



Targeted Industry Report

July 2022

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Introduction

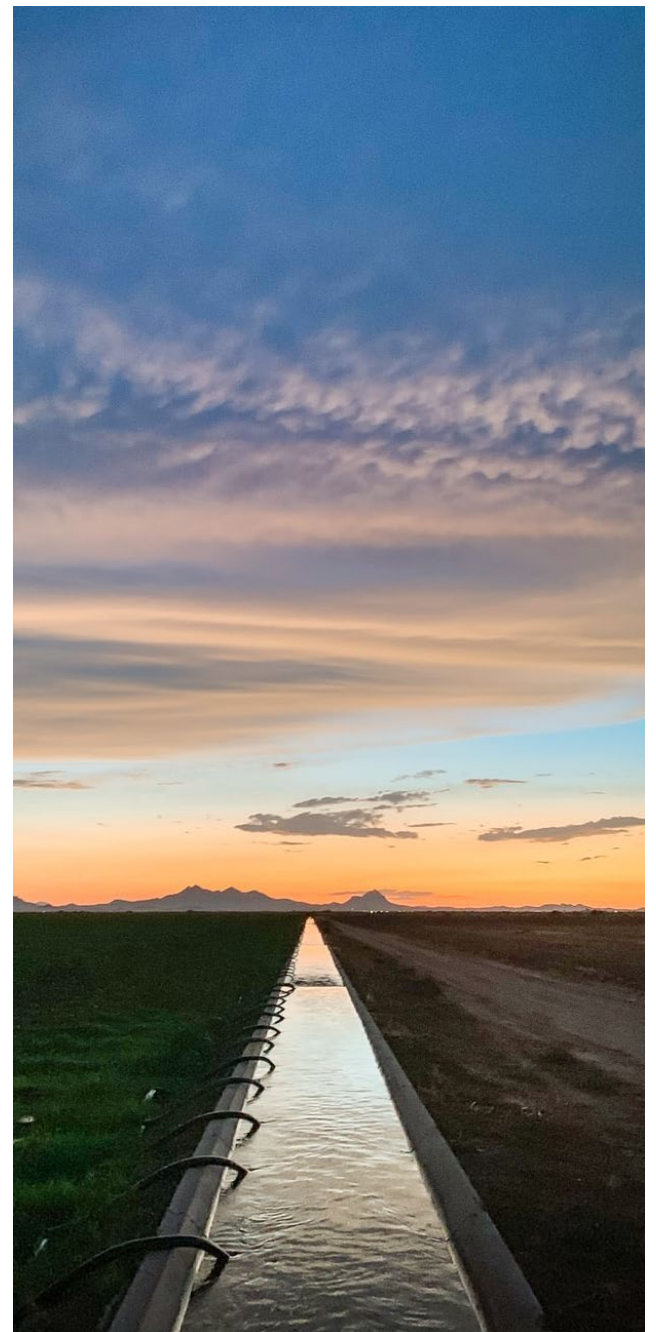
In early 2022, the City of Yuma initiated the development of a *Target Industry Analysis and Market Study* aiming at elevating its business attraction efforts by implementing a new business recruitment strategy. To that extent, the City sought to identify those target industries (including specific subsectors) that best fit the City's assets and market strengths. Through a competitive bidding process, the City of Yuma retained Thomas P. Miller and Associates, a national economic development consultancy based in Indianapolis, Indiana, to facilitate the preparation of the report.

The City of Yuma has identified several target industries that were acknowledged through the city's strategic plan and proposal based on input from city departments, local member communities, city council, and other regional stakeholders. With changes in the economy and business base, the City of Yuma determined that it is an appropriate time to revisit, reaffirm and/or identify new target industries for which the region can assemble a compelling business case.

Why Target?

Identifying target industries is an important part of effective and impactful economic development. No community can be all things to all sectors. Instead, the most successful communities identify their key competitive strengths and focus their economic development activities on the industries that best match those strengths. Targeting specific industries is not only about attracting new businesses to a community, but also understanding and addressing the needs of existing businesses; cultivating an environment that encourages new businesses to grow; and aligning activities and local organizations in pursuit of a shared vision for the entire community.

Investments and programs designed for target industries should benefit all sectors of the local economy. The following *Target Industry Analysis and Market Study* provides a list of recommended target industries for the City of Yuma and an explanation of how each of these industries and their niche markets were identified in a detailed profile of each target industry. These profiles include a description of each industry, their economic trends, and related locational strengths and requirements - such as workforce, skills, and regulatory needs. Each industry profile has specialized niched sectors that present strong opportunities for growth in Yuma. These niche markets are broken out by NAICS Codes. This report is a resource for leadership, economic development partners, and citizens. It should help everyone better understand the business opportunities that exist in Yuma and provide a platform on which to develop strategies to grow these industries.

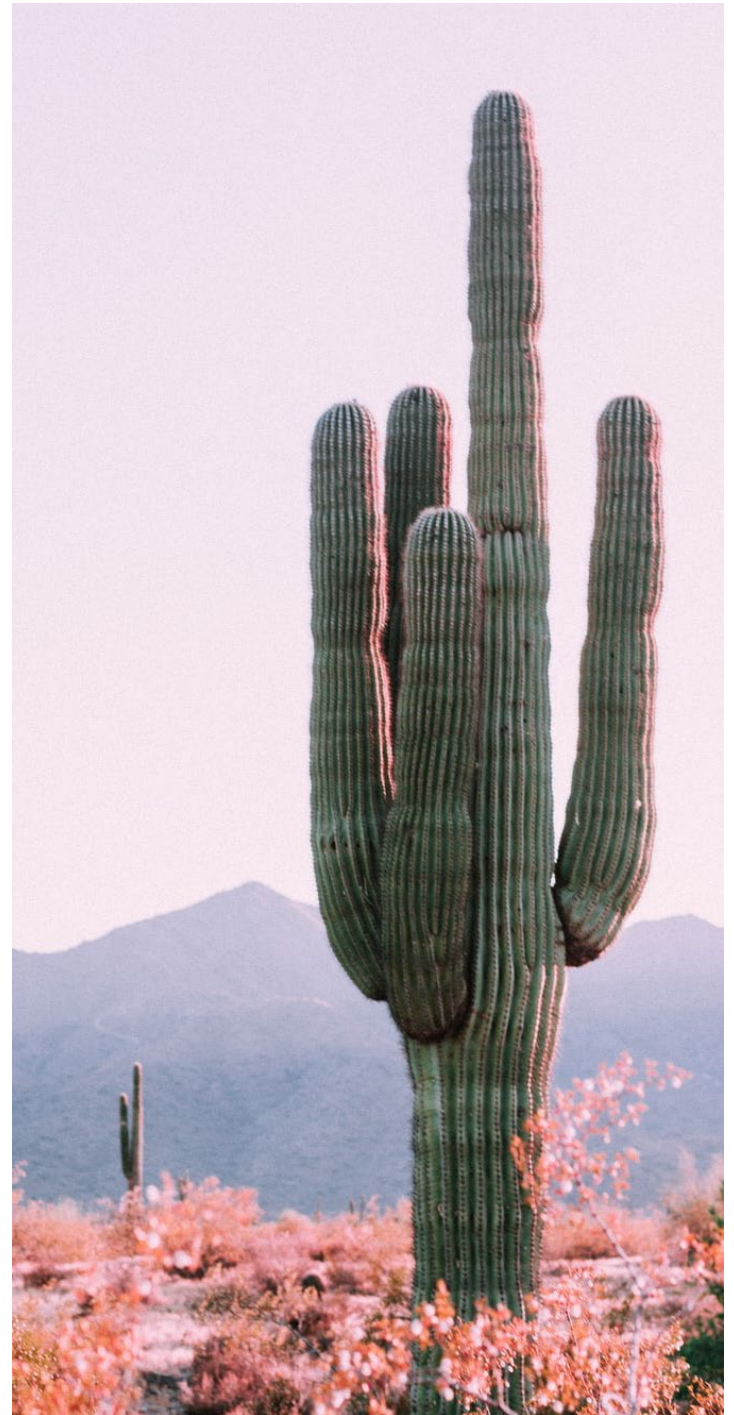


Executive Summary

The City of Yuma is pleased to present this *Target Industry Analysis and Market Study*, developed with funding provided by the Yuma City Council. This extensive report and its robust appendices provide insight into a series of industries that could be ripe for targeting as part of the city's business expansion, relocation, or attraction initiatives.

Utilizing information gathered from local focus groups, made up of professionals in workforce, education, economic development, real estate, and government communities as a starting point, this study inventories the attributes that make Yuma unique and, in many cases, give it a competitive advantage for business attraction. Based on initial feedback and direction from the Economic Development team from the City of Yuma and the focus groups as a shaping mechanism, the study explicitly accounts for the vision and goals of the collective Yuma community, vis-à-vis industry expansion in the region.

Armed with these insights from Yuma residents themselves, the team next empirically examined a vast pool of potential industry matches that aligned with the vision of the community. While the factors examined were myriad (and the details all appear in the pages that follow), in the most general terms, the team looked at data from the US Bureau of Labor Statistics, the US Bureau of Economic Analysis, the Census Bureau, and modeling data powered by EMSI Burning Glass to ensure that the identified industries:



1. Complement or capitalize on Yuma's unique assets and competitive advantages
2. Coincide with the City of Yuma's Economic Development Goals
3. Are poised for continued growth
4. Address an unmet need in the region, or capitalize on supply gaps in regional economy



Once the team was satisfied that the suggested industries met these important conditions, we ran simulations to estimate the potential economic impact identified industries could have on the region. This rigorous review culminates in the identification of 5 unique industry clusters to target, made up of 10 industry subsectors (each with a unique 6-digit NAICS identifier). The pages that follow explore each of these subsectors in detail, but as a shorthand reference, the next page includes all identified sub-sectors, organized by industry cluster.

In addition to a thorough review of both the fit and potential impact of new (or expanded) industries in the region, the team is proud to support this research with a robust array of actionable information for Yuma. Following the industry diversification study proper, an extensive appendix includes:

1. A Marketing Strategy for Yuma, designed to help identify and recruit the industries identified in the diversification study. This study highlights the more general top location factors, key talking points, the marketable strengths and potential challenges for business attraction in Yuma, before highlighting unique industry cluster considerations. As a companion to the marketing strategy, the team also identified trade journals, conferences, and site selectors serving the unique industries under consideration.
2. An overview of the state of the Labor Market in the greater Yuma region, built with data from the Bureau of Labor Statistics, Census, and the Bureau of Economic Analysis. Utilizing proprietary modeling from EMSI/Burning Glass™ and informed by the research team's experience and know-how, the report highlights information about the region itself, its people, its industries, and the occupations that make up the collective workforce.
3. A summary of the focus groups and stakeholder conversations undertaken in support of this initiative. For ease of reference, the insights are organized around the topics of: regional assets, regional challenges (both vis-à-vis industry attraction and the labor force in general), desired industry opportunities, and potential competitors.
4. Finally, in support of the competitor regions identifies by stakeholders, the Appendix concludes with an overview of: Albuquerque, NM; Maricopa County, AZ; Flagstaff, AZ; Las Vegas, NV; San Diego, CA; and St. George, UT. Each region is compared directly to the greater Yuma MSA in terms of population factors, average compensation, and industry composition.

Thomas P. Miller and Associates, in concert with the City of Yuma, is pleased to present the full report in the pages that follow. Any questions or feedback can be directed to: Jeff Burt, Economic Development Administrator, City of Yuma.

Target Industries

TARGET CLUSTERS

NICHE MARKETS



Advanced Manufacturing

Aerospace & Defense
Technology



Logistics & Processing

Agriculture Advancement
Manufacturing &
Transportation Progression



Science, Energy, & Technology

Device Manufacturing
Tech Services



Entertainment

Recreation
Amusement



Life Sciences

Medical Manufacturing
Research & Development

Advanced Manufacturing

Based upon further evidence shown in the “Target Industry Analysis” section, the project team has chosen *Advanced Manufacturing* as a key target cluster for the City of Yuma. Below is a general overview, including the niche markets and accompanying 6-digit industries that comprise the cluster. Additionally, a general overview, and key insights into each niche market are shown with more details and analysis shown later in the report.

Niche Markets & Industries in Cluster

Aerospace and Defense

- 336411 Aircraft Manufacturing
- 336413 Other Aircraft Parts and Auxiliary Equipment Manufacturing
- 336414 Guided Missile and Space Vehicle Manufacturing
- 336415 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
- 336419 Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing

Technology

- 334418 Printed Circuitry Assembly Manufacturing (Electronic Assembly)
- 335911 Storage Battery Manufacturing

Overview

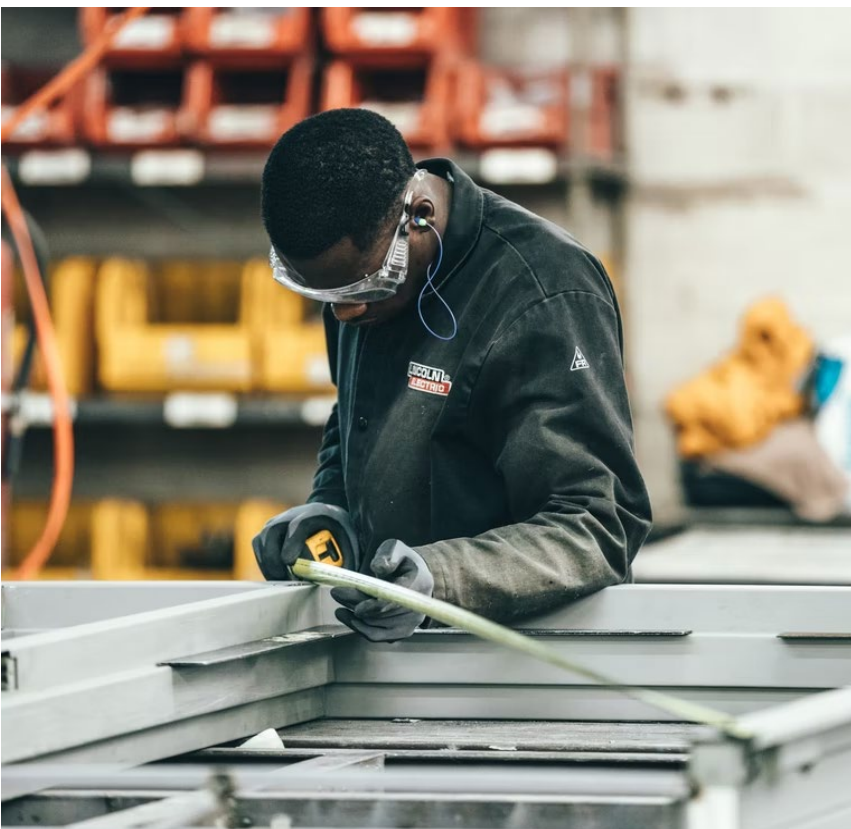
The *Advanced Manufacturing* cluster is the first target industry identified, with two niche markets comprising of a total of seven NAICS industries. Below is a snapshot of each niche market with more in-depth information and analysis presented in the Targeted Industry Analysis section of the report.

Aerospace and Defense

The *Aerospace and Defense* niche market is comprised of five NAICS industries. Included in this niche market is a heavy emphasis on aerospace and aircraft manufacturing, as well as guided missiles and space craft production. The City of Yuma has multiple competitive advantages that benefit this subgroup including the Yuma Proving Ground, a new potential Space Port, and access to a workforce that translates well into skilled manufacturing. In addition to aligning with Yuma’s development goals, many of the NAICS industries are rapidly growing both in Arizona and the US, with future job growth expected, while offering high wages per job.

Technology

The *Technology* niche market is the second subgrouping comprised of two NAICS industries. With an emphasis on high-tech electronic manufacturing, the subgroup is projected for future job growth and offers high wages. Additionally, with the recent push for green energy, this niche market encompasses manufacturing that often works closely with solar panels, electric vehicles, and other green initiatives.



Logistics and Processing

Based upon further evidence shown in the “Target Industry Analysis” section, the project team has chosen *Logistics and Processing* as a key target cluster for the City of Yuma. Below is a general overview, including the niche markets and accompanying 6-digit industries that comprise the cluster. Additionally, a general overview, and key insights into each niche market are shown with more details and analysis shown later in the report.

Niche Markets & Industries in Cluster

Agriculture Development

- 325311 Nitrogenous Fertilizer Manufacturing
- 325312 Phosphatic Fertilizer Manufacturing
- 325314 Fertilizer (Mixing Only) Manufacturing

Manufacturing and Transportation Progression

- 332710 Machine Shops
- 333618 Other Engine Equipment Manufacturing
- 541330 Engineering Services
- 448510 Freight Transportation Arrangement

Overview

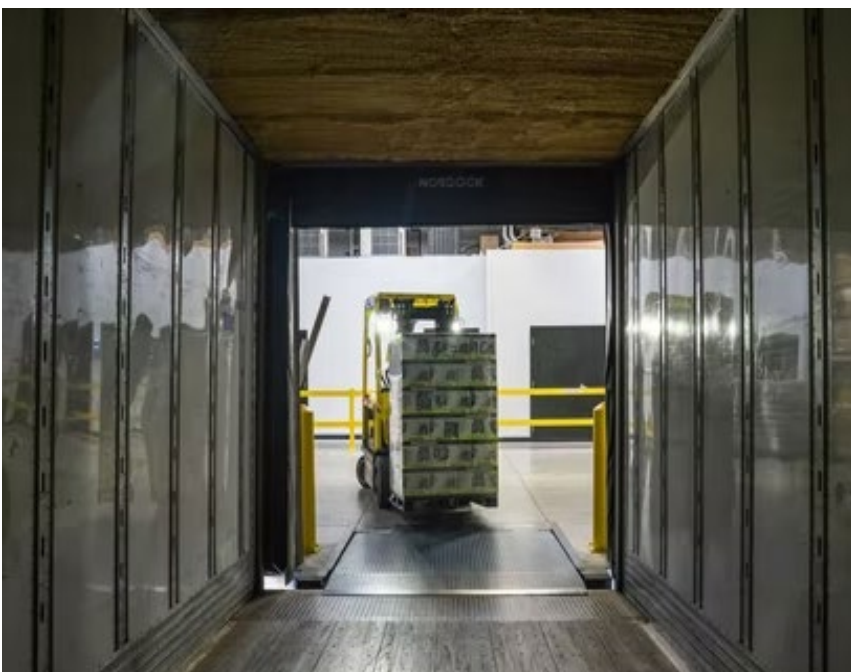
The *Logistics and Processing* cluster is the second target industry identified, with two niche markets comprising of a total of eight NAICS industries. This cluster is unique from the other identified clusters, as it specifically looks for supply chain gaps in Yuma’s current economic landscape while finding key NAICS industries that have the potential for internal (region) growth and development. Below is a snapshot of each niche market with more information later in the Targeted Industry Analysis section of the report.

