient existing industrial land capacity to accommodate employment gains under either Baseline growth scenario. 419.0 acres of industrial-zoned land – the “High-Range Estimate” – falls short of Baseline scenario demand by 109.6 to 134.4 acres through 2035.

Alternatively, under even more optimistic industrial land supply assumptions, the Anchorage Bowl and Chugiak-Eagle River combined inventory of 583.6 acres meets estimated twenty-year need with remaining capacity at 30.2 acres to 55.0 acres in 2035.

Under the “Worst-Case” economic scenario, the addition of Chugiak-Eagle River industrial supply only further ensures sufficient capacity for meager industrial land need

growth through 2035. Surplus capacity after twenty years is estimated at 290.4 acres to 455.0 acres of industrial-zoned land.

- **Under what economic scenarios if any does the Greater MOA study area have sufficient industrial-zoned land?**

The Anchorage Bowl and Chugiak-Eagle River combined have sufficient existing industrial-zoned under the ‘Worst Case’ economic scenario. There is only sufficient industrial-zoned land in the MOA under Baseline growth scenarios if future non-industrial uses on industrial land are restricted.

- **Under what industrial supply availability assumptions if any does the Greater MOA study area have sufficient industrial land?**

The addition of PLI, PC and T District lands in Chugiak-Eagle River does materially change industrial land insufficiency conclusions compared to Anchorage Bowl inventory alone. Assuming the lower capacity numbers – still considered “High-Range” overall – total industrial land supply of 766.5 acres is sufficient to meet total Baseline demand. Assuming the most optimistic availability of land, capacity is certainly sufficient by a factor of 435.1 to 459.9 acres.

- **Does the Greater MOA study area have sufficient industrial land supply to accommodate core, Production-Distribution-Repair “PDR” employment growth?**

The Anchorage Bowl and Chugiak-Eagle River combined have sufficient *total* industrial land capacity and industrial-zoned land alone to accommodate only “PDR” employment growth demand under all scenarios in this analysis.

In other words, Anchorage Bowl and Chugiak-Eagle River total supply capacity combined and estimated as described can be expected to quantitatively meet 20-year land demand under any economic scenario. Industrial-zoned land alone, however, does not sufficiently meet industrial land demand if non-industrial uses are continued to be allowed on industrial land at current rates. Additional land zoned PLI, PC and T would be needed to meet total need.

It should also be noted that most of the industrial land supply in Eagle River, Chugiak, Birchwood and Eklutna areas is not serviced by urban water or wastewater utilities. For instance, the Powder Reserve acreage, 127.9 acres in total, and presently zoned T, is outside of water and wastewater service area. This reality would need to be remedied for some industrial uses to be considered feasible to locate there in the future.

## 5 Industrial Land Policy Discussion

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The following are suggested policies meant to address scarcity of industrial land in the next twenty years and pressures to convert industrial-zoned land to non-industrial uses given the findings in this document and land inventory findings in *Volume II: Industrial Lands Inventory*.

Policy directions are presented in varying degree of priority and restrictiveness based on discussion and feedback from the Technical Advisory Committee and Municipal staff.

Suggestions are divided into Economic Development policies and Land Use policies as both are usually required due to the nature of industrial users and development. In both categories, policies are grouped in order of recommended priority.

### 5.1 Policies Context: Anchorage Bowl & Eagle-River Chugiak Inventories

The primary finding of this Industrial Land Assessment Update is that the Municipality of Anchorage is that the current inventory of industrially-zoned land is insufficient to accommodate the next twenty years of economic growth. Furthermore, industrial land supply within the MOA faces market pressures to convert to other uses due to land scarcity for most other major uses, documented by other recent Municipality land use studies.

Municipal policies can be studied and adopted, however, that can in great measure remedy these and other industrial land inventory issues identified during the course of this study process.