Agriculture Development

The *Agriculture Development* niche market is comprised of three NAICS industries, and heavily relies upon building on the vast success of the agriculture sector in Yuma. With such a large demand by local employers for agriculture goods, and recent global supply chain disruptions opening new opportunities with federal funding, the natural transition to start producing in house the fertilizers was seen as a major prospect for industry diversification, and at an opportunistic time for attraction.

Manufacturing and Transportation Progression

In addition to the agriculture gap identified the *Manufacturing and Transportation Progression* niche market concentrates on gaps in the current manufacturing and transportation sectors in the region, identifying high-growth industries that, currently, satisfy the supply chain demands of established employers from outside the greater Yuma region. Comprising of four NAICS industries, this diverse niche market has the potential for large economic impact in the region as well as quickly growing industries that are in high supply of labor.



Science, Energy, & Technology

Based upon further evidence shown in the “Target Industry Analysis” section, the project team has chosen *Science, Energy, and Technology* as a key target cluster for the City of Yuma. Below is a general overview, including the niche markets and accompanying 6-digit industries that comprise the cluster. Additionally, a general overview, and key insights into each niche market are shown with more details and analysis shown later in the report.

Niche Markets & Industries in Cluster

Device Manufacturing

- 334413 Semiconductor and Related Device Manufacturing

Tech Services

- 518210 Data Processing, Hosting, and Related Services
- 541511 Customer Computer Programming Services
- 541512 Computer Systems Design Services
- 541690 Other Scientific and Technical Consulting Services

Overview

The *Science, Energy, and Technology* cluster is the third target industry identified, with two niche markets comprising of a total of five NAICS industries. The cluster builds upon the recent momentum of semiconductor manufacturing in the state and nation, as well as the rapidly growing tech services industries. Below is a snapshot of each niche market with more information later in the Targeted Industry Analysis section of the report.

Device Manufacturing

The *Device Manufacturing* niche market is comprised of one NAICS industry, and heavily relies upon the momentum in semiconductor manufacturing in the state and nation. In addition, the NAICS code also includes manufacturing related to electric vehicles, further promoting green alternatives as well as an expanding industry with major predicted import and export potential in the next decade. Bringing in Semiconductor and Related Device Manufacturing employers would represent a new industry for the Yuma Region.

Tech Services

The *Tech Services* niche market heavily emphasized the increased importance on data centers and warehousing, as well as computer programming and related services. Comprising of four NAICS industries, this diverse niche market is growing at a rapid pace, with future growth projected both in the state and nation. The industries identified provide high paying wages and attracting new business in this niche market would continue to strengthen and expand the region’s standing as a growing high-tech hub.



Entertainment

Based upon further evidence shown in the “Target Industry Analysis” section, the project team has chosen *Entertainment* as a key target cluster for the City of Yuma. Below is a general overview, including the niche markets and accompanying 6-digit industries that comprise the cluster. Additionally, a general overview, and key insights into each niche market are shown with more details and analysis shown later in the report.

Niche Markets & Industries in Cluster

Recreation

- 312120 Breweries
- 312140 Distilleries

Entertainment

- 711310 Promoters of Performing Arts, Sports, and Similar Events with Facilities
- 713110 Amusement and Theme Parks

Overview

The *Entertainment* cluster is the fourth target industry identified, with two niche markets comprising of a total of four NAICS industries. The cluster was informed through stakeholder input as well as City Council and Yuma Government representatives, as a consistent message for increased quality of life in the region was desired. Below is a snapshot of each niche market with more information later in the Targeted Industry Analysis section of the report.

Recreation

The *Recreation* nice market is comprised of two NAICS industries, both revolving around production and consumption, as well as tourism and attraction. A desire for an increased quality of life, and more attractions within downtown Yuma was presented, with the project team ultimately deciding on Breweries and Distilleries as potential niche market. As explained later in the report, the current growth of both industries has fueled a completely new sector for cities around the country, and the rise in “microbreweries” have anchored small downtowns, increased civic pride, and created new jobs and economic growth in the process.

Entertainment

Growing on the potential increased quality of life and attraction in the *Recreation* subgrouping, the *Entertainment* niche market is comprised of two NAICS codes that heavily involve attraction and tourism. Again, the importance of quality of life not only impacts tourism and visitors, but those living in Yuma and the greater region.



Life Sciences

Based upon further evidence shown in the “Target Industry Analysis” section, the project team has chosen *Life Sciences* as a key target cluster for the City of Yuma. Below is a general overview, including the niche markets and accompanying 6-digit industries that comprise the cluster. Additionally, a general overview, and key insights into each niche market are shown with more details and analysis shown later in the report.

Niche Markets & Industries in Cluster

Medical Manufacturing

- 339112 Surgical and Medical Instrument Manufacturing

Research and Development

- 541714 Research and Development in Biotechnology (except Nanobiotechnology)
- 541715 Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
- 621511 Medical Laboratories

Overview

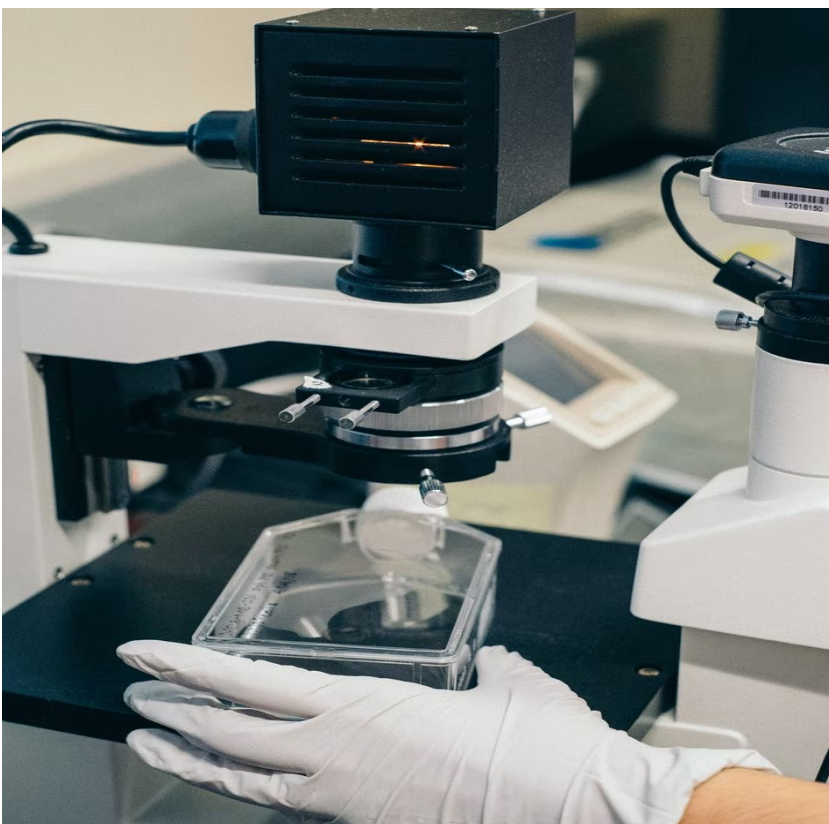
The *Life Sciences* cluster is the fifth, and final, target industry identified, with two niche markets comprising of a total of four NAICS industries. The cluster was informed through a number of different inputs, including building upon the current growth in the Healthcare sector in the region, as well as an increased push for more Research and Development in the science field. Below is a snapshot of each niche market with more information later in the Targeted Industry Analysis section of the report.

Medical Manufacturing

The *Medical Manufacturing* niche market is comprised of one NAICS industry, that includes the production of surgical and other medical equipment as needed in the growing Healthcare sector. As explained later in the report, this type of light manufacturing aligns well with the development goals of the city, as well as potentially filling a supply gap that is currently being met by imports. While rather limited in scope, the projected job growth and high wages make this niche market attractive and competitive as the rest.

Research and Development

The *Research and Development* niche market builds on the commitment to expanding the research and development footprint in the region, as well as building on the partnerships through the local workforce, education, and economic development organizations. With the need for highly skilled labor, the local cross-sector collaborative presence in Yuma allows for attracting such a niche market. Additionally, the niche market is projected for growth in jobs and provides well paying positions.



Target Industry Alignment

Economic development activities are supported by more than just one department. It is important to consider how each target industry fits into regional and statewide programs. Yuma’s City Council has identified several key industries and areas within the city’s strategic plan. The City is also supported on a wider scale by the Arizona Department of Commerce, that has also identified target industries and created programs to support their growth. Not every statewide or regional target aligns with those of Yuma, but each local target should fit into the broader framework.

By aligning targets, the City of Yuma will be able to leverage marketing, education, financial, and other supportive resources provided by the state and region. Local economic development efforts must also highlight the opportunities that make Yuma unique within the region and within Arizona.

PROPOSED YUMA TARGET	STAKEHOLDER TARGETS	CITY COUNCIL TARGETS	ARIZONA TARGETS
Advanced Manufacturing	Advanced Manufacturing Aerospace	Advanced Manufacturing Aerospace	Advanced Manufacturing Aerospace Defense
Logistics & Processing	Transportation Logistics	Food Processing	Business Services
Science, Energy, & Technology	Green Energy Agri-Tech	Science Aerospace	Aerospace
Entertainment	Quality of Life Downtown	Quality of Life Downtown Riverfront	Film & Digital Media
Life Sciences	Healthcare Research & Development	Science	Bioscience Healthcare

Target Industry Analysis

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Life Sciences.....	Pages 69 - 80

Advanced Manufacturing

Informed by data, insights about the region, feedback from community stakeholders and vetted by a team of Economic Development and Research/Evaluation experts, the first target industry is the *Advanced Manufacturing* cluster for the greater Yuma region. The *Advanced Manufacturing* cluster is broken into two niche markets: (1) Aerospace and Defense and (2) Technology. To best inform the selection of these sectors and subsectors, the team at TPMA kept the following list of four considerations at the forefront throughout the process:

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?
2. Do the identified industries coincide with established development goals?
3. Do the recommended industries have growth potential and/or a base to diversify?
4. Do the recommended industries address an unmet need/demand from the population?
5. What is the potential impact of the recommended industries on the economy of the region?

The following questions are answered through data and insights in the pages that follow. Additionally, below are specific identified industry North American Industry Classification System (NAICS) codes that form the base for the *Advanced Manufacturing* cluster.



INDUSTRY NAICS CODES

<u>6-Digit Code</u>	<u>Industry Description</u>	
336411	Aircraft Manufacturing	Aerospace & Defense
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	
336414	Guided Missile and Space Vehicle Manufacturing	
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	
334418	Printed Circuitry Assembly (Electronic Assembly) Manufacturing	Technology
335911	Storage Battery Manufacturing	

NAICS Overview

Our *Advanced Manufacturing* cluster strategy is built around attracting employers and expanding the region's high-technology sector, straddling manufacturing and data/support operations. In terms of manufacturing, we zeroed in on industries that make high-tech electronics components, next generation electric vehicle components, and space, satellite, and aircraft components and parts. An expanded high-tech manufacturing cluster will also lead to increased demand for support operations, namely systems design and data processing, storing, and analysis centers. Taken together, these industries a) pay strong average wages for employees and b) are poised to expand and grow through 2030. The table below lists each specific industry subsector under consideration and highlights trends in growth (US and within Arizona), Employment, establishments, and earnings (Arizona).

Growth and Earnings

NAICS	Industry	21' - 30' Projected Growth US	21' - 30' Projected Growth AZ	Average Industry Earnings 2021, AZ
336411	Aircraft Manufacturing	(5%)	11%	\$120,424
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	(4%)	12%	\$96,769
336414	Guided Missile and Space Vehicle Manufacturing	20%	25%	\$151,162
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	24%	37%	\$110,913
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	27%	(31%)	\$92,238
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	7%	9%	\$103,512
335911	Storage Battery Manufacturing	40%	18%	\$74,677

Employment and Establishments

NAICS	Industry	Arizona Est., 2021	Employment, 2021, AZ	Average Employees per Est.
336411	Aircraft Manufacturing	35	5,239	150

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NAICS	Industry	Arizona Est., 2021	Employment, 2021, AZ	Average Employees per Est.
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	65	4,391	68
336414	Guided Missile and Space Vehicle Manufacturing	4	14,876	3,719
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	2	764	382
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	1	392	392
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	24	783	33
335911	Storage Battery Manufacturing	3	243	81

NAICS Takeaways

While the takeaways from the NAICS table are generally positive (strong wages and strong national/Arizona expected growth), some important caveats are in order as well. First, although the “Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment” sector (NAICS 336419) is expected to grow nationally, Arizona’s lone employer in this sector has seen a drop in employment that is expected to continue through 2030, countering national trends in the subsector. Further examination of the particular issues plaguing this industry in Arizona is warranted, although it does indeed fit the profile and general screening criteria, we applied for the Yuma region. The “Other Aircraft Parts and Auxiliary Equipment Manufacturing” (NAICS 336413) is the only industry listed with projected decline in jobs nationally. That said, the strong projected growth in Arizona over this period calls for the inclusion of this industry in the subgroup.

Additionally, careful consideration of the average size of an employer establishment in these prospective industries should be at the forefront of consideration. With average employee counts of less than 100, three of our seven recommendations could slot in nicely to established sites. Guided Missile/Space vehicle Propulsion and Guided work site of between 375 and 400 employees, will require additional consideration in terms of real estate and industrial zoning, while large-scale production of space vehicles or missile assembly would require a massive workforce and large-scale investment and site development.

Finally, a last footnote, the Printed Circuit Assembly Subsector (NAICS 334418) could well have been listed under a different industry cluster we present for this project: *Supply Chain and Processing*. Not only are these tech-heavy jobs that pay good wages in a high growth industry, but the goods also they produce are in high-demand in the region. While the team ultimately included Circuit Assembly in the high-tech bucket, it does satisfy a unique need already present in the region as well.



1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?

To best define the region's advantages/unique assets, the team at TPMA took a 2-pronged approach, relying on 1) insight from community members, gathered through a series of focus groups/interviews and 2) data-informed metrics that considered the region's current industry mix/output/gaps, the skills needed in the industry, and the region's existing workforce.

With regard to the *Advanced Manufacturing* cluster of industries we have identified, there were primary factors identified by focus groups/interviewees as relevant assets:

- 1. The Region's Supply of Water.** Through conversations with elected officials, ED professionals, and vested citizens of the region, there was almost universal consent that the region holds a great advantage with its senior water rights to the Colorado River. This advantage brings the ability to house new industries that rely on water consumption compared to nearby cities that do not have this luxury. A Circuit Assembly plant, as an example, would help draw down the region's surplus water supply in a sustainable manner.
- 2. Established Foothold in Aerospace/Defense-** This includes manufacturing of aeronautic components within the state, the Yuma Proving Ground, and a large military population with transferable skills that could be tapped for high technology, defense-related occupations, post-enlistment.
- 3. Potential Spaceport-** as the region moves forward with this exciting new initiative, it will lend itself to future opportunities to support the burgeoning industry. With the Marine Corps Air Station and Yuma International Airport sharing one facility, the controlled airspace surrounding the region is a definite draw for high-tech manufacturers of weapons, navigation, satellite, and aerospace components seeking for added security and ready access to established military/civilian partnerships.

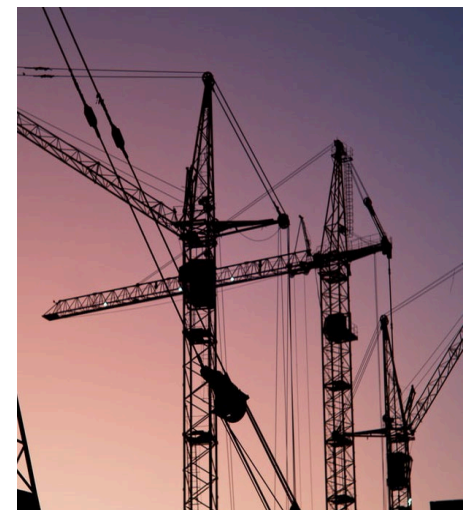


4. Cross-Border Collaboration, access to an International Pool of Talent- not only is Yuma's proximity to the Southern border a major asset when promoting transportation and distribution networks, but the work between Mexican and US workforce officials ensures it is an asset for talent recruitment as well. With 2 major Mexican universities within a 2-hour drive of Yuma, the region already enjoyed an informal recruiting network that led to significant workforce attraction of international graduates, especially in the engineering/architecture fields. In January of 2022, the Arizona Department of Employment, in collaboration with their counterparts in Mexico, integrated the state-sponsored job banks and posting boards, to promote opportunities in the United States directly to the regional population of Mexico at large. Though still in its early stages, this evolution and intentional cross-border collaboration has the potential to turbo-charge the influx of talent from Mexico.



- 5. Clear skies, Good Weather, and an Open Trajectory to Space-** related to the strengths of the region as a contender for the next Spaceport, the weather conditions make the region ideal not just for agriculture, but for high-tech industries that rely on frequent launches and outdoor testing of systems and components. Although specific to the burgeoning satellite industry, the clear trajectory for launches, causing little or no disruption to commercial air traffic and a short, seven second trip to reach the Sea of Cortez means an extra level of security and safety for the population should complications require an aborted launch and the unexpected return to earth of satellites or launch hardware.
- 6. Light Industrial Zoning-** while the larger-scale suggestion ("Guided Missile and Space Vehicle Manufacturing", NAICS 336414) would require a larger footprint and, likely, heavy industrial zoning, the other selections on this list are driven in no small measure by the need to fit into light-industrial zoned facility.