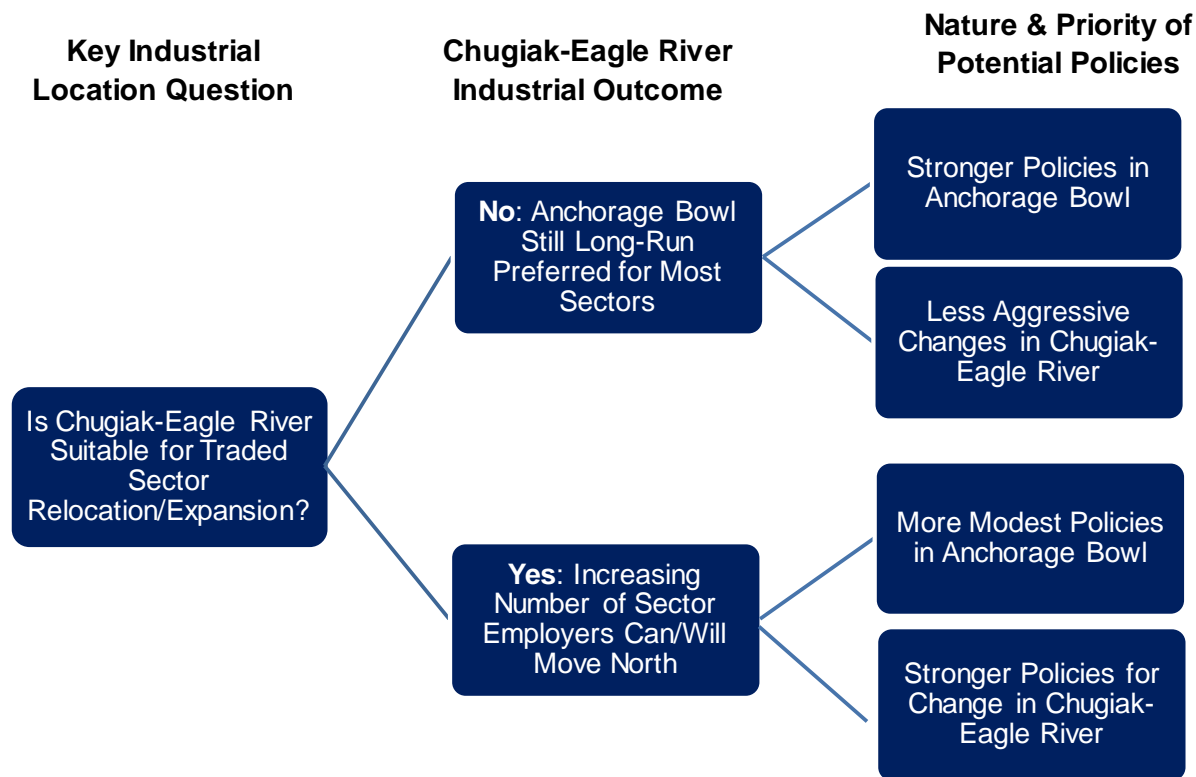
Land supply and location, via primary land use regulatory authority at the Municipality, will of course be the most powerful tools available in achieving the above goals. And as results of *Volume II: Industrial Lands Inventory*, the Municipality has some locational and supply quantity options between the Anchorage Bowl and the Chugiak-Eagle River geographies of policy study area.

The central question, therefore, in determining the best policies for future industrial land supply provision in the Municipality is the extent to which industrial development will continue to prefer the Anchorage Bowl and to what extent future industrial development growth will find Chugiak-Eagle River as the preferred location. Figure 5-1 displays a schematic that illustrates this question of where industrial development will prefer to locate and how those preferences will affect the nature of types of policies appropriate for the Municipality to consider.

After review of study findings and discussion with the Technical Advisory Committee, the following is apparent:

- The Anchorage Bowl will continue to be the most-preferred location for industrial users for the foreseeable future.
- Reasons discussed include: the Anchorage Bowl will continue to be the center of population and customer business locations; the Anchorage Bowl continues to have the majority of major transportation infrastructure investment; and land prices in the Anchorage Bowl relative to Chugiak-Eagle River haven't reached critical cost to induce major northward movement of Anchorage Bowl firms.

**Figure 5-1 Anchorage Bowl & Chugiak-Eagle River Industrial Location Preference & Policy**



There is resulting general agreement that the Anchorage Bowl will be the preferred industrial business location over the next twenty years and that policy direction as posed in Figure 5-1 should have the following resulting focus:

- Stronger policies for land use inventory, zoning, and economic development priorities within the Anchorage Bowl; and
- Less aggressive changes to policies regarding land use inventory, zoning, and economic development in Chugiak-Eagle River.

The following two sections provide recommended policies based on study findings and advisory guidance.

### 5.2 Industrial Economic Development Policy Suggestions

Keeping an industrial land inventory intact within the MOA given across-the-board land scarcity for other uses will require some prioritization of economic development initiatives by the Municipality. Prioritization of the types of economic growth that should occur given scarce land resources can result in more targeted policies for which industrial areas and how much of them should be maintained for industrial uses.

Alternatively, clearer prioritization can enable the Municipality to make better-informed decisions about which lands currently zoned for industrial use may be better re-designated to other uses.



Rather than take a purely regulatory approach in nature, a “Business Case” argument can be made that:

- Healthy industry is essential to the MOA;
- Certainty about room for businesses to exist and expand unencumbered by land use, noise, and traffic conflict is key to future business expansion decisions;
- Industrial sectors that provide greater employment, wage, and facility investment essential to the Anchorage economy can be viewed as higher priority for land use priority decisions; and
- As the transportation and commercial center for the state, particularly for the crucial resource extraction, transportation, and tourism sectors, industrial uses in Anchorage support industries of vital importance to all of Alaska. The gradual loss of future industrial employment capacity in Anchorage will certainly have a deleterious effect on other critical industries that rely on the Anchorage labor force and regional transportation infrastructure for both regional and statewide economic viability.