Although not at the forefront of this industry exploration, it is also worth noting that the transportation network, an expanding base of warehousing and storage options in the region, and the nimble and flexible workforce/education/employer training nexus can all be leveraged to promote the suitability of the region for this *Advanced Manufacturing* cluster of industries as well. Although a focus of a separate industry cluster, it should be noted that the supply chain disruptions and affiliated trend toward on-shoring of component manufacturing and shortening of supply networks also affords new opportunities for high-tech manufacturers looking to support the needs of large-scale manufacturers already located in the state.



Skills Match

The staffing patterns below indicate the occupational makeup of the industry NAICS in the *Advanced Manufacturing* cluster. Data is derived on the county level from Emsi-Burning Glass, with identified skills for each occupation coming from job listings for each occupation in the region. NAICS were combined based on comparability of industry, with percentage of total jobs in industry group listed, total employment in Yuma for each occupation, typical entry level education, median hourly earnings, and skills needed. Overall, jobs in this cluster typically require higher levels of education, with college degrees prevalent. Skills including merchandising, management, software, and programming among several others are commonly listed in job postings.

With the *Advanced Manufacturing* cluster supplying occupations that are typically higher-skilled, educated positions, many of the jobs pay above median hourly earnings. That said, in order for the current workforce to gain some of the critical skills needed to fill the occupations that make up the *Advanced Manufacturing* cluster, the workforce and educational entities around Yuma should collaborate on what skill building courses, curriculum, and programs can, should, and are currently be offered. Gaging demand might be needed for certain skills based on new employment and businesses attracted to the region. In particular, an inventory of all training programs related to programming, computer science, and engineering would be greatly beneficial to the cluster's recruitment.

Aviation and Defense

The top five occupations that most commonly fill the Aviation and Defense industry subgroup are shown below. Typically, these occupations require at least a bachelor's degree with many advanced skills. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column, including programming, computer science, manufacturing, aviation, and engineering. The high level of required education and skills for each of the occupation leads to well above average median hourly earnings. The Software Developers and Software Quality Assurance Analysts and Testers occupation make up the largest percentages of jobs in this industry grouping.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	6.3%	Bachelor's degree	1,609	\$48.52	<ul style="list-style-type: none"> - Agile Methodology - Java (Programming) - Computer Science
17-2112	Industrial Engineers	6.3%	Bachelor's degree	1,606	\$46.13	<ul style="list-style-type: none"> - Manu. Process - Lean Manu. - Corrective & Preventive Action
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3.8%	High school diploma or equivalent	984	\$20.47	<ul style="list-style-type: none"> - Auditing - Calipers - Micrometer

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SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
17-2141	Mechanical Engineers	3.8%	Bachelor's degree	979	\$46.25	<ul style="list-style-type: none"> - Mechanical Engineering - Mechanical Design - Computer Aided Design
49-3011	Aircraft Mechanics and Service Technicians	3.8%	Postsecondary nondegree award	977	\$31.78	<ul style="list-style-type: none"> - Aircraft Maintenance - Aviation - Mechanics

Technology

The top five occupations that most commonly fill the Technology industry subgroup are shown below. Typically, these occupations require at least a high school diploma, with some requiring a bachelor's degree. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column. That said, several of the occupations offer on-the-job training, allowing employees to build on existing or learn new skills that may be listed. With many related skills to the industry grouping before, programming and manufacturing skills are crucial talent needs in order to fill the *Advanced Manufacturing* target cluster. The Technology subgroup overall is slightly less advanced than the Aerospace and Aviation, providing lower educational requirements and subsequent wages.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	11.0%	High school diploma or equivalent	113	\$17.67	<ul style="list-style-type: none"> - Agile Methodology - Java (Programming) - Computer Science
51-9141	Semiconductor Processing Technicians	10.4%	High school diploma or equivalent	107	\$30.24	<ul style="list-style-type: none"> - Medical Records - Semiconductors - Cleanrooms
51-2098	Miscellaneous Assemblers and Fabricators	4.6%	High school diploma or equivalent	47	\$15.18	<ul style="list-style-type: none"> - Hand tools - Power tool Operation - Warehousing
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	4.3%	Bachelor's degree	44	\$48.52	<ul style="list-style-type: none"> - Agile Methodology - Java (Programming) - Computer Science
17-2112	Industrial Engineers	4.0%	Bachelor's degree	41	\$46.13	<ul style="list-style-type: none"> - Manu. Process - Lean Manu. - Corrective & Preventive Action

2. Do the identified industries coincide with established development goals?

At the onset of this project, even back to the original Request for Proposals issued by the Yuma team, a focus of this analysis has been an assessment of high-technology opportunities for the region. Focus groups and individual conversations with community leaders and vested partners all echoed this refrain: Yuma needs to expand its high-tech footprint. The community understands that:

- a) These type of high-technology industries are the growth sectors of the future and should be a centerpiece of any long-term diversification planning.
- b) The types of jobs that make up these industries are both high paying and, in some cases, require only short-term credentialing or on-the-job training for access. Expanding these type of industries will result in myriad opportunities for the citizens of Yuma to reach their professional goals and ensure financial stability.

The local leaders and vested stakeholders we spoke to also emphasized the importance of making sure the workforce fit was appropriate to “diversify up” the technology continuum. With this in mind, we explored the match of skills these industries require to the existing workforce as shown previously. Attracting investment and industries that are within these high-tech clusters certainly checks an important box for the region: expansion of high-paying employment opportunities.

These industries, taken together, represent a considerable step up the technology continuum for the workforce in Yuma county.



3. Do the recommended industries have growth potential and/or a base to diversify?

To focus in on the potential base for high-tech industry evolution in the region, we start with a wide lens to highlight the relevant industry sectors in the region. Given our specific, 6-digit, detailed industry diversification recommendations, it is more useful to take this high-level approach to the broader industry families in the region, illustrating the potential for high-tech evolution up the industry ladder. With that in mind, the table below shows the relevant industry statistics for the NAICS families of 334, 335, and 336.

Within Yuma County itself, there is a reasonable base of technology manufacturing and scientific and technical workers to build on. From 2015 to 2021, jobs in the broader tech-based cluster grew over 14%, showing an expanding pool of potential employees. Based on forecasting models from EMSI/Burning Glass™, this trend appears poised to continue within the county, with the collection of industries projected to grow employment by another 155 jobs, or 42%, by 2030.



NAICS	Industry	2015 Jobs	2021 Jobs	2030 Projected Jobs	'21 to '30 Employment Change
334	Computer and Electronic Product Manufacturing	30	37	55	47%
335	Electrical Equipment, Appliance, and Component Manufacturing	170	178	222	25%
336	Transportation Equipment Manufacturing	123	154	247	61%
	Total, Selected Families	323	369	524	42%

Providing an even larger overview, the table below highlights employment growth trends, both historic and predicted for Arizona. The trends in the table are encouraging while highlight the explosive potential for future growth in these high-tech suggestions.

NAICS	Industry	Arizona 2015 Jobs	Arizona 2021 Jobs	AZ, 2030 Projected Jobs	'21 to '30 Employment Change
334	Computer and Electronic Product Manufacturing	33,216	33,477	33,861	1%
335	Electrical Equipment, Appliance, and Component Manufacturing	2,418	3,048	3,812	25%
336	Transportation Equipment Manufacturing	28,799	35,057	40,200	15%
	Total, Selected Families	64,433	71,582	77,873	9%

4. Do the recommended industries address an unmet need/demand from the population?

To quantify the demand for the industry services in the region, we drew on industry spending estimates for the year of 2021, based on data from the US Bureau of Economic Analysis. Between dollars spent in region (Yuma) and dollars spent out of region (anywhere else), the specific NAICS industries listed spent a whopping \$108M on Aerospace and Defense (336 Codes) manufacturing goods and services, and near \$11M on Technology (334-335 Codes) related manufacturing good and services. Unfortunately, the vast majority of those dollars went to out of region businesses, as highlighted in the table below. In fact, in-region demand met for Aerospace and Defense industries is near 0% for each of the NAICS listed. This means while there is a large demand of goods and services for this sector, a majority of the products needed for these industries are being bought elsewhere. While this may be expected for the heavy and advanced manufacturing sectors, the complete lack of product to distribute to the Aerospace and Defense sectors in Yuma is surprising. More detail on insights from the table below can be found on the next page.

NAICS	Industry	2021 In-Region Demand Met	In-Region Demand Spending	Out-Region Demand Spending	2%, Out-Region Market Share	5%, Out-Region Market Share
336411	Aircraft Manufacturing	0%	\$116,567	\$78,153,234	\$1,563,065	\$3,907,662
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1%	\$67,782	\$5,692,276	\$113,846	\$284,614
336414	Guided Missile and Space Vehicle Manufacturing	1%	\$108,089	\$20,530,476	\$410,610	\$1,026,524
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	0%	\$0	\$2,236,124	\$44,722	\$111,806
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	0%	\$0	\$1,293,906	\$25,878	\$64,695
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	0%	\$0	\$4,411,833	\$88,237	\$220,592
335911	Storage Battery Manufacturing	91%	\$5,900,476	\$562,404	\$11,248	\$28,120

While a full list of the row labels/value descriptions **appears below** for consideration, the table previously shown on the last page illustrates two key takeaways:

1. Overall, the demand of Yuma's Advanced Manufacturing industries (selected in this report) are being met outside the region, specifically for Aerospace and Defense. While Yuma could not possibly provide all the products and services needed for the Aerospace and Defense subgroup, total demand (in dollars) for these industries totals near \$120M, or 4% of the entire demand in the state. This is a significant amount of money being sent out of the region.
2. The market potential for a mid-sized aircraft or guided missile manufacturer in the Yuma region is considerable. The last 2 rows highlight the dollar value of capturing a mere 2 or 5 percent of all the out-of-region sales, respectively. With Yuma having such a high demand for these products thanks to its competitive assets, producing just a small portion of the needed products could produce millions of dollars for in-region purchases.

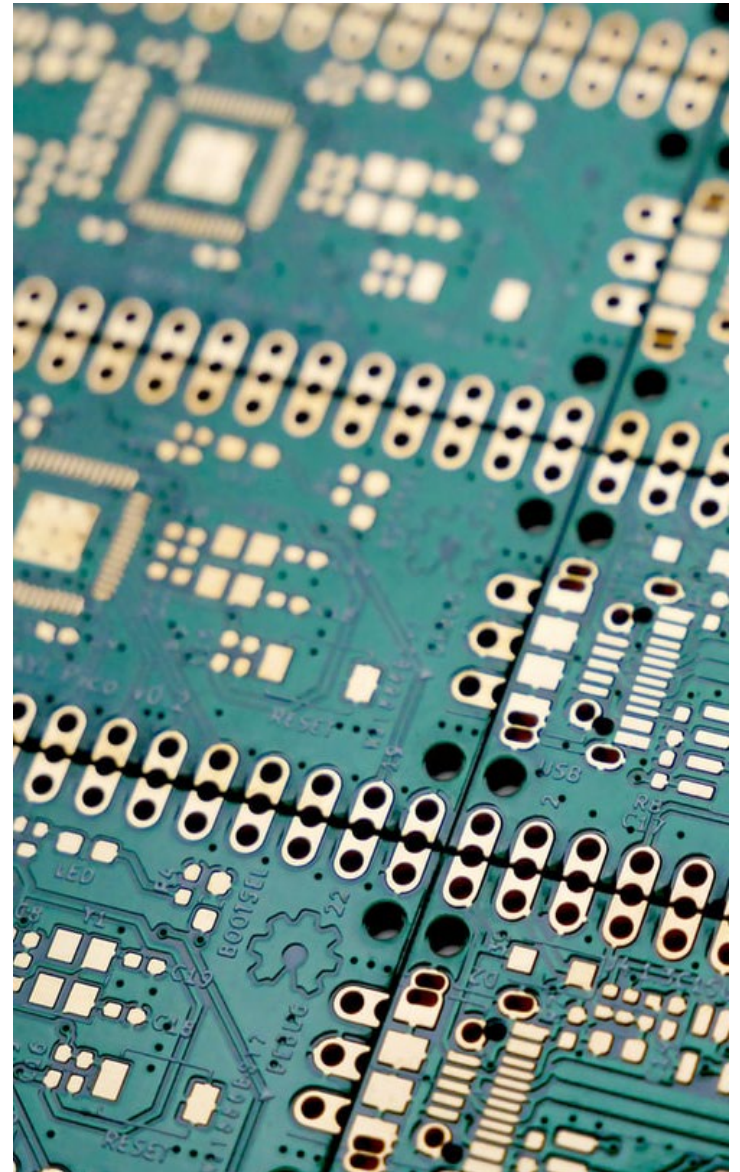
Description of Row Labels

- **2021 In-Region Demand Met:** The percentage of all spending by Arizona citizens and Arizona-based industries within the region on the goods and services offered by the respective industry subsector.
- **In-Region Demand Spending:** Dollar value of all sales and services to in-region consumers, by in-region establishments
- **Out-Region Demand Spending:** Dollar value of all sales and services to in-region consumers, by out-of-region establishments
- **2%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 2% of the total out-region spending by consumers
- **5%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 5% of the total out-region spending by consumers



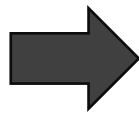
5. What is the potential impact of the recommended industries on the economy of the region?

A forecast including changes in earnings, jobs, and taxes on production and imports (TPI) is included to highlight the economic impact of attracting new businesses in the *Advanced Manufacturing* target cluster on the Yuma regional economy. Several NAICS Codes were left out of the Input/Output (I/O) model due to the size of the average establishment for each industry. In the Aerospace and Defense subgroup model, the addition of one (1) mid-sized aircraft manufacturer, and one (1) mid-sized Aircraft Parts/Equipment Manufacturer are calculated, while all other larger establishments are left out. Additionally, for the Technology subgroup both industries gain one prospective mid-sized employer. The model helps showcase the impacts of adding a business to the region in one of the target NAICS. Total jobs added in the region are based off of the average employees per establishment in the state of Arizona for each of the industries. The columns highlighted in green in the table show both how many new establishments (businesses) have entered into the region as well as the corresponding jobs. For more information on the input/output model calculation methodology, please see [here](#). Below are definitions of each of the categories in the impact model:



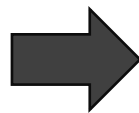
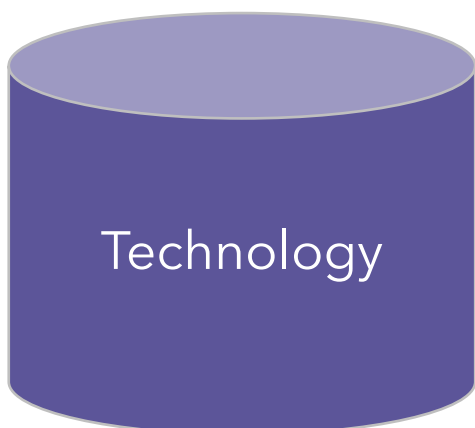
- Initial Change: Shows the change in earnings for the industry employer, and the number of new jobs created. For these examples, we set the new jobs at 300.
- Direct Change: The impact these 300 new jobs will have on the supply-chain, other employers, also in terms of additional earnings and jobs created. In the Aerospace and Defense example below, adding 200 new jobs in the initial phase is projected to generate the creation of 10 new supply chain positions.
- Indirect Change: Highlights a further ripple effect of the initial 72 jobs, stated more awkwardly, this shows the change in revenue and employment for the “supply chain’s, supply chain”.
- Induced Change: Shows the change brought about by the earnings of employees as they spend in them in the community, the investments they make, and the subsequent government created to manage the direct, indirect, and initial changes in earnings. The final column highlights the net impact of all the change waves on local, state, and federal taxes received.

NAICS	Industry	Arizona Est. 2021	Current Yuma Est. 2021	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
336411	Aircraft Manufacturing	35	0	150	1	150
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	65	0	68	1	50
336414	Guided Missile and Space Vehicle Manufacturing	4	0	3,719	0	0
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	2	0	382	0	0
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	1	0	392	0	0



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$12.1M	200	-
Direct	\$480K	10	-
Indirect	\$100K	3	-
Induced	\$2.5M	56	-
Local	-	-	\$378K
State	-	-	\$371K
Federal	-	-	\$389K

NAICS	Industry	Arizona Est. 2021	Current Yuma Est. 2021	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	24	0	33	1	30
335911	Storage Battery Manufacturing	3	1	81	2	70



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$5.6M	100	-
Direct	\$397K	9	-
Indirect	\$73K	2	-
Induced	\$1.4M	31	-
Local	-	-	\$268K
State	-	-	\$274K
Federal	-	-	\$315K

Industry Demand Table

The addition of new businesses in the *Advanced Manufacturing* cluster will not only benefit each sectors growth, but others around it. By finding the most common purchases for each target NAICS industry in the cluster, we can start to see how the local supply chain may be impacted. As Yuma has relatively low representation from the NAICS target industries as discussed previously, in-region and imported purchases are shown on the state (AZ) and national level. Purchases are shown in percentages to give an idea of where Yuma will see the most influx of dollars spent by potential target industries in the region that may be brought in.



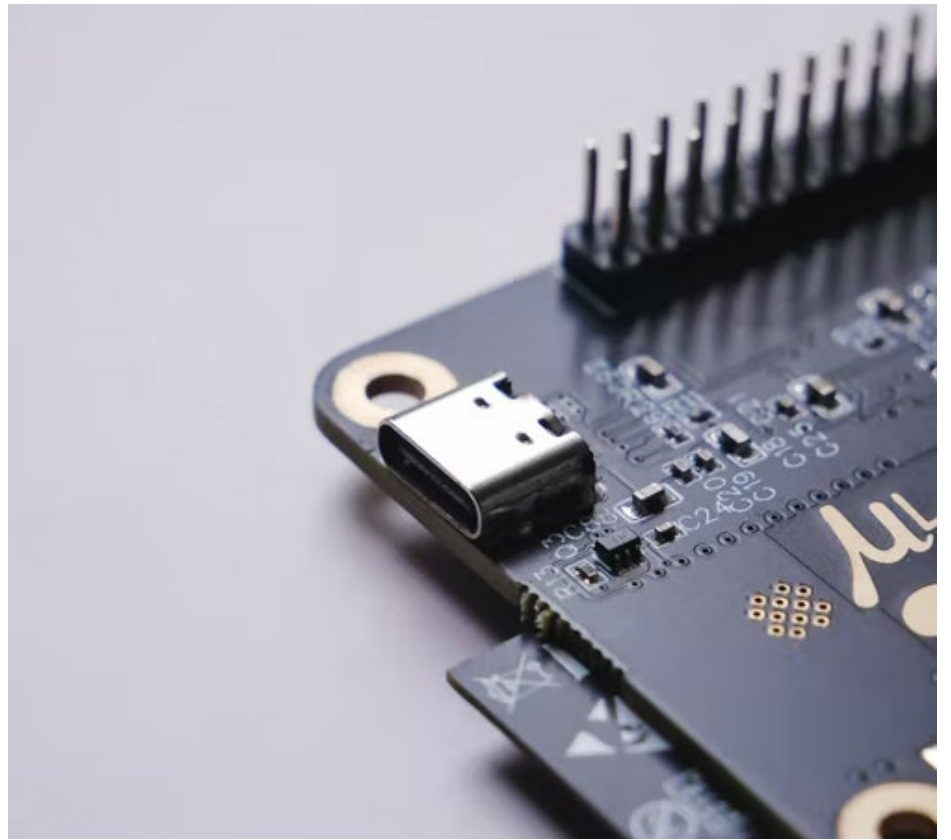
Aerospace and Defense

In the Aerospace and Defense industry subgrouping, top purchases for these industries come from the Aircraft Engine and Engine Parts Manufacturing, as well as the Guided Missile and Space Vehicle Manufacturing industry. In Arizona, on average, 12% and 8% of all spending for the Aerospace and Defense industry groupings go towards these industries. That said, as mentioned previously, Yuma lacks many of the aircraft and guided missile manufacturing plants (hence why such a large % of purchases are spent outside of the region). Gaining a manufacturer in this field would not only benefit the specific industry, but the entire Aerospace and Defense subgroup due to the multiplier supply chain effects.

NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
336412	Aircraft Engine and Engine Parts Manufacturing	12%	12%
336414	Guided Missile and Space Vehicle Manufacturing	8%	4%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	7%	13%
551114	Corporate, Subsidiary, and Regional Managing Offices	5%	6%
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	5%	2%
336411	Aircraft Manufacturing	4%	9%
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	3%	2%
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	3%	1%
541110	Offices of Lawyers	2%	3%
423830	Industrial Machinery and Equipment Merchant Wholesalers	2%	2%

Technology

For the Technology industry subgrouping, the highest percentage of purchases for these industries come from the Corporate, Subsidiary, and Regional Managing Offices. Semiconductor and Related Device Manufacturing, as well as Printed Circuitry Assembly (Electronic Assembly) Manufacturing industries also have high percentages of total purchases. Total purchases for the industry groupings differ slightly between Arizona and the nation. While Yuma has relatively low employment representation of the industries listed, the concentration of purchases in the top three industries listed (over 40%) leads to a potential multiplier effect in supply chain benefits if companies in the Technology industry subgroup were to be brought in.



NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
551114	Corporate, Subsidiary, and Regional Managing Offices	20%	16%
334413	Semiconductor and Related Device Manufacturing	11%	8%
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	10%	8%
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	4%	7%
423690	Other Electronic Parts and Equipment Merchant Wholesalers	3%	2%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	3%	2%
541110	Offices of Lawyers	3%	2%
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	3%	5%
334419	Other Electronic Component Manufacturing	2%	2%
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	2%	3%

Supply Chain and Processing

Informed by data, insights about the region, feedback from community stakeholders and vetted by a team of Economic Development and Research/Evaluation experts, the second target industry is the *Supply Chain & Processing* cluster for the greater Yuma region. The *Supply Chain & Processing* cluster is broken into two niche markets: (1) Agriculture Advancement, (2) Manufacturing & Transportation Progression. To best inform the selection of these sectors and subsectors, the team at TPMA kept the following list of five considerations at the forefront throughout the process:

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?
2. Do the identified industries coincide with established development goals?
3. What is the potential impact of the recommended industries on the economy of the region?

As seen, both the questions of "Do the recommended industries address an unmet need/demand from the population?" and "Do the recommended industries have growth potential and/or a base to diversify?" are not directly outlined in this section as the *Supply Chain and Processing* cluster is directly centered around industries that both try and meet an unmet demand as well as build off of current supply chain successes. For these reasons it would be redundant to list these questions as they were both in top consideration when selecting the industries.

The following questions are answered through data and insights in the pages that follow. Additionally, below are specific identified industry North American Industry Classification System (NAICS) codes that form the base for the *Supply Chain & Processing* cluster.



INDUSTRY NAICS CODES

6-Digit Code	Industry Description	
325311	Nitrogenous Fertilizer Manufacturing	Agriculture Advancement
325312	Phosphatic Fertilizer Manufacturing	
325314	Fertilizer (Mixing Only) Manufacturing	
332710	Machine Shops	Manufacturing and Transportation Progression
333618	Other Engine Equipment Manufacturing	
541330	Engineering Services	
448510	Freight Transportation Arrangement	

NAICS Overview

The *Supply Chain and Processing* cluster concentrates on gaps in the current manufacturing and agricultural sectors in the region, identifying high-growth industries that, currently, satisfy the supply chain demands of established employers from outside the greater Yuma region. To support these suggestions, the team relies heavily on industry spending patterns data from 2021, as provided through EMSI/Burning Glass™ with data imported from the US Bureau of Economic Analysis.

The rest of this summary will mirror the format of our other industry reviews, but to highlight the importance of the supply gap potential, we present our initial overview highlighting the potential market to be captured in the table below.

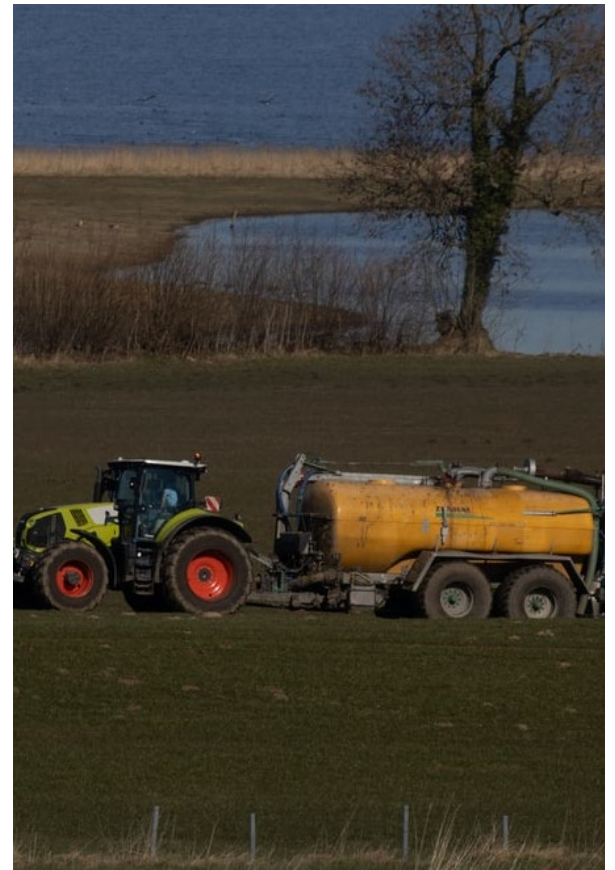
Industry Subsectors, 2021 Industry and Consumer Purchases in Yuma County

NAICS	Industry	2021 Total Purchases	Percent Purchased In-Region
325311	Nitrogenous Fertilizer Manufacturing	\$16,023,548	0.00%
325312	Phosphatic Fertilizer Manufacturing	\$9,654,900	0.00%
325314	Fertilizer (Mixing Only) Manufacturing	\$11,505,729	2.30%
332710	Machine Shops	\$3,544,436	2.0%
333618	Other Engine Equipment Manufacturing	\$12,576,558	0.00%
488510	Freight Transportation Arrangement	\$12,957,679	24.9%
541330	Engineering Services	\$84,764,970	40.2%

Taken together, this collection of 7 potential industries accounted for \$151 million in sales to Yuma county businesses/residents, with Yuma-area suppliers accounting for only \$37 million of that total. While the last 2 suggestions- Freight Transportation Arrangement and Engineering Services- do indeed have a foothold in the region, accounting for 24.9% and 40.2% of the Yuma county sales, respectively, the booming market for each warrant's close consideration as a potential base to cultivate and expand.



The Agriculture Advancement subgroup of industries (fertilizer family NAICS 325311, 325312, and 325314) should also include a particularly timely note with regard to the fragility of the supply chain. Competition in this field is extremely limited- with 4 major suppliers dominating the industry, leaving it especially exposed to supply chain disruptions. To address this major concern to the agricultural community- facing increasing pressure and severely curtailed global production in part to Russia's war on Ukraine- the U.S. Department of Agriculture (USDA) is announcing it will support additional fertilizer production for American farmers to address rising costs and spur competition. The [USDA will make available \\$250 million](#) through a new grant program this summer to support independent, innovative and sustainable American fertilizer production to supply American farmers. The new program will support fertilizer production that is independent, made in America, innovative, sustainable, and farmer focused. With these considerations now, it seems, it is **the** time to launch/attract new fertilizer production ventures.



In terms of real and projected industry growth, 5 of the 7 identified industries in this cluster are projected to grow employment by double-digit percentages between now and 2030. The 2 decliners- NAICS 325312 & 325314- are both in the fertilizer manufacturing industry. Normally, these types of downward trends would exclude the sectors from consideration, however, with the aforementioned government incentives in mind, further examination of the industries as possibilities seems well warranted. Establishments, employment, wages, and projected growth estimates appear in the table below. Data is represented by the state of Arizona, unless noted otherwise.

NAICS	Industry	2021 Jobs	2021 - 30 Projected Employment Growth	2021 Establishments	2021 Employment per Establishment	Avg. Earnings Per Job
325311	Nitrogenous Fertilizer Manufacturing	186	26%	6	30	\$99,127
325312	Phosphatic Fertilizer Manufacturing*	5632	(13%)	63	89	\$129,923
325314	Fertilizer (Mixing Only) Manufacturing	99	(8%)	5	19	\$64,446
332710	Machine Shops	4,393	35%	326	13	\$66,844
333618	Other Engine Equipment Manufacturing	41	44%	3	17	\$89,349
488510	Freight Transportation Arrangement	3,916	19%	452	9	\$80,940
541330	Engineering Services	19,144	11%	1,893	10	\$109,869

*Phosphatic Fertilizer Manufacturing data is for the United States, with 0 establishments in Arizona

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?

To best define the region's advantages/unique assets, the team at TPMA took a 2-pronged approach, relying on 1) insight from community members, gathered through a series of focus groups/interviews and 2) data-informed metrics that considered the region's current industry mix/output/gaps, the skills needed in the industry, and the region's existing workforce.

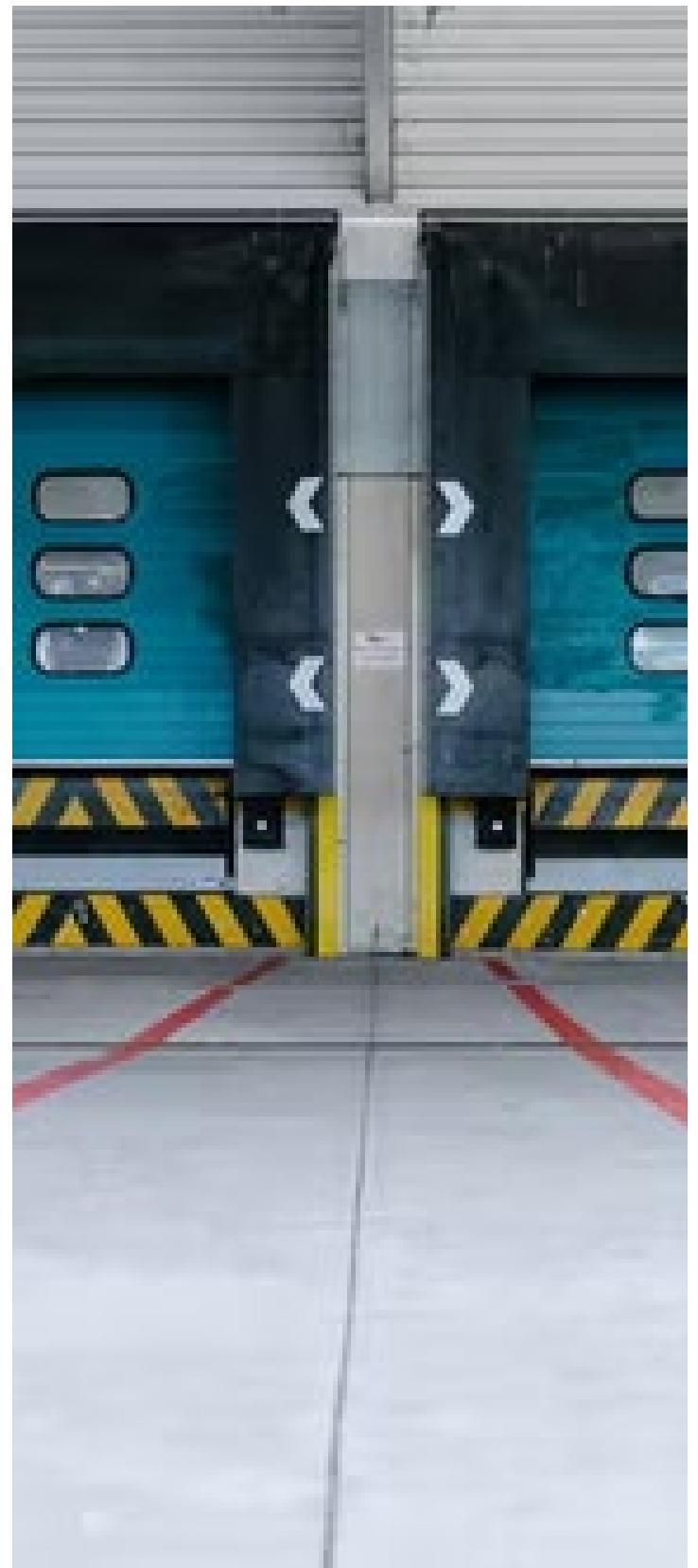
With regard to *the Supply Chain and Processing* cluster of industries we have identified, there were four primary factors identified by focus groups/interviewees as relevant assets:

1. The Region's Emphasis on Logistics/Distribution-

Through conversations with elected officials, ED professionals, and vested citizens of the region, there was a great deal of excitement about both recent successes in growing the logistics, distribution, and warehousing sector and the potential to further bolster the region. The road, rail, and air network, and easy access to the southern border make the region a natural distribution and transportation hub. When the team reviewed industry purchase data, we found that the vast majority of warehousing/transportation needs for regional industries are met by regional employers. However, the planning, facilitation, and scheduling for the movement of all this potential freight has fallen, to a large extent, to vendors outside of the region. Capitalizing on the hub and facilities already in place and in-sourcing the functions of the Freight Transportation Arrangement feels like a natural extension for the region.

2. Established Foothold in Manufacturing Sector-

setting aside the more specific footholds in, for example, aerospace and defense, the region does, in general terms have a foothold in manufacturing. These manufacturers have unique needs beyond their supply chain subsidiaries, and some of the suggested industries above address those needs. Machine Shops (332710), for example, are always in high-demand to fix, maintain, and fabricate all manner of unique tools, parts, and components. In an established sector, producing any range of goods, lost production time is lost money and the need for local, immediate machine shop support services is real to keep manufacturers humming full-speed.