#### 5.2.1 **High Priority: Document Crucial Industry Sectors Driving the Anchorage Economy And Their Requirements for Industrial Facilities and Land in the MOA**

The Anchorage economy comprises a multitude of different industry sectors with different space and land usage characteristics. But given dwindling industrial space and land supply in the largely built-out Anchorage Bowl, it will be crucial for the Municipality to better understand its key industrial facility-utilizing sectors that drive the local economy.

Over time, as has been true of other metropolitan areas across the country, the largely-developed Anchorage Bowl will be less able to accommodate all industrial users and can expect business relocations. Such trade-offs, involving a declining land supply in the Anchorage Bowl relative to other parts of the Anchorage MSA region, are greatly inevitable. But policies can prioritize industrial site provision that at least intends to meet the needs of industries identified as crucial to the Anchorage economy, supporting greater-than-normal share of other businesses, jobs, and regional income.

Such an effort accomplishes the following:

- Identification of specific industrial facility-utilizing sectors in the Anchorage economy upon which other sectors most depend for business revenue, jobs, and income;
- The specific growth prospects for these key sectors in order to more precisely understand the industrial space and land needs of these crucial sectors; and
- The specific site needs and location preferences of the identified sectors to refine and prioritize policy implementation and ensure that at a minimum, Anchorage’s core economic driver sectors are ensured appropriate room for growth in the face of inventory and policy trade-offs.

The following four policy recommendations will assist the Municipality in making better-informed industrial land supply policy decisions by understanding which local industry sectors generate the greatest wealth for the regional economy. Or alternatively, the recommendations inform the

Municipality regarding which key sectors, if unable to operate and expand within Anchorage, pose the greatest economic loss without adequate industrial site supply.

- These sectors tend to sell more goods and services outside of Anchorage than within Anchorage and frequently pay higher wages and invest in facilities and equipment that better utilize technology for productivity.
- The key sectors also depend upon a key supply chain of vendors in the regional economy, thus further supporting regional jobs and income.
- Key sectors often are geographically concentrated for various reasons, such as specialized labor or cost of inputs, and can attract other like businesses or create spin-off businesses when entrepreneurial employees start new ventures.

All four of the following policy recommendations can be addressed in a single economic and land use study for or by the Municipality or could be treated in separate but related study processes at different times.

#### **5.2.1.1 Identify and Document "Traded Sectors" in Anchorage**

A "Traded Sector" is defined as a net exporter of goods and services outside of the Anchorage economy, whether internationally or to other states and regions. In other words, Traded Sectors bring more dollars into the region and supporting more jobs than if the sector did business only within the MOA.

Examples of Traded Sectors are frequently but not always manufacturers whose products are sold far more outside of Anchorage than within, such as seafood canneries or equipment manufactured in support of resource extraction elsewhere in Alaska.

These sectors, particularly those that utilize industrial land and facilities, should then be an economic development priority for the Municipality given their "wealth generating" contribution to the local economy.

A Traded Sector Analysis is frequently conducted by studying detailed economic data for a geographic area and documenting "trade flows" for all individual sectors of the economy.

- For each sector, this generally involves comparing business revenues earned to sales by that sector strictly within the geographic area.
- Sector business revenues that exceed strictly local sales identify a potential Traded Sector that is key to the local economy.
- Traded sectors can also be further prioritized by factors such as Value Added, which is basically the difference between the value of a newly created product or service and its production input costs.
- Higher Value Added sectors generally create new products from inputs rather than process or repackage them, as well as tend to pay higher wages for high value-added productivity and tend to utilize technology investment for greater value added.
- Finally, Traded Sectors are identified for their local geographic concentration and their growth (or decline) trend to understand general economic health as well as prospects or obstacles for those key sectors in the local economy.

### **5.2.1.2 Document Industrial Land Needs Characteristic of Identified Traded Sectors**

Outreach to identified traded sectors will establish relationships with those firms and lead to better understanding of their growth prospects within the MOA and what their facility expansion needs will be in the future. MOA policies for industrial land use can then be more targeted to traded sectors that contribute greatly to the regional economy.

### **5.2.1.3 Identify and Document Industry Clusters in Anchorage**

Industry clusters are defined as geographically concentrated aggregations or groupings of key primary industries, usually Traded Sectors along with their supporting supply chain sectors in above-average local concentration. Nearby co-location of industry competitors, due to specialized labor or inputs, are a frequent characteristic of industry clusters. Clusters are, therefore, larger in terms of number of firms (primary/Traded and supply chain), total employment, and combined industrial land need than Traded Sectors alone.

In Anchorage, candidate clusters include Value Added Food Products (likely comprising competitive canneries, commercial fishing companies, and freight/transportation firms and other related vendor sectors). Examples in other related markets include software and biomedical research in Seattle, and high-tech electronics components manufacturing and apparel in the Portland region.

Clusters not only typically are Traded Sectors because they sell more goods and services outside of their home region, but they also specifically support a variety of growing support businesses and sectors that located nearby to be close to that “cluster anchor.”