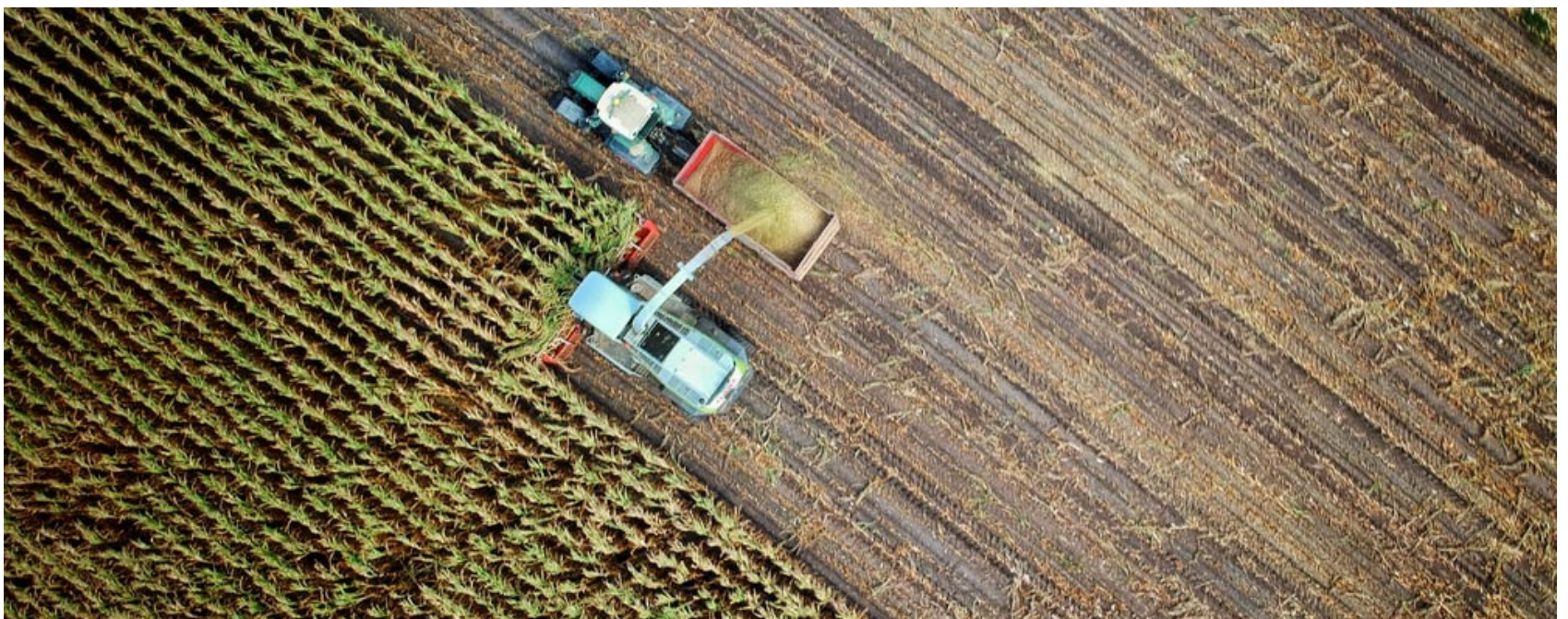
3. Cross-Border Collaboration, access to an International Pool of Talent-

not only is Yuma's proximity to the Southern border a major asset when promoting transportation and distribution networks, but the work between Mexican and US workforce officials ensures it is an asset for talent recruitment as well. With 2 major Mexican universities within a 2-hour drive of Yuma, the region already enjoyed an informal recruiting network that led to significant workforce attraction of international graduates, especially in the engineering/architecture fields. In January of 2022, the Arizona Department of Employment, in collaboration with their counterparts in Mexico, integrated the state-sponsored job banks and posting boards, to promote opportunities in the United States directly to the regional population of Mexico at large. Though still in its early stages, this evolution and intentional cross-border collaboration has the potential to turbo-charge the influx of talent from Mexico.

Interestingly, the Engineering Services Industry (NAICS 541330) was singled out as an example of these cross-border employment collaborations, with many students from Mexico both interning and, upon graduation, working full-time in the field within Yuma. With \$84 million dollars in sales in 2021 in Yuma County alone, further expansion of this industry footprint seems well warranted.



4. A Booming Agriculture Industry- both the data itself and the conversations with community stakeholders emphasized both the scale and importance of crop production to the region. Indeed, looking at the industry demand charts, the Agriculture industry alone accounted for nearly \$35 million dollars in fertilizer purchases across the three identified fertilizer subsectors under consideration. With a global crunch on both production and the need for strong supply chain bolstering, expanding industries that meet the demands of crop producers in the region is a logical next step.



Skills Match

The staffing patterns below indicate the occupational makeup of the industry NAICS in the *Supply Chain and Logistics* cluster. Data is derived on the state (AZ) level from Emsi-Burning Glass, with identified skills for each occupation coming from job listings for each occupation in the state. NAICS were combined based on comparability of industry, with percentage of total jobs in industry group listed, total employment in Yuma for each occupation, typical entry level education, median hourly earnings, and skills needed for each occupation. Overall, jobs in this cluster typically require entry levels of education, with HS degrees prevalent. Skills including merchandising, warehousing, and other fundamental job building skills are commonly listed.

The *Supply Chain and Processing* cluster differs from the previous cluster(s) as the two industry subgroups that make up the cluster are not similar in terms of educational and skill requirements. The Agriculture Advancement subgroup typically requires entry level education with strong pathways to advanced jobs. That said, the Manufacturing and Transportation Progression subgroup consists of many skilled jobs that require highly technical skills, with heavy reliance on engineering. Balancing both the skills present in the region, and what potential skills may need to be better represented is key to filling the top jobs that make up *the Supply Chain and Processing* cluster.

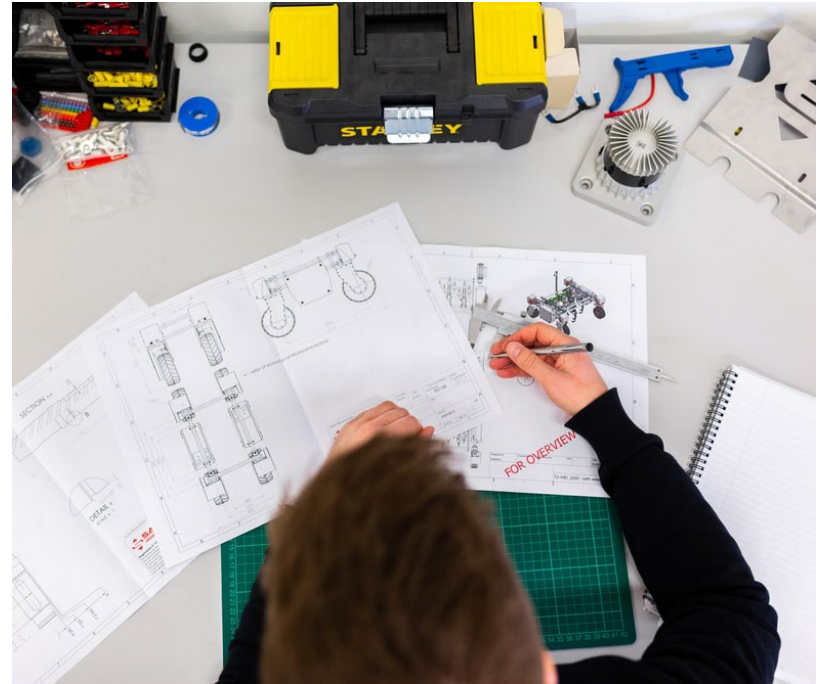
Agriculture Advancement

The top five occupations that most commonly fill the Agriculture Advancement industry subgroup are shown below. Typically, these occupations require at least a high school diploma with several advanced skills. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column, including warehousing, manufacturing, and wholesaling. The low supply of employment throughout the state for these occupations indicate the monopoly of manufacturing sites for fertilizing around the country. If Arizona and the Yuma region were to attract a new fertilizing manufacturer, building off the current skills of employees in other manufacturing positions, along with workers that have agricultural roots would be needed.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
51-9011	Chemical Equipment Operators and Tenders	13.9%	High school diploma or equivalent	40	\$20.67	<ul style="list-style-type: none"> - Manufacturing Practices - Warehousing - Chemical Process
51-1011	First-Line Supervisors of Production and Operating Workers	4.7%	High school diploma or equivalent	13	\$30.31	<ul style="list-style-type: none"> - Lean Manu. - Continuous Process Improvement - Workflow Mgmt.
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	4.6%	High school diploma or equivalent	13	\$16.72	<ul style="list-style-type: none"> - Warehousing - Wholesaling - Equipment Repair
49-9071	Maintenance and Repair Workers, General	3.6%	High school diploma or equivalent	10	\$18.26	<ul style="list-style-type: none"> - Plumbing - HVAC - Painting
49-9041	Industrial Machinery Mechanics	3.4%	High school diploma or equivalent	10	\$26.42	<ul style="list-style-type: none"> - Machinery - Hydraulics - Preventive Measures

Manufacturing and Transportation Progression

The top five occupations that most commonly fill the Manufacturing and Transportation Progression industry group are shown below. Typically, these occupations require a degree in higher education. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column. That said, many of the skills are highly specified and technical, relating to engineering programs. As this industry grouping is much more advanced than the Agriculture Advancement group, ensuring qualified labor exists in the Yuma region to fill the potential new jobs that would come from this sector should be a coordinated approach.



SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
17-2051	Civil Engineers	10.0%	Bachelor's degree	2,819	\$38.14	<ul style="list-style-type: none"> - Civil Engineering - Construction - Project Engineering
51-4041	Machinists	4.0%	High school diploma or equivalent	1,140	\$23.17	<ul style="list-style-type: none"> - Machining - Lathes - Mills
17-2141	Mechanical Engineers	3.6%	Bachelor's degree	1,016	\$46.25	<ul style="list-style-type: none"> - Mechanical Engineering - Mechanical Design - Computer-Aided Design
17-3011	Architectural and Civil Drafters	3.4%	Associate's degree	949	\$28.48	<ul style="list-style-type: none"> - AutoCAD - Computer-Aided Design - AutoCAD Civil 3D
17-2071	Electrical Engineers	3.3%	Bachelor's degree	926	\$44.53	<ul style="list-style-type: none"> - Electrical Engineering - Simulations - Electronics

2. Do the identified industries coincide with established development goals?

Another key development goal identified by the Yuma team, as early as the initial release for proposals for this project, was the need to find potential complementary sectors to the established mix of businesses in the region. This cluster of supply gap industries explicitly accounts for this goal by:

- a) Identifying in-region purchasing gaps that, if a new business was to launch in Yuma, could contribute to lowering. While it is not realistic, of course, that a new establishment can immediately “in-source” all these out of region sales, the eye-popping numbers associated with some of the subsectors show that a smaller scale, new operation has plenty of potential to build and expand a sales base right in Yuma County.
- b) For this cluster, the team screened for and focused specifically on the needs of two key industries in the region: Transportation/Logistics and Agriculture. While Agricultural manufacturing was considered heavily- and could very well still be a focus under other industry clusters- the biggest unmet (in-region) need for crop producers in Yuma County was not processing, but fertilizer. The logistics/transportation industry, similarly, could well benefit from more cold-storage warehouse options, for example, but these type of establishments are largely real estate investments, creating few new jobs (with some exceptions, of course). However, the more immediate need for the group may well be the flow of out-of-region logistics and transportation planning, bringing more local options to collaborate and grow with both goods producers and the providers responsible for hauling those goods.

While other clusters presented as part of this project emphasize the region’s interest in diversifying up the technological ladder, these suggestions are immediately compatible with the existing skills in the region, or at the very least, an established talent pipeline between Yuma and other communities (namely Mexico and its Engineering universities).



3. What is the potential impact of the recommended industries on the economy of the region?

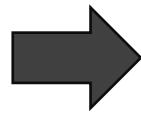
A forecast including changes in earnings, jobs, and taxes on production and imports (TPI) is included to highlight the economic impact of attracting new businesses in the *Supply Chain and Processing* target cluster on the Yuma regional economy. Rather than lump this disparate group of industries- linked primarily only by an existing in-region supply gap, two separate Input/Output analysis were run following the subgroup pairings as previously shown. The first focuses on the fertilizer industry subsectors (Agriculture Advancement subgroup) and approximate the impact of one new establishment in each NAICS industry, totaling approximately 140 new jobs in the region. The second I/O, or the Manufacturing and Transportation Progression subgroup, approximates the impact of 2 new machine shops (30 employees), 1 new manufacturer of Other Engine Equipment (20 employees), 1 new Freight Transportation Planning Agency (10 employees) and the impact of 2 new Engineering firms (25 total employees) on the region.



Total jobs added in the region are based off of the average employees per establishment in the state of Arizona for each of the industries. The columns highlighted in green in the table (on the next page) show both how many new establishments (businesses) have entered into the region as well as the corresponding jobs. For more information on the input/output model calculation methodology, please see [here](#). Below are definitions of each of the categories in the impact model:

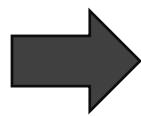
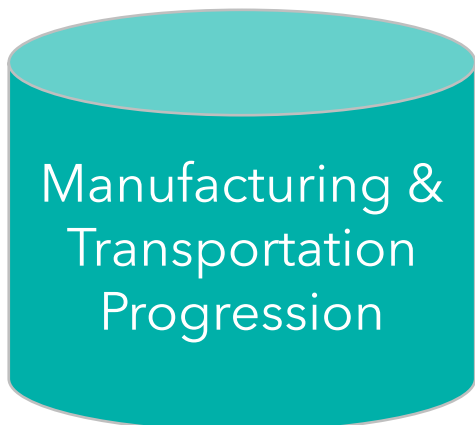
- Initial Change: Shows the change in earnings for the industry employer, and the number of new jobs created. For these examples, we set the new jobs at 220.
- Direct Change: The impact these 220 new jobs will have on the supply-chain, other employers, also in terms of additional earnings and jobs created. In the Agriculture Advancement example below, adding 69 new jobs in the initial phase is projected to generate the creation of 6 new supply chain positions.
- Indirect Change: Highlights a further ripple effect of the initial 220 jobs, stated more awkwardly, this shows the change in revenue and employment for the "supply chain's, supply chain".
- Induced Change: Shows the change brought about by the earnings of employees as they spend in them in the community, the investments they make, and the subsequent government created to manage the direct, indirect, and initial changes in earnings. The final column highlights the net impact of all the change waves on local, state, and federal taxes received.

NAICS	Industry	Arizona Est. 2021	Current Yuma Est. 2021	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
325311	Nitrogenous Fertilizer Manufacturing	6	0	30	1	30
325312	Phosphatic Fertilizer Manufacturing	63	0	89	1	90
325314	Fertilizer (Mixing Only) Manufacturing	5	0	19	1	20



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$15.4M	140	-
Direct	\$3.6M	69	-
Indirect	\$715K	18	-
Induced	\$9.0M	189	-
Local	-	-	\$2.0M
State	-	-	\$1.6M
Federal	-	-	\$537K

NAICS	Industry	Arizona Est. 2021	Current Yuma Est. 2021	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
332710	Machine Shops	326	0	13	2	30
333618	Other Engine Equipment Manufacturing	3	0	17	1	20
488510	Freight Transportation Arrangement	452	0	9	1	10
541330	Engineering Services	1,893	0	10	2	20



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$5.3M	80	-
Direct	\$553K	12	-
Indirect	\$92K	2	-
Induced	\$1.1M	24	-
Local	-	-	\$154K
State	-	-	\$126K
Federal	-	-	\$60K

Industry Demand Table

The addition of new businesses in the *Supply Chain and Processing* cluster will not only benefit each sectors growth, but others around it. By finding the most common purchases for each target NAICS industry in the cluster, we can start to see how the local supply chain may be impacted. As Yuma has relatively low representation from the NAICS target industries as discussed previously, in-region and imported purchases are shown on the state (AZ) and national level. Purchases are shown in percentages to give an idea of where Yuma will see the most influx of dollars spent by potential target industries in the region that may be brought in.



Agricultural Advancement

In the Agriculture Advancement industry subgrouping, top purchases for these industries come from the Nitrogenous Fertilizer Manufacturing (apart of subgroup), Natural Gas Distribution, and Fertilizer (Mixing Only) Manufacturing (apart of subgroup). As noted, two of the three NAICS that have the largest percentage of purchases from the industry subgroup are actually a part of the grouping, showcasing a more “inter-connected” supply chain. Chemical and other agriculture related wholesalers also represent a relatively large size of the total purchases for these industries. Arizona purchases mirror those of the United States, with the assumption that any establishment in the subgroup that would be potentially brought into Yuma following a similar spending habit.

NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
325311	Nitrogenous Fertilizer Manufacturing	8%	8%
221210	Natural Gas Distribution	8%	8%
325314	Fertilizer (Mixing Only) Manufacturing	6%	6%
325312	Phosphatic Fertilizer Manufacturing	5%	5%
424690	Other Chemical and Allied Products Merchant Wholesalers	4%	4%
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	3%	3%
424910	Farm Supplies Merchant Wholesalers	3%	3%
424990	Other Miscellaneous Nondurable Goods Merchant Wholesalers	3%	3%
424810	Beer and Ale Merchant Wholesalers	2%	2%
551114	Corporate, Subsidiary, and Regional Managing Offices	2%	2%

Manufacturing and Transportation Progression

For the Manufacturing and Transportation Progression industry subgroup, the highest percentage of purchases for these industries come from the Corporate, Subsidiary, and Regional Managing Offices. Temporary Help Services, as well as Administrative Management and General Management Consulting Services industries also have relatively high percentages of total purchases. Total purchases for the industry groupings mirror closely between Arizona and the nation.



NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
551114	Corporate, Subsidiary, and Regional Managing Offices	6%	6%
561320	Temporary Help Services	6%	5%
541611	Administrative Management and General Management Consulting Services	4%	3%
541330	Engineering Services	3%	3%
561110	Office Administrative Services	3%	2%
325199	All Other Basic Organic Chemical Manufacturing	2%	2%
541990	All Other Professional, Scientific, and Technical Services	2%	2%
488510	Freight Transportation Arrangement	2%	2%
541110	Offices of Lawyers	2%	2%
522110	Commercial Banking	2%	2%

Science, Energy, and Technology

Informed by data, insights about the region, feedback from community stakeholders and vetted by a team of Economic Development and Research/Evaluation experts, the third targeted industry is the *Science, Energy, and Technology* cluster. To best inform the selection of these sectors and subsectors, the team at TPMA used the following list of 5 considerations to inform the framework of this analysis:

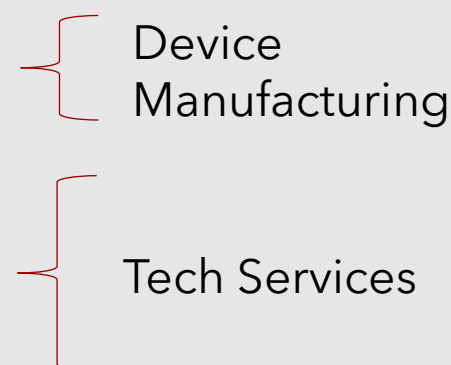
1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?
2. Do the identified industries coincide with established development goals?
3. Do the recommended industries have growth potential and/or a base to diversify?
4. Do the recommended industries address an unmet need/demand from the population?
5. What is the potential impact of the recommended industries on the economy of the region?

The following questions are answered through data and insights in the pages that follow. Additionally, below are specific identified industry North American Industry Classification System (NAICS) codes that form the base for the *Science, Energy, and Technology* cluster. As seen, the cluster is broken into two niche markets, (1) the Device Manufacturing subgroup and (2) the Tech Services subgroup.



INDUSTRY NAICS CODES

<u>6-Digit Code</u>	<u>Industry Description</u>
334413	Semiconductor and Related Device Manufacturing
518210	Data Processing, Hosting, and Related Services
541511	Customer Computer Programming Services
541512	Computer Systems Design Services
541690	Other Scientific and Technical Consulting Services



NAICS Overview

The *Science, Energy, and Technology* cluster highlights a series of next-generation opportunities that could serve as a foundation for an expanded high-tech business sector in the Yuma region. The first suggested Device Manufacturing subgroup, comprised of the Semiconductor and Related Device Manufacturing industry, is from the high-tech, high-wage energy manufacturing family of industries and would represent a brand-new industry for Yuma County. The other subgroup, Tech Services, are from the NAICS 51 (Information) and NAICS 54 (Professional, Scientific, and Technical Services) industry families, already have a small foothold in the region that can be further cultivated; strengthening and expanding the region’s standing as a growing high-tech hub.

Employment and Growth

NAICS	Industry	2021 Yuma County Jobs	2021 Arizona Jobs	Projected Growth through 2030
334413	Semiconductor and Related Device Manufacturing	N/A	20,691	9.9%
518210	Data Processing, Hosting, and Related Services	12	11,252	20.9%
541511	Custom Computer Programming Services	302	17,873	24.7%
541512	Computer Systems Design Services	110	19,933	39.8%
541690	Other Scientific and Technical Consulting Services	16	3,603	39.2%

Earnings

NAICS	Industry	2021 Yuma County Avg. Wages	2021 Arizona Avg. Wages
334413	Semiconductor and Related Device Manufacturing	N/A	\$171,224
518210	Data Processing, Hosting, and Related Services	\$87,133	\$127,524
541511	Custom Computer Programming Services	\$184,789	\$123,088
541512	Computer Systems Design Services	\$64,441	\$125,218
541690	Other Scientific and Technical Consulting Services	\$52,797	\$82,491

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?

To best define the region's advantages/unique assets, the team at TPMA took a 2-pronged approach, relying on 1) insight from community members, gathered through a series of focus groups/interviews and 2) data-informed metrics that considered the region's current industry mix/output/gaps, the skills needed in the industry, and the region's existing workforce.

With regard to the *Science, Energy, and Technology* cluster of industries we have identified, there were four primary factors identified by focus groups/interviewees as relevant assets:

1. The Region's Strong Workforce/Education/Employer Partnerships- We have discussed the nexus in greater detail in separate cluster profile, but it is worth mentioning again. The TPMA team was particularly impressed with both the obvious familiarity workforce and education officials evidenced with each other and the collegial, cooperative attitude they shared. Far too often communities are handcuffed by silos, and a lack of collaboration with employers leads to a mismatch between the skills they need, and the training offered by education providers. In Yuma, educators and workforce professionals have a strong track record of listening to employers and developing targeted trainings that meet their needs.

2. The Yuma Multiversity- is a direct asset to the *Science, Energy, and Technology* cluster as the new facility will be a collaborative organization, bridging higher education, industry, and prospective talent together. The intentional collaboration of these sectors will provide the means to achieve the skilled careers of today and the future that are required by many occupations that fill this cluster. Additionally, the Multiversity will provide much needed skill training for the current workforce in order for this population to access the high-wage opportunities offered by new businesses.





3. Cross-Border Collaboration, access to an International Pool of Talent- not only is Yuma's proximity to the Southern border a major asset when promoting transportation and distribution networks, but the work between Mexican and US workforce officials ensures it is an asset for talent recruitment as well. With 2 major Mexican universities within a 2-hour drive of Yuma, the region already enjoys an informal recruiting network that led to significant workforce attraction of international graduates, especially in the engineering/architecture fields. In January of 2022, the Arizona Department of Employment, in collaboration with their counterparts in Mexico, integrated the state-sponsored job banks and posting boards, to promote opportunities in the United States directly to the regional population of Mexico at large. Though still in its early stages, this evolution and intentional cross-border collaboration has the potential to turbo-charge the influx of talent from Mexico.

4. A Collaborative Economic Development Team, committed to building existing industries- The intentional nature of economic development in the region-and the commitment of officials to not only attract new industries but strengthen the existing industry base- are key advantages that informed this cluster of industries. While one of them- "Semiconductor and Related Manufacturing" would be a new addition to the region, the remaining recommendations have a tentative foothold in the region already. Expanding these industries to meet the massive demand for their services in the Yuma region (and beyond) would strengthen the sector and set the stage for future evolutions up the technology ladder.

Skills Match

The staffing patterns below indicate the occupational makeup of the industry NAICS in the *Science, Energy, and Technology* cluster. Data is derived on the county level from Emsi-Burning Glass, with identified skills for each occupation coming from job listings for each occupation in the region. NAICS were combined based on comparability of industry, with percentage of total jobs in industry group listed, total employment in Yuma for each occupation, typical entry level education, median hourly earnings, and skills needed for each occupation. Overall, jobs in this cluster typically require higher levels of education, with college degrees prevalent. Skills including programming, computer science, and engineering among several others are commonly listed in job postings.

With the *Science, Energy, and Technology* cluster supplying occupations that are typically higher-skilled, educated positions, many of the jobs pay above median hourly earnings. That said, in order for the current workforce to gain some of the critical skills needed to fill the occupations that make up the cluster, the workforce and educational entities around Yuma should collaborate on what skill building courses, curriculum, and programs can, should, and are currently be offered. Gaging demand might be needed for certain skills based on new employment and businesses attracted to the region. In particular, an inventory of all training programs related to programming, computer science, and engineering would be beneficial for recruitment.

Device Manufacturing

The top five occupations that most commonly fill the Device Manufacturing industry subgroup are shown below. Typically, these occupations require a least a bachelor's degree or at least a high-school diploma with many advanced skills. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column, including programming, mechanical assembly, manufacturing, and engineering. The high level of required education and skills for each of the occupation leads to well above average median hourly earnings. The Semiconductor Processing Technicians occupation make up the largest percentages of jobs in this industry subgrouping.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
51-9141	Semiconductor Processing Technicians	14.0%	High school diploma or equivalent	2,891	\$30.24	<ul style="list-style-type: none"> - Medical Records - Electronic Medical Record - Semiconductors
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	9.5%	High school diploma or equivalent	1,960	\$17.67	<ul style="list-style-type: none"> - Hand Tools - Soldering - Mechanical Assembly
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	5.1%	Bachelor's degree	1,064	\$48.52	<ul style="list-style-type: none"> - Agile Methodology - Java (Programming) - Computer Science

Continue to Next Page

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
17-2072	Electronics Engineers, Except Computer	4.6%	Bachelor's degree	962	\$52.83	<ul style="list-style-type: none"> - Electrical Engineering - Radio Frequency - Simulations
17-2112	Industrial Engineers	4.5%	Bachelor's degree	925	\$46.13	<ul style="list-style-type: none"> - Manu. Process - Lean Manu. - Corrective & Preventative Action

Tech Services

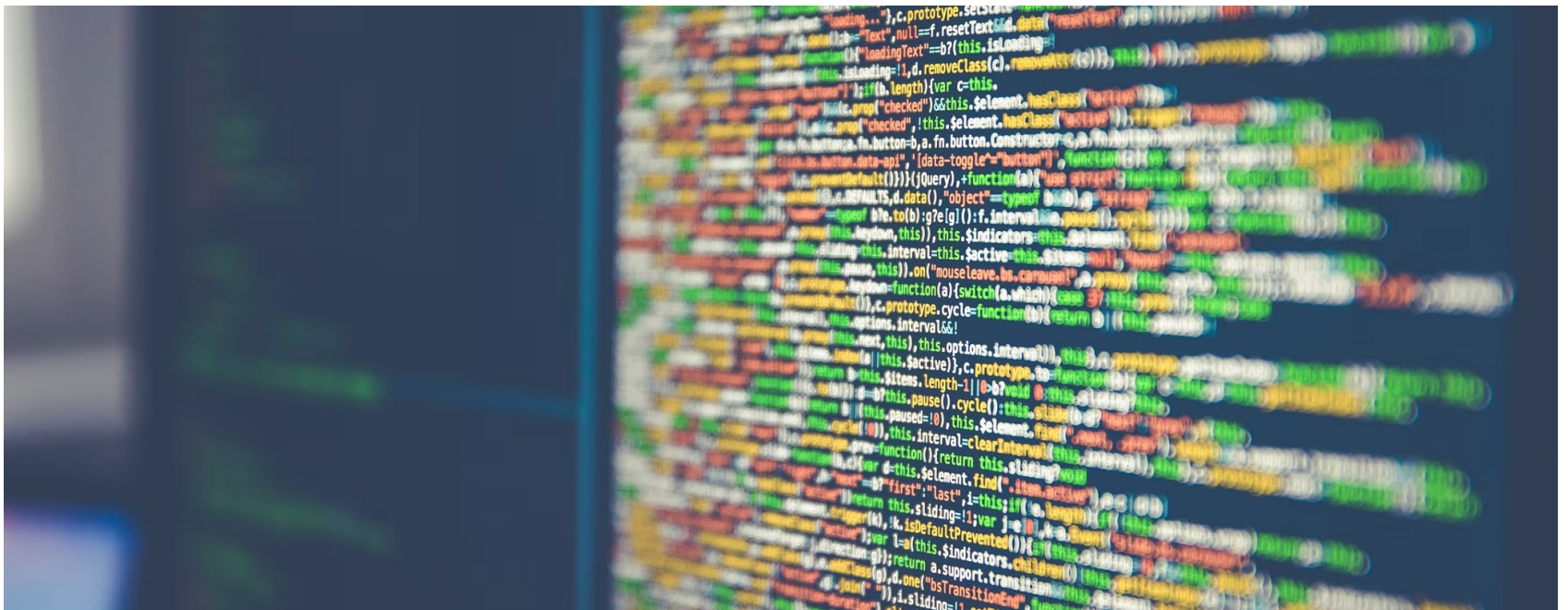
The top five occupations that most commonly fill the Tech Services industry subgroup are shown below. Typically, these occupations require at least a high school diploma, with some requiring a bachelor's degree. Some of the most common skills listed by employers on job postings for these occupations are listed in the furthest right column. That said, several of the occupations offer on-the-job training, allowing employees to build on existing or learn new skills that may be listed. With many related skills to the industry grouping before, programming and manufacturing skills are crucial talent needs in order to fill the *Science, Energy, and Technology* target cluster.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Arizona Employment	Median Hourly Earnings	Top Specialized Skills Needed
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	19.5%	Bachelor's degree	10,343	\$48.52	<ul style="list-style-type: none"> - Agile Methodology - Java (Programming) - Computer Science
15-1232	Computer User Support Specialists	9.0%	Some college, no degree	4,742	\$23.06	<ul style="list-style-type: none"> - Technical Support - Help Desk Support - Operating Systems
15-1211	Computer Systems Analysts	5.9%	Bachelor's degree	3,132	\$42.62	<ul style="list-style-type: none"> - Java (Programming) - Computer Science - Business Requirements
43-4051	Customer Service Representatives	4.7%	High school diploma or equivalent	2,464	\$16.90	<ul style="list-style-type: none"> - Call Center Experience - Inbound Calls - Customer Inquiries
11-3021	Computer and Information Systems Managers	4.3%	Bachelor's degree	2,256	\$66.96	<ul style="list-style-type: none"> - Computer Science - Agile Methodology - Strategic Planning

2. Do the identified industries coincide with established development goals?

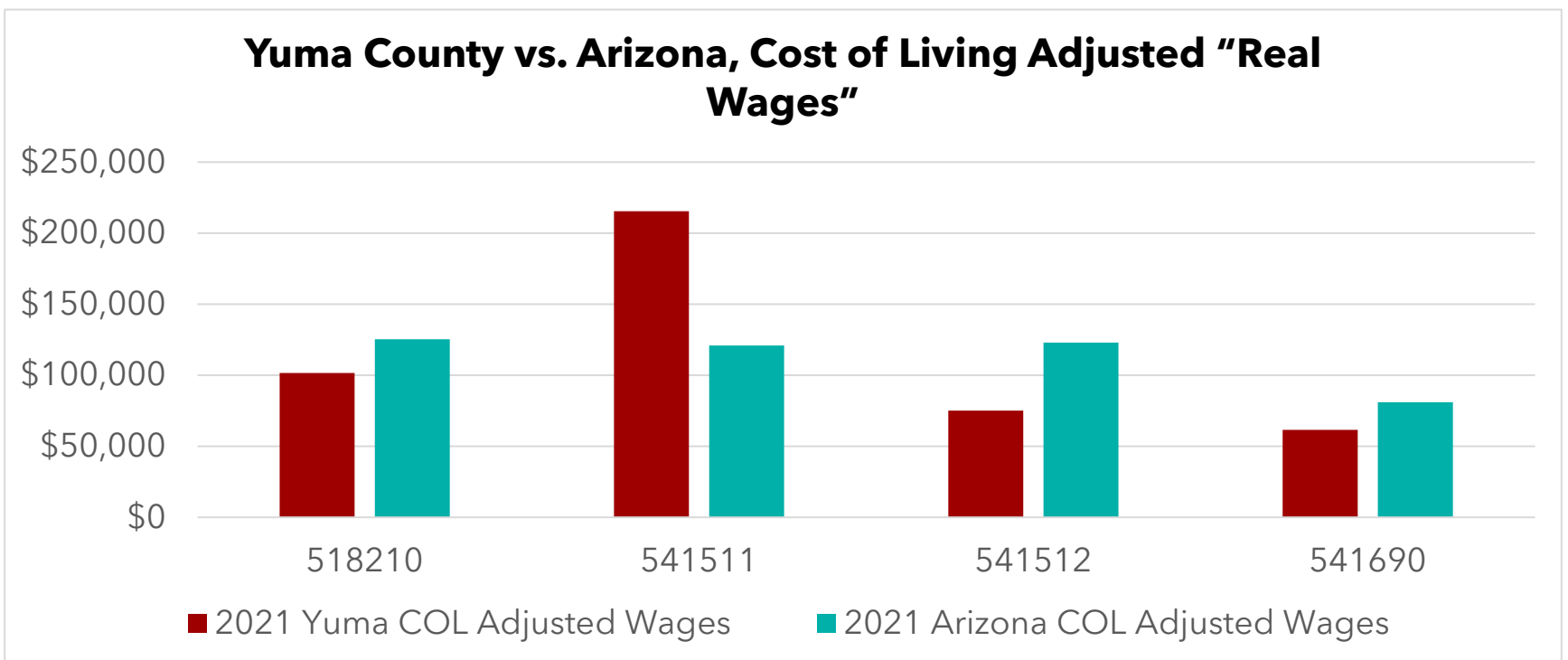
The *Science, Energy, and Technology* cluster of industries addresses several key goals of the Yuma team. Specifically:

- a) A desire to see the region further ascend the technology ladder, in both manufacturing opportunities and digital/support industries. As the data we have pulled above highlights, the region is on the cusp of having the technologically proficient workforce necessary for the manufacturing jobs of the future. Linking new, high-paying opportunities to the Multiversity, for example, is an excellent way to ensure the residents of Yuma grow their skills in concert with further industry diversification
- b) The need to intentionally target high-growth sectors. While almost all of our industry recommendations across each of the clusters are, according to models from EMSI/Burning Glass, poised to grow over the next decade, the subsectors identified in this *Science, Energy, and Technology* cluster will set the pace for 2030- with 4 out of the 5 suggested industries poised to expand employment by 20% or more.
- c) A commitment to a large agricultural workforce, comprised of a significant subset of individuals who may be willing and able to upskill and transition into higher-paying manufacturing or technical jobs. In conversations with elected officials and workforce professionals alike, the team heard reference to the potential of this workforce to drive the expansion of “high-tech” opportunities in Yuma. With established On-The-Job (OJT) and credentialing opportunities through the local workforce system, a pipeline of potential technical talent has already been opened in the region. Adding more opportunities from more employers can only help to bring in other individuals, looking for a chance to broaden their skills and improve the financial standing of their families.



3. Do the recommended industries have growth potential and/or a base to diversify?

All five of the prospective industries in the *Science, Energy, and Technology* cluster are poised for double-digit growth in employment through 2030- with the “Computer Systems Design” and “Other Scientific and Consulting” sub-sectors projected to expand by nearly 40%. Interestingly, the average wages for the industries that already have a presence in Yuma County are markedly lower than their counterparts in the rest of the state, presenting a potential opportunity to market the region to employers looking to save on labor costs. Factoring the cost of living in Yuma County vis-à-vis the state of Arizona further highlights the affordability of the region- and closes the “real wage” gap between the two. The chart and table below illustrate the reduced spread in wages when one considers a) how much further a dollar goes in Yuma and b) the high cost of living in other areas of the state, driving down the real value of higher salaries elsewhere.