### **5.2.1.4 Document Industrial Land Needs Characteristic of Identified Industry Clusters**

Outreach to identified cluster businesses, both the key “anchor” Traded Sector firms but also the supply chain vendors and service providers to those firms, will similarly establish public-private relationships that can be leveraged for more targeted land use policies.

Characteristics of land need to be identified should include general facility and site detail needs including: typical site sizes physical qualities (room for operational flexibility or possibly future expansion), transportation access, availability and capacity of utilities, and location.

Location preferences should also be included in an assessment for better understanding desire to remain in the Anchorage Bowl, preference for specific industrial areas within the Bowl, or preference for larger green field sites like those in Chugiak-Eagle River.

## **5.2.2 Medium Priority: Industrial Use Prioritization Based on Informed Traded Sector and/or Industry**

### **5.2.2.1 Recognize Traded Sectors & Related Industry Clusters as a Core Economic Function in the MOA Economy and the Most Economically Vulnerable to Conversion of Use**

Traded Sectors and related Industry Clusters – primarily Production, Distribution, and Repair businesses – are frequently core economic activities upon which many other sectors and land uses ultimately depend. Office uses are typically associated with core industrial functions or support them, residential uses are driven by population associated with economic function, and retail commercial uses are also dependent upon the other uses.

Industrial uses also require low-cost land given that PDR/industrial sectors face higher equipment, labor, and specialized facility costs. The opposite is true of retail commercial uses and to lesser extent residential uses. Industrial uses generally cannot “build up” like office or residential uses. As Anchorage Floor Area Ratios of existing industrial buildings information in *Volume II: Industrial Lands Inventory* demonstrates, industrial buildings rarely build above one or two stories.

Instead buildings are constructed specifically for business function that includes placement of equipment, materials, employees, and merchandise staging unique to each individual business. Density and efficiency can be gained with offices, shops, and with apartments and condominiums, but industrial business function, equipment layout, and resulting space usage usually renders substantial density gains difficult.

Because offices, residences and to some extent retail uses can be built in multiple stories, development of those uses can better absorb the cost of rising land prices: greater vertical density means greater income-generating space across which to spread higher underlying cost of land.

Industrial space, on the other hand, cannot increase density vertically as explained above. And so in a land-constrained environment such as the Anchorage Bowl, industrial uses cannot spread costs across higher density yield per acre. Land price escalation out-prices industrial development feasibility and the resulting land price pressure induces non-industrial use conversion.

For this reason, preservation of industrial land and its feasible cost are deserving of public policy measures.

#### **5.2.2.2 *Recognize Air, Water, and Road Transportation Infrastructure and Their Nexus as a Vital Economic Development Investment for Industrial Land Use Prioritization***

Adequate transportation infrastructure and access to it are usually among the most fundamentally important location decisions for the expansion decisions of existing and new businesses. Industrial areas in the MOA with access to major roadways for freight, less interrupted by non-business traffic, should be prioritized as key industrial areas to be retained for industrial expansion. Industrial areas with multimodal transportation access should be further recognized as a public asset value for industrial expansion.

#### **5.2.2.3 *Recognize “Return on Public Investment” Higher Wage Jobs, Greater Intensity of Industrial Investment, and Greater Dependence Upon Transportation Assets in Determining Industrial Land Use Policy Actions***

Preservation of industrial areas for future industrial use should consider higher levels of development investment via higher density industrial uses as well as likely higher-wage jobs that would be created with industrial uses rather than non-industrial uses.

“Return on Public Investment” would be defined as various metrics of economic benefit to the Municipality economy as a result of public initiatives and policies. These frequently include metrics such as jobs created, jobs created per industrial acre (industrial employment density), average wages for jobs created, and planned facilities and equipment investment that are subject to local property tax.

### **5.2.3 High Priority: Industrial Site Information & Readiness**

#### **5.2.3.1 *Expand Upon the MOA Industrial Land Inventory Regarding Individual Privately-Owned Site Counts, Qualities, and Details***

A database of industrial site opportunities for existing business expansion as well as attraction of new traded sector and cluster businesses should be maintained to enable quick, informed response for business site decision-making needs. Given the efforts to produce *Volume II: Industrial Lands Inventory* for this study process, it likely makes most sense for the Municipality to continue to build and maintain a detailed industrial site inventory. The Municipality can also continue to maintain a land use inventory about existing industry by NAICS industry codes on existing parcels, including potential redevelopment parcels.

The Municipality could make it a priority to migrate its Property Appraisal land use data from its 1970s era mainframe format to a modern relational database that can interface with GIS (geographic information systems). This and other steps toward inter-agency data coordination will allow the Municipality to maintain updated land information for its city functions, reduce costs, and avoid duplicative efforts among its agencies.

A well-kept land information database should also be shared with key private partner(s) such as AEDC and the brokerage community to facilitate economic development efforts focusing on industrial users. Industrial site queries, particularly for recruitment prospects, must maintain complete confidentiality. Private partners such as AEDC, with access to the database, can field industrial site queries as needed and maintain private firm confidentiality given their private status, unlike the Municipality.

#### **5.2.3.2 *Prioritize Infrastructure and Utility Extension to Industrial Lands and Sites in the Chugiak/Eagle River Area as Well as Remaining Unserved Areas in Anchorage***

Findings of this study make it clear that industrial areas in the northern portion of the MOA will be crucial to meeting the needs of future industrial expansion. Sites are reasonably proximate to the Glenn Highway, frequently rail connected, and several are larger in size that can accommodate flexible development plans for larger users, smaller users, or some combination. Strategic infrastructure extension and continued planning of these areas for employment expansion should be a priority for ensuring adequate industrial land for future growth. To ensure a return on investment (ROI), the community should work with the property owners to establish expectations for development to consist of the targeted land use sectors at adequate intensities.

Key infrastructure and utilities that should be extended to enhance industrial usage include in general order of importance: roads/transportation access, electrical power, wastewater and water, and natural gas. Findings from Traded Industry Sector Analysis and/or Industry Cluster Analysis should help inform specific utility and infrastructure need requirements for key regional industries.

#### **5.2.3.3 *Periodically Review Municipality Development Services Review-and-Approval Process to Maintain Timely and Cost-Effective Services for Industrial Development***

The Municipality has in the past studied its own development services process and compared it to other comparable jurisdictions in order to determine its own cost efficiency and relative performance to other jurisdictions and markets. It has found that Municipal development approval process has been competitive if not faster than comparable jurisdictions elsewhere.

This policy recommendation, however, recognizes that over time, funding levels and staffing levels change, development application activity changes, and thus a periodic review to ensure that high quality customer service and timely development application process continues over time.

During the course of this study process, sentiment was expressed by some Advisory Committee members that experienced directly or heard indirectly, that instances have occurred where development application approval process was viewed as unnecessarily long or costly. The Municipality undoubtedly seeks to be responsive to such concerns, though examples of such incidents were not detailed in the Committee discussions. Some comments may relate to required infrastructure improvements. A review may identify existing permitting requirements at the municipal level that need adjustment.

A formal periodic review of development services process can assist Municipality responsiveness to this concern and is perhaps best structured as part of changes that would need to occur for the recommended “Development-Ready” industrial site program policy. The Municipality should also continue moving forward with implementation of electronic plans review.

#### **5.2.4 Medium Priority: Enhanced Industrial Development Readiness Programs**

##### **5.2.4.1 *Explore Fiscal Tools to Facilitate Industrial Development and Redevelopment***

As available industrial site inventory decreases over time, remaining sites will winnow to those with increasingly expensive obstacles to development feasibility, including potential brownfield issues. The Municipality can explore different financial tools that can help overcome (re)development obstacles for industrial users seeking location for expansion in Anchorage. Incentives can and should include claw-back provisions such as revocation of funds should employment or wage targets not be met.

Financial tools can include tax increment financing, property tax abatements, economic development or industrial bonds, property acquisition and “write-down” sale at below-market cost, low-interest loans, and other such tools.

For instances of industrial sites requiring utility provision or upgrades to existing utility capacity, privately-borne costs can be inhibitive and may be the explanation for some properties continuing to not be improved for industrial use. In these instances, incentives can be employed that either strategically reduce user costs or spread costs over a longer time period of payment. Assistance with utility extensions, targeted reductions in tariffs, and/or methods to allow the longer-term finance of some costs including the use of improvement districts may also be beneficial. The Municipality can also offer technical assistance and support coordination with property owners via the US Environmental Protection Agency, Brownfields and Revitalization Program.

It should be noted that Tax Increment Financing (TIF) is currently not allowed under the Alaska Constitution and, thus, an amendment would be required for that particular fiscal tool. Properly

structured, however, it can be a powerful locally-controlled tool in achieving targeted public redevelopment goals, while maintaining specific public finance goals and constraints, for all manner of land uses in Anchorage. Efforts so financed would be consistent with numerous Comprehensive Plan goals, as well as objectives identified in area plans throughout Anchorage.

TIF was also identified by the Technical Advisory Committee as a financial tool worth exploring, with understood success in public redevelopment initiatives in other markets. It is recommended as a key financial instrument for land use and redevelopment policy consideration, and various stakeholder partners should be identified for further study and consideration.

#### **5.2.4.2 Pursue a “Development-Ready” Industrial Site Program**

A key inventory database of select industrial sites should be “development-ready” or “shovel ready,” meaning that sufficient due diligence has been completed in advance that verifies and “certifies” an industrial site is fully served with infrastructure, utilities, and has all potential development issues documented, enabling a user to begin construction within six months to no more than a year from pre-development application process.