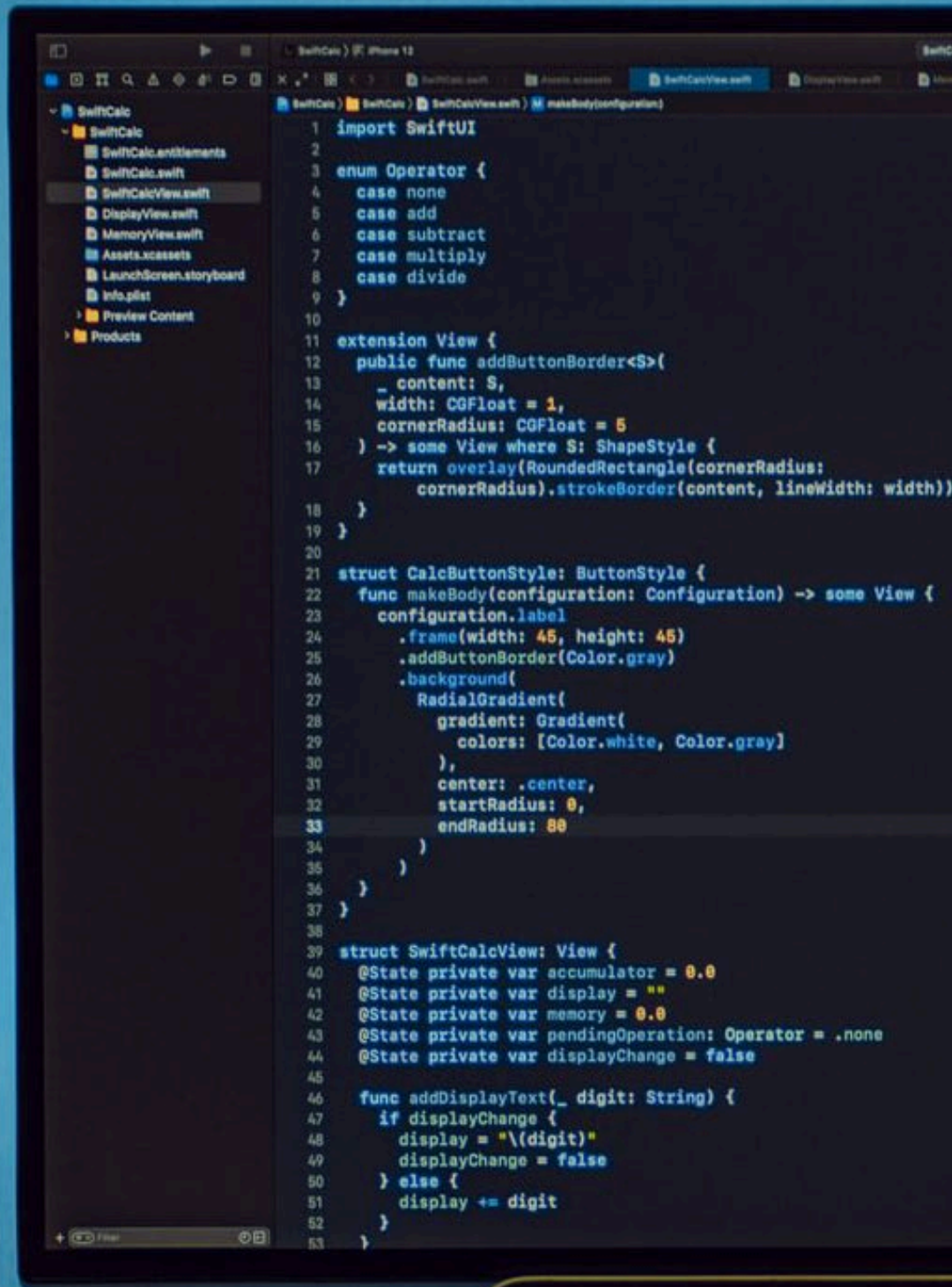


NAICS	Industry	2021 Yuma Actual Wages	2021 Yuma COL Adjusted Wages	2021 Arizona COL Adjusted Wages	2021 Arizona Actual Wages
518210	Data Processing, Hosting, and Related Services	\$87,133	\$101,554	\$125,269	\$127,524
541511	Custom Computer Programming Services	\$184,789	\$215,372	\$120,912	\$123,088
541512	Computer Systems Design Services	\$64,441	\$75,106	\$123,004	\$125,218
541690	Other Scientific and Technical Consulting Services	\$52,797	\$61,534	\$81,032	\$82,491

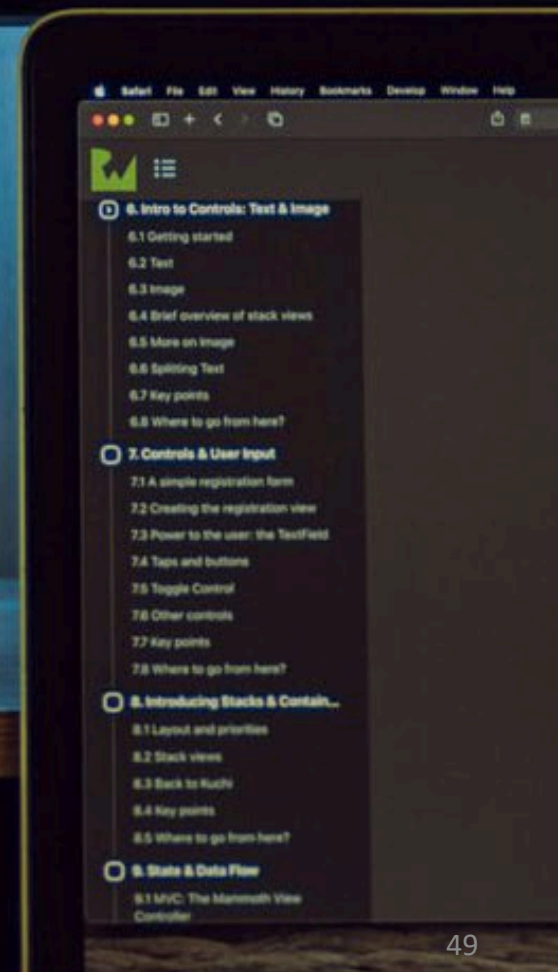
While certainly similar scenarios could be run for every suggested industry in this fuller study, the impact across these four industries is particularly striking. In each scenario, the cost of living in Yuma is a multiplier for the wages earned- while in the rest of the state, the cost of living actually shrinks take-home pay.

For employees in the "Custom Computer Programming Services" (541511) field, the non-COLA average salary in Yuma exceeds the state-wide non-COLA average by just over \$60,000. When the favorable cost of living in Yuma is factored in and COL adjusted totals are used, the gap between Yuma and the rest of the state, in terms of average employee salary in the field, is an astounding \$94k.

Clearly, the need for employees in Yuma for this industry, coupled with acute demand for the services they provide, has pushed employee compensation in a direction that counters the overall trends for Yuma vis-à-vis the rest of the state across most other industry sectors. As seen earlier in this section in regard to a skills match between Yuma and this cluster analysis, it worth noting up front, that a careful training, upskilling, and credentialing plan will need to be in place to meet the acute demand for workers in this industry.



```
1 import SwiftUI
2
3 enum Operator {
4     case none
5     case add
6     case subtract
7     case multiply
8     case divide
9 }
10
11 extension View {
12     public func addButtonBorder<S>(<
13         _ content: S,
14         width: CGFloat = 1,
15         cornerRadius: CGFloat = 5
16     ) -> some View where S: ShapeStyle {
17         return overlay(RoundedRectangle(cornerRadius:
18             cornerRadius).strokeBorder(content, lineWidth: width))
19     }
20 }
21
22 struct CalcButtonStyle: ButtonStyle {
23     func makeBody(configuration: Configuration) -> some View {
24         configuration.label
25         .frame(width: 45, height: 45)
26         .addButtonBorder(Color.gray)
27         .background(
28             RadialGradient(
29                 gradient: Gradient(
30                     colors: [Color.white, Color.gray]
31                 ),
32                 center: .center,
33                 startRadius: 0,
34                 endRadius: 80
35             )
36         )
37     }
38 }
39
40 struct SwiftCalcView: View {
41     @State private var accumulator = 0.0
42     @State private var display = ""
43     @State private var memory = 0.0
44     @State private var pendingOperation: Operator = .none
45     @State private var displayChange = false
46
47     func addDisplayText(_ digit: String) {
48         if displayChange {
49             display = "\\(digit)"
50             displayChange = false
51         } else {
52             display += digit
53         }
54     }
55 }
```



6. Intro to Controls: Text & Image
6.1 Getting started
6.2 Text
6.3 Image
6.4 Brief overview of stack views
6.5 More on image
6.6 Splitting Text
6.7 Key points
6.8 Where to go from here?
7. Controls & User Input
7.1 A simple registration form
7.2 Creating the registration view
7.3 Power to the user: the TextField
7.4 Taps and buttons
7.5 Toggle Control
7.6 Other controls
7.7 Key points
7.8 Where to go from here?
8. Introducing Stacks & Contain...
8.1 Layout and priorities
8.2 Stack views
8.3 Back to SwiftUI
8.4 Key points
8.5 Where to go from here?
9. State & Data Flow
9.1 MVC: The Mammoth View Controller

4. Do the recommended industries address an unmet need/demand from the population?

To quantify the demand for the industry services in the region, we drew on industry spending estimates for the year of 2021, based on data from the US Bureau of Economic Analysis. Between dollars spent in region (Yuma) and dollars spent out of region (anywhere else), the specific NAICS industries listed spent more than \$13M on Device Manufacturing (334413 Code), and more than \$361M on Tech Services (518 & 541 Codes). Unfortunately, the vast majority of those dollars went to out of region businesses, as highlighted in the table below. In fact, in-region demand met for our Device Manufacturing industry is near 1%. This means while there is a large demand of goods and services for this sector, a majority of the products needed for these industries are being bought elsewhere. Additionally, while the Customer Computer Programming Services industry has more balanced in-region vs. out-region purchases, the remaining Tech Services industries favor heavily towards out-region spending.

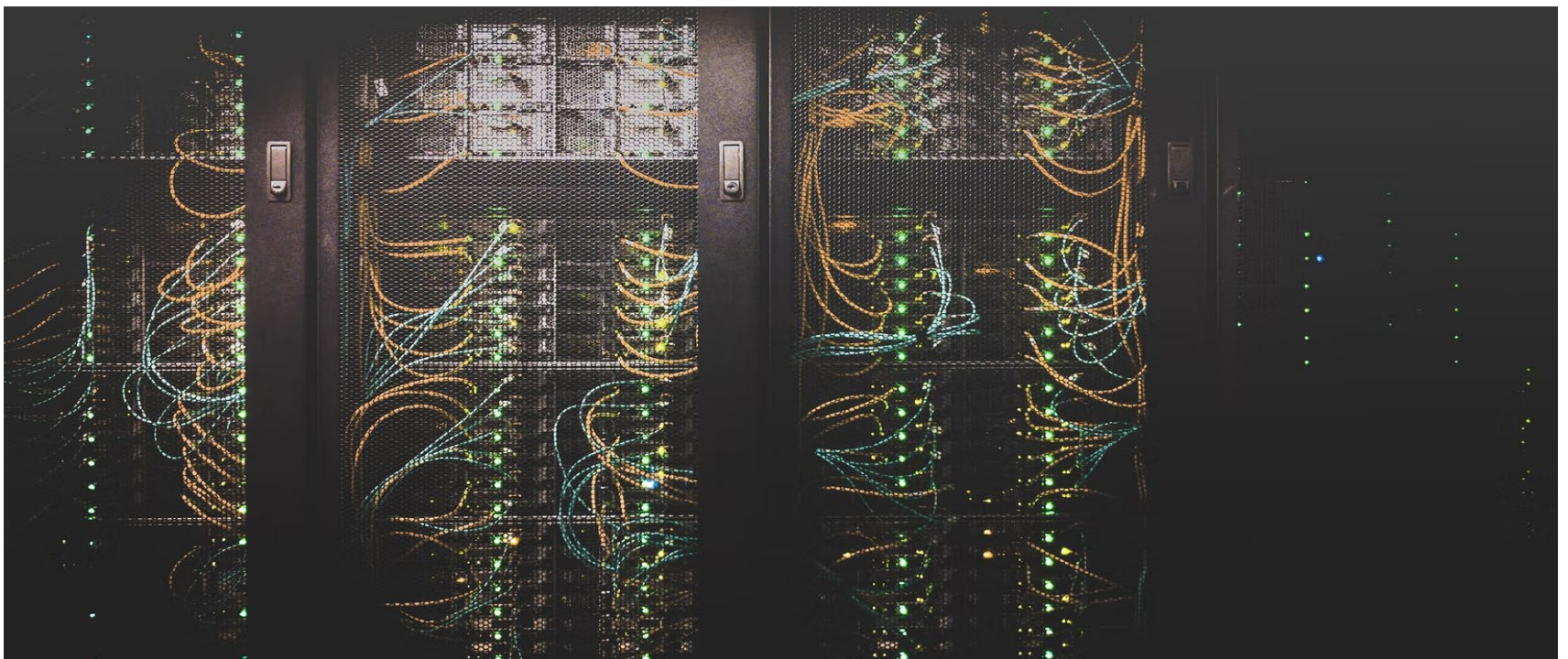
NAICS	Industry	2021 In-Region Demand Met	In-Region Demand Spending	Out-Region Demand Spending	2%, Out-Region Market Share	5%, Out-Region Market Share
334413	Semiconductor and Related Device Manufacturing	1.2%	\$166,122	\$13,188,609	\$263,772	\$659,430
518210	Data Processing, Hosting, and Related Services	2.5%	\$3,245,066	\$125,339,645	\$2,506,793	\$6,266,982
541511	Custom Computer Programming Services	44.8%	\$48,018,267	\$59,053,307	\$1,181,066	\$2,952,665
541512	Computer Systems Design Services	4.7%	\$5,276,701	\$107,816,290	\$2,156,326	\$5,390,815
541690	Other Scientific and Technical Consulting Services	7.5%	\$930,733	\$11,515,043	\$230,301	\$575,752

While a full list of the row labels/value descriptions **appears below** for consideration, the table previously shown on the last page illustrates two key takeaways:

1. Overall, the demand of Yuma's Device Manufacturing industry (selected in this report) are being met outside the region, specifically in this case for Semiconductors and Related Devices. While Yuma could not possibly provide all the products and services needed for this subgroup (these establishments are typically hundreds of employees and in turn need large amounts of materials), total demand (in dollars) for these industries totals near \$13M, a significant number of dollars for one industry alone.
2. The market potential to increase Tech Services related to computer programming in Yuma is considerable. The last 2 rows highlight the dollar value of capturing a mere 2 or 5 percent of all the out-of-region sales, respectively. With Yuma having such a high demand for these products thanks to its competitive assets, producing just a small portion of the needed products could produce millions of dollars for in-region purchases.

Description of Row Labels

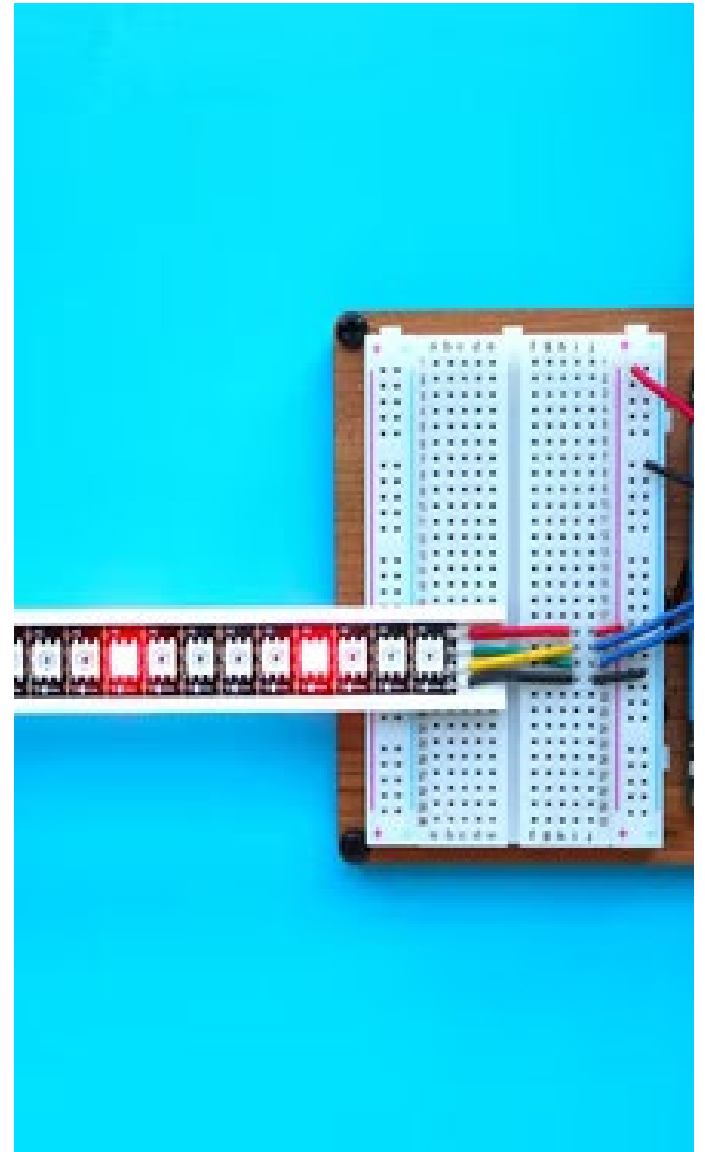
- **2021 In-Region Demand Met:** The percentage of all spending by Arizona citizens and Arizona-based industries within the region on the goods and services offered by the respective industry subsector.
- **In-Region Demand Spending:** Dollar value of all sales and services to in-region consumers, by in-region establishments
- **Out-Region Demand Spending:** Dollar value of all sales and services to in-region consumers, by out-of-region establishments
- **2%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 2% of the total out-region spending by consumers
- **5%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 5% of the total out-region spending by consumers



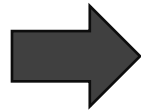
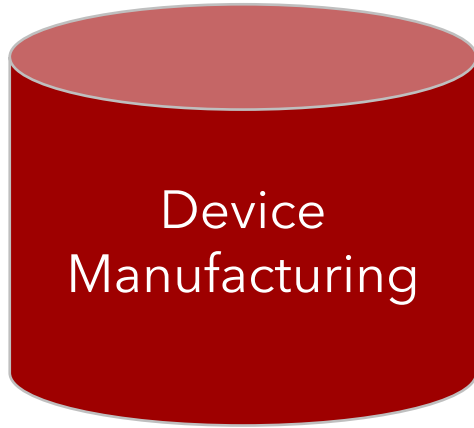
5. What is the potential impact of the recommended industries on the economy of the region?