These sites would be a subset of the industrial site inventory in Policy Recommendation 5.1.1.9 and would be the “marquee” industrial location and expansion opportunities offered within the Municipality at any particular time.

The Municipality, partnering with AEDC, should identify best practices of “development-ready” programs in other comparable markets and states to inform a local program to facilitate a continuous inventory of a select number of sites within the MOA that meet these criteria. AEDC economic development efforts are consistent with such a program and the Municipality should encourage AEDC to explore a major role in such a program. Depending upon available resources, the Anchorage Community Development Authority (ACDA) may also be a potential partner.

AEDC would likely need to be the primary entity involved due to the fact that site recruitment searches must have a level of confidentiality. Business site search and need criteria often involve proprietary business expansion plans and specifications that must remain private. As a public entity, the Municipality cannot function effectively like AEDC, a private entity.

The Municipality, with recommended upgrades to its industrial site and lands inventory database, can be an effective manager of program site information along with other information coordination needs.

Sites can then be actively marketed by AEDC and partner brokerage firms for local business retention and expansion efforts, as well as attraction efforts of firms from outside of Alaska that may in the future seek Anchorage location in a timely manner with site development certainty.

#### **5.2.4.3 Within the Context of MOA Redevelopment Policy Initiatives, Study and Document MOA Industrial Brownfield Issues Potential to Prepare for Future Policy Discussions**

Brownfields are defined by the U.S. EPA as on the following page:

*“Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”<sup>19</sup>*  
(Emphasis added)

In other words, a brownfield can simply be a property with previous use where there is uncertainty regarding contamination issues, if at all.

Contrary to frequent perception, brownfields are not defined as properties with confirmed contamination issues, with notable examples in national media having extensive, extremely expensive contamination and mitigation issues.

Whether a business closes or relocates, most vacated industrial sites will have uncertainty about contamination issues and, thus, qualify as brownfield sites for various federal programs and funding for due diligence through actual remediation if necessary.

Via case studies, interviews, and other industry outreach, the MOA can better document likelihood of brownfield issues over time as various industries and individual users evolve, relocate, or shutter and involve the use or vacation of a previously utilized industrial site.

The result of Municipal effort will be better understanding of not only potential future remediation issues, but also additional information for pursuing future technical and Federal funding assistance in a coordinated manner as redevelopment activity increases in frequency.

### **5.3 Industrial Land Use Policy Suggestions**

Findings of the Anchorage Industrial Land Assessment Update demonstrate that the Municipality of Anchorage has an undersupply of industrially-zoned over the next twenty years if the regional economy experiences typical growth. At the same time, recent municipal land use studies have also found:

- Anchorage has a twenty-year shortage of appropriate residential land and capacity that continues to put pressure on housing costs; and
- Anchorage also has a twenty-year shortage of commercial land and that commercial development, usually able to pay higher prices for land than other uses, is increasingly locating on parcels that require a transition of use, frequently from industrial designation.

All studies recognize that the Anchorage Bowl is largely built out, with a narrowing selection of “green field” land for industrial, residential, or commercial use. Undersupply of land for these primary uses continues to result in sometimes controversial transition of uses from typically lower property value entitlement (industrial) to higher property value entitlement (commercial or residential).

The economic ability of the latter uses to increase density of form in order to spread higher land costs per unit or per square foot and remain economically feasible allows these non-industrial uses to outbid sites on a land cost basis. As expressed earlier in this section, gains in density, particularly vertical construction like residential or commercial space, is practically impossible for the vast majority of industrial uses. Allowing “pure market forces” to decide the best or most appropriate uses throughout the Anchorage Bowl would propagate this outbidding of industrial

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<sup>19</sup> <http://www.epa.gov/brownfields/overview/glossary.htm>



sites in favor of commercial uses most frequently and less frequently to residential use based on the location and qualities of the sites.

For the Anchorage economy, unfortunately, it is also true that commercial uses – particularly the well-documented undersupply of retail uses – are typically associated with jobs that pay significantly lower wages than jobs at industrial firms. It is also true that lower overall wage creation further puts strain on well-documented limited housing affordability options for Anchorage households. Industrial uses, on the other hand, comprise jobs of both higher wages than retail commercial, but also a greater diversity of wage levels given the many different types of businesses that utilize industrial sites and land.

For these reasons, the Municipality has significant incentive to adopt land use policies that help to address the increasing land use conflict between various uses based on scarcity and resulting land prices that frequently encourages transition away from industrial uses.

In Economics, price increases can be driven by declining supply or increasing demand, with worst price escalations occurring when both realities are at play. Policies are therefore recommended that address both Demand Factors and Supply Factors that drive land cost and transition from industrial designation

- Demand Factors: With scarce land supply for all major uses and long-term, practically inevitable increases in population, demand for various uses will ultimately always continue but at varying pace.
- Supply Factors: Unlike most commodities bought and sold, once land is purchased and developed (or “consumed”), additional land is of course not restocked or manufactured. The site is never again a green field land product. Whether it was previously green field or redevelopment, it is off the market for a long period of time until it can feasibly be redeveloped (again), if ever. Thus development of any type always implies a long-term decrease in land supply.

Caution is in order, however, about policies that inherently propagate commercial and industrial supply conflict. For instance, allowing greater industrial use flexibility in a non-industrial zoning designation may help some specific properties see new industrial development where it previously has not occurred. But such a strategy does little to prevent the ability of a commercial use from similarly using that property at a higher achievable land price. Such a zoning designation modification in fact explicitly allows the conflict between industrial and commercial use. In other words, supply-enhancing measures cannot alone remedy inventory shortage issues.

Both demand pressures on land prices and industrial conversion and supply pressures on industrial land availability must be addressed if overall land supply and price pressure is to be balanced in a manner that preserves industrial uses in Anchorage, particularly in the Anchorage Bowl.

The following policy recommendations include strategies that target land supply, land demand conflict and encroachment/transition, or both.

### **5.3.1 High Priority: Industrial Land Use Studies to Inform City Land Use Planning, Zoning & Entitlement Policies**

#### **5.3.1.1 *Conduct a Land Use Compatibility Study to Determine Re-Prioritization of Certain Lands Currently Zoned Industrial to Commercial Use***

The price and land availability conflict between uses, resulting in transition from industrial use throughout the Anchorage Bowl, is most prominently an issue between commercial and industrial uses. Given the completion of this Industrial Lands Assessment and similar lands assessments that have been completed in recent years for other uses, a timely study of industrially zoned land for potential re-designation to needed commercial land capacity is warranted. The study would help determine which areas to re-designate to a commercial classification on the city comprehensive plan's *Land Use Plan Map*.

Completion of such a study process would not only give definite answers to areas of chief conflict and encroachment between uses, but would also pave the way for better informed decisions about other recommended policies, specifically Industrial Sanctuary Preservation (below).

As pointed out by members of the Technical Advisory Committee for this study, re-designating such identified industrial sites to commercial use preserves the ability for future rezonings of such areas to B-3 or other commercial zoning designation in order to realign the zoning map with actual development. An example discussed during the course of this study includes the Abbott & 88<sup>th</sup> area, which is zoned I-2 but is designated as part of a Town Center in the Comprehensive Plan and has developed as a commercial retail activity node.

Such a study process should include consideration of different factors or criteria for deciding industrially-zoned land should be converted to commercial use, including:

- Predominant surrounding existing uses and potential for conflicts such as traffic and noise.
- Quality and development trend of existing, nearby industrial uses relative to quality and development trend of commercial uses.
- Location along roadways with commercial use-friendly visibility and likely higher land value vs. less visible locations with similar or adequate roadway access.
- Physical site qualities such as soil that have rendered industrial use limited or non-existent.
- Projected land need and likely development trend for the subarea in question.

#### **5.3.1.2 *Identify Key Industrial Areas or Sanctuaries within the MOA for Use Preservation***

Given economic development policy considerations that prioritize different industry sectors for their economic contributions for the region and policy considerations that identify transportation infrastructure investment as key assets for “return on investment,” formally identify industrial areas based on considered policy criteria within the MOA that deserve long-term industrial use protection and preservation. Such a designation would be provided on the city's land use plan map, and will help ensure predictability of existing and future operators in those districts

regarding compatibility of adjacent uses, traffic patterns, and other issues that can be obstacles to various specific industrial business uses.

This process would revise or update the “industrial reserve” policy areas previously identified in the Anchorage 2020 Comprehensive Plan. Candidates should include the Ship Creek/Port/Railroad area, the Ted Stevens Anchorage International Airport and central Anchorage industrial corridors, South Anchorage industrial corridors, and targeted Chugiak/Eagle River industrial areas.

This policy should be informed by a successfully completed traded sectors analysis (policy recommendation 5.1.1., and be conducted in context of the recommended land use compatibility study (5.2.1.1.). It may be done as part of a community planning process such as the Anchorage Bowl Land Use Plan update.

### **5.3.1.3 Re-Evaluate Commercial Entitlements and Allowed Uses Categories**

In context of the inventory of industrial uses in Anchorage, and the policies suggested above, it would be appropriate to undergo a re-evaluation of the types of industrial and non-industrial uses that the new land use regulations (adopted 2013) allow in the commercial and industrial districts.

This review would include objectives such as:

- Clarifying allowed use regulations relative to actual industrial use types;
- Re-assessing what industrial and non-industrial uses are appropriate in the commercial and industrial zones, in consideration of land use assessment report findings;
- Identifying areas where, with proper oversight, there could be appropriately a mix of commercial and industrial uses, i.e., the “Commercial Entitlements” issue addressed in the 2012 Commercial Lands Assessment;
- Re-assess B-3 zoning, particularly off major roadways where commercial development pressure is highest, to potentially allow more industrial use; and
- Formally identify “high development cost” conditions (notably soil quality such as extensive peat and removal/engineering cost) that are frequently found in lands currently zoned I-1. Such a criterion could then be part of maintaining a flexible industrial zoning designation of some type that maintains flexibility for commercial use that can readily develop on higher cost parcels. Similarly, such conditions can also become a criterion for modifying B-3 zone definition to similarly allow industrial use in appropriate areas with flexible commercial development entitlement.

### **5.3.2 Medium Priority: Re-Evaluation of Existing Zoning Designations & Inventory Adjustment**

#### **5.3.2.1 Consider Re-Designating and Rezoning Certain Lands Currently Designated PLI & T to Zoning Providing for Industrial Use**

Some lands in the study area zoned Public Lands & Institutions and Transition were identified as having sufficient quantity to provide substantial additional industrial land capacity to accommodate future economic need MOA-wide. These lands were identified as not committed by major regional institutions for their long-term potential expansion needs. Findings found in

*Volume II: Industrial Lands Inventory* also indicate most are owned by the airport, the MOA, or JBER and in some instances will likely be commercial or industrial use in time.

Some PLI and T tracts in the inventory could potentially be available and appropriate for industrial use. However, designating these areas as industrial on the Land Use Plan Map, and rezoning them to industrial districts, is necessary in order to permit industrial uses on such parcels.

Such lands can be studied and distinguished for appropriateness of need based on market timeframe. This could include some areas designated for shorter-term industrial development capacity, with other areas identified as longer-term capacity and designated as future industrial reserves as economic need dictates. I-1 zoning, which does allow a broader range of commercial uses, may be most appropriate for providing flexibility of use for identified lands and should be a consideration during a study process.

Some publicly-owned lands, likely by the MOA, could be sold in a targeted manner to the private sector with rezone to industrial prior to time of sale as suggested by a member of the Technical Advisory Committee.

To be clear: This policy recommendation applies only to certain PLI and T zoned lands within the industrial study area. It is not applicable to PLI and T zoned lands in general.

### **5.3.2.2 Consider Designating Certain Lands in Other Zoning Districts as Industrial**

The Industrial Lands Inventory (Volume II of this report) found some lands in other zoning districts, such as residential zones, that, because of site-specific locational factors, may be better positioned to provide additional industrial land in key industrial areas, than they are likely to yield significant residential or other non-industrial development.

For example, the inventory documented at least 40 acres of isolated, R-6 zoned uplands just south of Birchwood Airport that may be a candidate for re-designation. Further explore such lands identified in the industrial lands inventory to determine land use compatibility.

### **5.3.2.3 Review & Consider Restricting or Expanding Restrictions on Conditional Uses Within Industrial Sanctuaries That May Create Use Conflicts**

Whether creating active conflicts due to traffic, noise, or other factor, or fostering the general encroachment of non-industrial uses into a designated industrial district, conditional uses can be reviewed for prevalence, conflict issues, and potential additional restrictions.

This policy should be informed by a successfully completed Land Use Compatibility Study, also a policy recommendation.

### **5.3.2.4 Consider Impacts of Transportation Projects to the Industrial Land Base and Other Planning Decisions**

This policy would suggest considering ways to minimize impacts of proposed major transportation and other public infrastructure investments on the industrial land base. It is important to minimize eroding the land base through attrition. Projects to focus on would include the Seward-to-Glenn Highway Connection (H2H) and Knik Arm Crossing (KAC) Phase II project that could impact existing industrial users and the industrial land base in the strategic Ship Creek area. For example, the H2H project alignment envisioned in the MTP could eliminate up

to 30 acres of industrial district use area (reference: *Volume II*, in section 5 discussion of North Anchorage subarea).

Overall, a possible “do no harm” approach should be considered for land use policies and decisions affecting industrial capacity, particularly regarding strategic industrial areas.

**5.3.2.5 *Consider Additional Criteria for Rezoning Industrial Land Municipality-Wide and Within Industrial Districts***

Conversion of use will continue to occur to some extent, though with various policy steps conversion can be better managed geographically. This can include requiring a “higher bar” for rezoning industrial lands to other uses, where designated on the land use plan map of the Comprehensive Plan as industrial or industrial sanctuary.

Criteria can include standards of minimum job or wage creation, minimum acceptable economic impact compared to an industrial use on site, impacts to the MOA tax base, demonstration of economic viability of the proposed non-industrial use, and demonstration of the impact upon adjacent, existing or future industrial use.

This policy should be informed by a successfully completed Land Use Compatibility Study, also a policy recommendation.

**5.3.3 Low Priority: Highly Restrictive Policy Measures for Maintaining Industrial Land Inventory**

**5.3.3.1 *Consider Outright Bans on Rezoning Industrial Lands Municipality-Wide or Within Industrial Sanctuaries Alone***

A more restrictive approach than additional criteria for rezoning land, outright bans in areas designated for industrial use on the city’s land use plan map can be considered and adopted within specific industrial districts or sanctuaries.