A forecast including changes in earnings, jobs, and taxes on production and imports (TPI) is included to highlight the economic impact of attracting new businesses in the *Science, Energy, and Technology* target cluster on the Yuma regional economy. In the Device Manufacturing subgroup model, the addition of one (1) mid/large-sized semiconductor manufacturer (150 jobs) are calculated. Additionally, for the Tech Services subgroup, one (1) small-scaled data processing business, one (1) small-scaled computer programming business, two (2) small-scaled Computer System Design service business, and one (1) Tech/Science consulting firm are calculated. While seemingly many businesses, as noted, each of the establishments added under the Tech Services subgroup are small-scaled, ranging from 5 to 7 employees. The model helps showcase the impacts of adding a business to the region in one of the target NAICS. Total jobs added in the region are based off of the average employees per establishment in the state of Arizona for each of the industries. The columns highlighted in green in the table show both how many new establishments (businesses) have entered into the region as well as the corresponding jobs. . For more information on the input/output model calculation methodology, please see [here](#). Below are definitions of each of the categories in the impact model:

- Initial Change: Shows the change in earnings for the industry employer, and the number of new jobs created. For these examples, we set the new jobs at 190.
- Direct Change: The impact these 190 new jobs will have on the supply-chain, other employers, also in terms of additional earnings and jobs created. In the Device Manufacturing example, adding 150 new jobs in the initial phase is projected to generate the creation of 4 new supply chain positions.
- Indirect Change: Highlights a further ripple effect of the initial 190 jobs, stated more awkwardly, this shows the change in revenue and employment for the “supply chain’s, supply chain”.
- Induced Change: Shows the change brought about by the earnings of employees as they spend in them in the community, the investments they make, and the subsequent government created to manage the direct, indirect, and initial changes in earnings. The final column highlights the net impact of all the change waves on local, state, and federal taxes received.

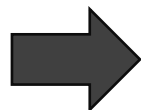
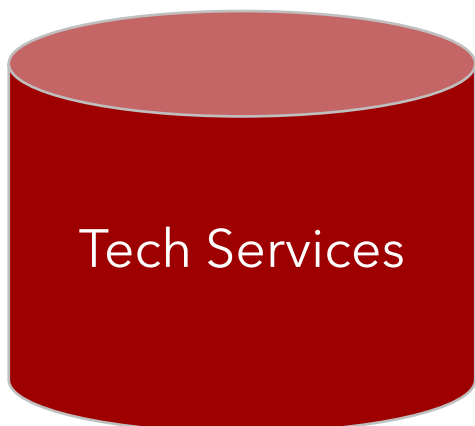


NAICS	Industry	2021 Yuma Est.	Average Est. Size, Yuma	2021 Arizona Est.	Average Est. Size, Arizona	"Potential" Yuma Est.	Job Increase
334413	Semiconductor and Related Device Manufacturing	N/A	N/A	97	213	1	150



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$11.1M	150	-
Direct	\$157K	4	-
Indirect	\$25K	1	-
Induced	\$2.3M	51	-
Local	-	-	\$336K
State	-	-	\$334K
Federal	-	-	\$357K

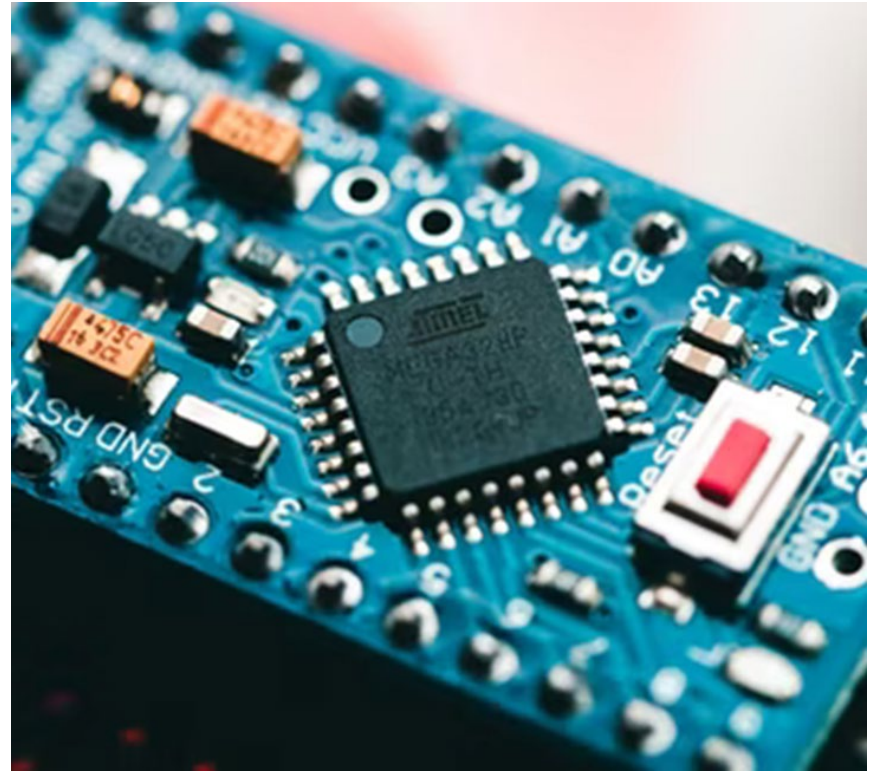
NAICS	Industry	2021 Yuma Est.	Average Est. Size, Yuma	2021 Arizona Est.	Average Est. Size, Arizona	"Potential" Yuma Est.	Job Increase
518210	Data Processing, Hosting, and Related Services	2	6	787	14	1	5
541511	Custom Computer Programming Services	11	28	3508	5	1	15
541512	Computer Systems Design Services	20	6	2737	7	2	15
541690	Other Scientific and Technical Consulting Services	6	3	661	5	1	5



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$3.2M	40	-
Direct	\$167K	4	-
Indirect	\$24K	1	-
Induced	\$528M	12	-
Local	-	-	\$64K
State	-	-	\$55K
Federal	-	-	\$35K

Industry Demand Table

The addition of new businesses in the *Science, Energy, and Technology* cluster will not only benefit each sectors growth, but others around it. By finding the most common purchases for each target NAICS industry in the cluster, we can start to see how the local supply chain may be impacted. For consistency purposes, in-region and imported purchases are shown on the state (AZ) and national level. Purchases are shown in percentages to give an idea of where Yuma will see the most influx of dollars spent by potential target industries in the region that may be brought in.



Device Manufacturing

In the Device Manufacturing industry subgrouping, top purchases for these industries come from the Corporate, Subsidiary, and Regional Managing Offices, as well as the Offices of Lawyers, and Semiconductor and Related Device Manufacturing industries. In Arizona, on average, 30%, 6%, and 5% of all spending for the Device Manufacturing industry subgroupings go towards these industries. That said, Yuma has a relatively low supply of jobs in the Corporate, Subsidiary, and Regional Managing Offices industry, with only 2 employers in the region posting for jobs in the past 12 months. As the Device Manufacturing industry grouping is made of the 334413 NAICS which typically has large employment establishments, this industry would be in high demand for purchases with the presence of a new employer in this grouping.

NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
551114	Corporate, Subsidiary, and Regional Managing Offices	30%	30%
541110	Offices of Lawyers	6%	6%
334413	Semiconductor and Related Device Manufacturing	5%	5%
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	3%	3%
561320	Temporary Help Services	3%	3%
493110	General Warehousing and Storage	2%	2%
541611	Administrative Management and General Management Consulting Services	2%	2%
325180	Other Basic Inorganic Chemical Manufacturing	2%	2%
531110	Lessors of Residential Buildings and Dwellings	2%	2%
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	2%	2%

Tech Services

For the Tech Services industry subgrouping, the highest percentage of purchases for these industries come from the Temporary Help Services and Office Administrative Services. Again, as seen with the previous industry grouping, the Corporate, Subsidiary, and Regional Managing Offices industry also has high percentages of total purchases. Total purchases for the industry groupings align very closely between Arizona and the nation. The many overlapping industries present in the list below and the list for the previous industry subgrouping show that if potential companies were brought in for *Science, Energy, and Technology* cluster, these companies would rely on many of the same industries for purchases which could have a multiplier effect in the supply chain.



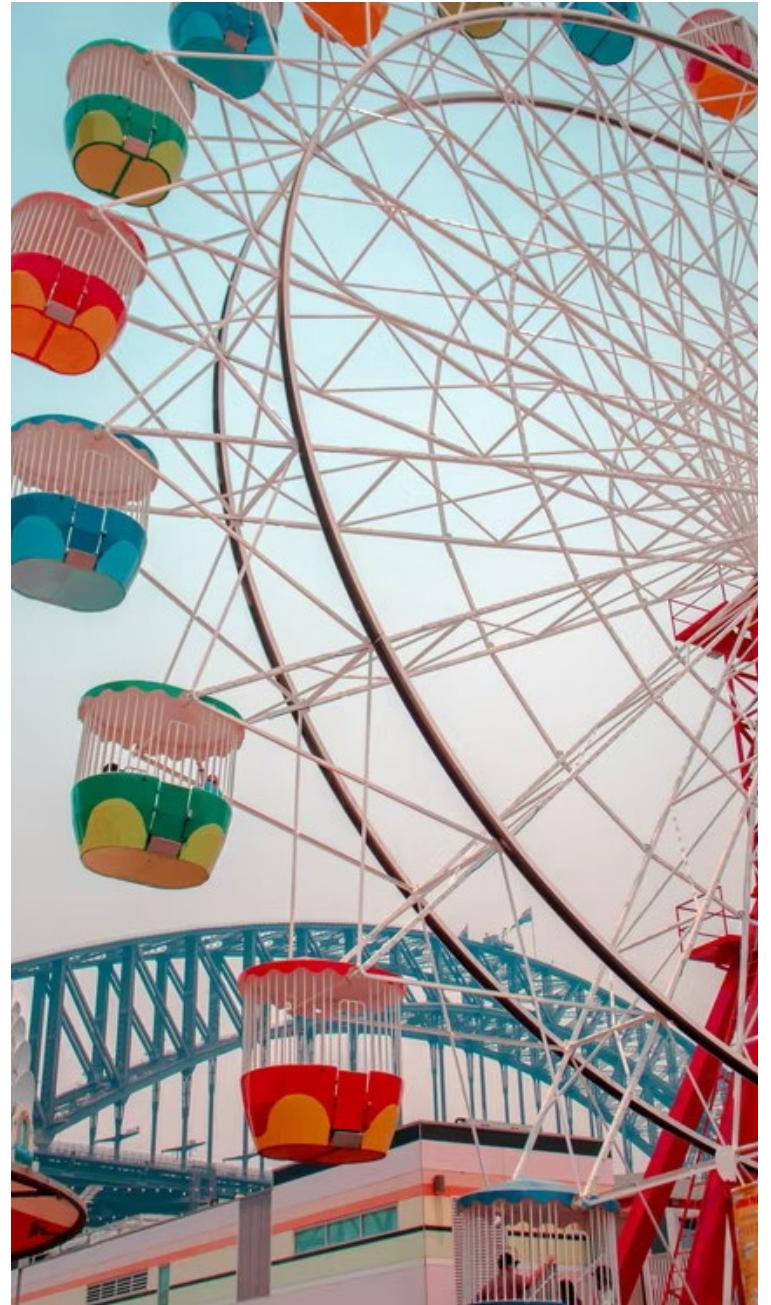
NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
561320	Temporary Help Services	12%	12%
561110	Office Administrative Services	5%	5%
551114	Corporate, Subsidiary, and Regional Managing Offices	4%	5%
541611	Administrative Management and General Management Consulting Services	4%	4%
533110	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	3%	3%
541110	Offices of Lawyers	3%	3%
561330	Professional Employer Organizations	2%	2%
541512	Computer Systems Design Services	2%	2%
522110	Commercial Banking	2%	2%
519130	Internet Publishing and Broadcasting and Web Search Portals	2%	2%

Entertainment

Informed by data, insights about the region, feedback from community stakeholders and vetted by a team of Economic Development and Research/Evaluation experts, the fourth target industry is the *Entertainment* cluster for the greater Yuma region. The *Entertainment* cluster is broken into two niche markets: (1) Recreation (2) Amusement. To best inform the selection of these sectors and subsectors, the team at TPMA kept the following list of four considerations at the forefront throughout the process:

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?
2. Do the identified industries coincide with established development goals?
3. Do the recommended industries have growth potential and/or a base to diversify?
4. Do the recommended industries address an unmet need/demand from the population?
5. What is the potential impact of the recommended industries on the economy of the region?

The following questions are answered through data and insights in the pages that follow. Additionally, below are specific identified industry North American Industry Classification System (NAICS) codes that form the base for the *Entertainment* cluster.



INDUSTRY NAICS CODES

<u>6-Digit Code</u>	<u>Industry Description</u>	
312120	Breweries	} Recreation
312140	Distilleries	
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	} Amusement
713110	Amusement and Theme Parks	

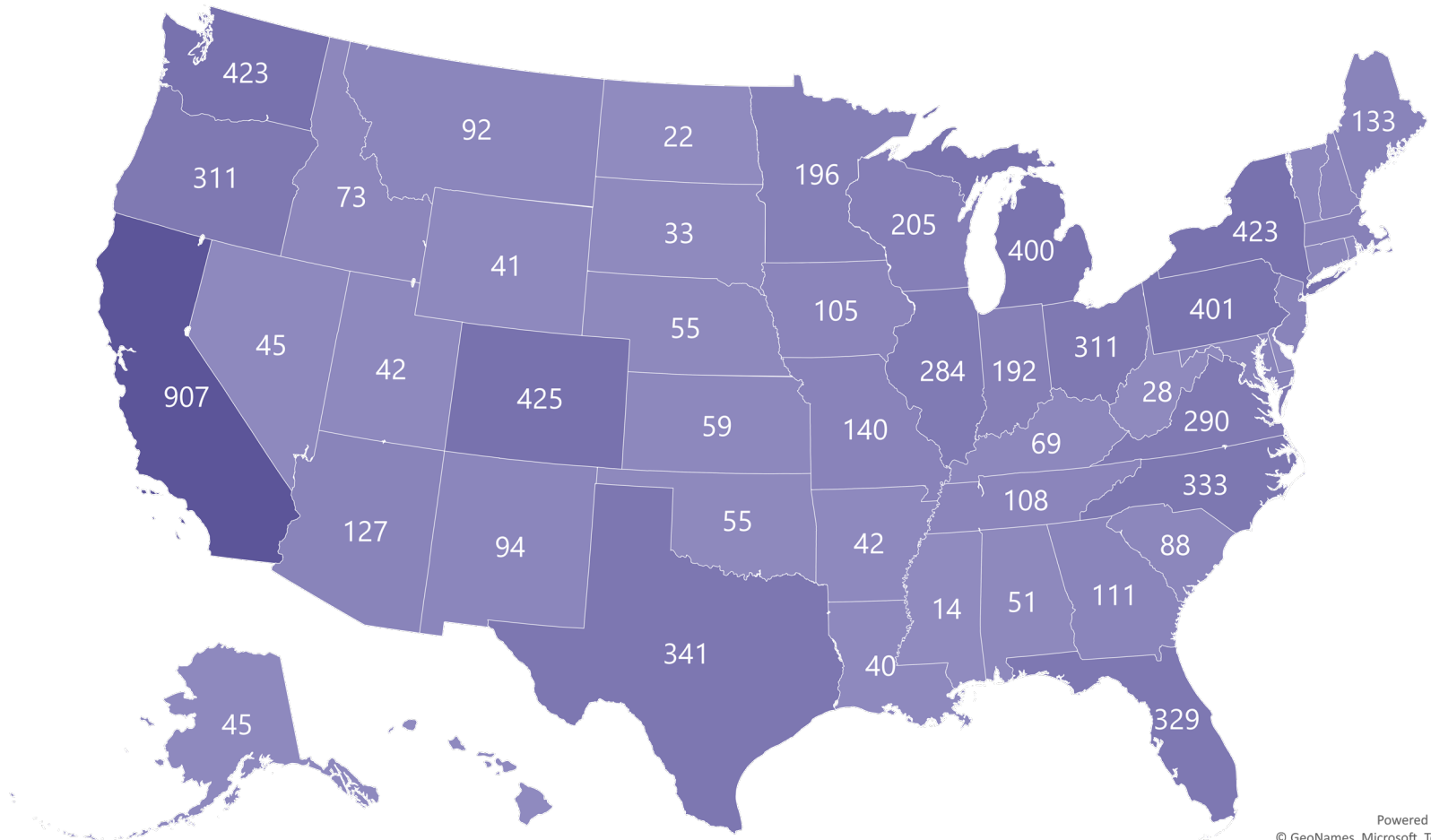
NAICS Overview

While these industries may be small contributors to local employment- as the average employment by establishment size shows in the table below- they can make a big contribution to the quality of life for the region, adding to the vibrancy that is so enticing for citizens and prospective employers alike.

NAICS	Industry	Average Earnings per Job, 2021	Arizona Establishments, 2021	Average Employees per Establishment
312120	Breweries	\$47,030	50	13
312140	Distilleries	\$57,398	9	3
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	\$32,021	84	15
713110	Amusement and Theme Parks	\$20,900	25	28

As shown in the map below, the number of breweries by state differs widely based on location and population. The recent increase in “microbreweries” has been a success for smaller scaled downtowns that fit Yuma’s profile.

Number of Breweries by State



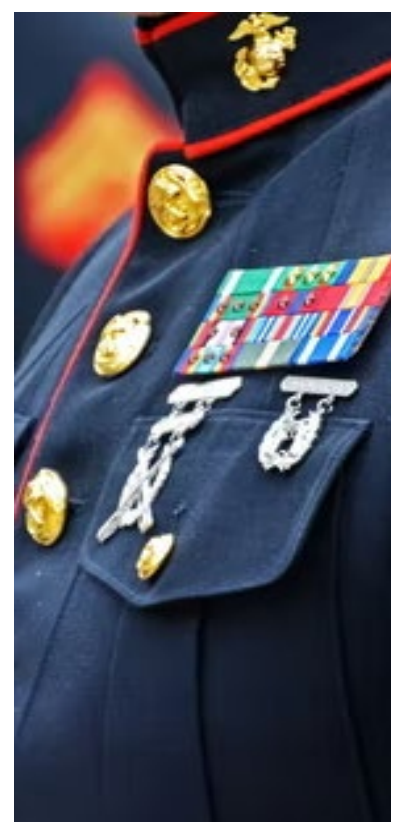
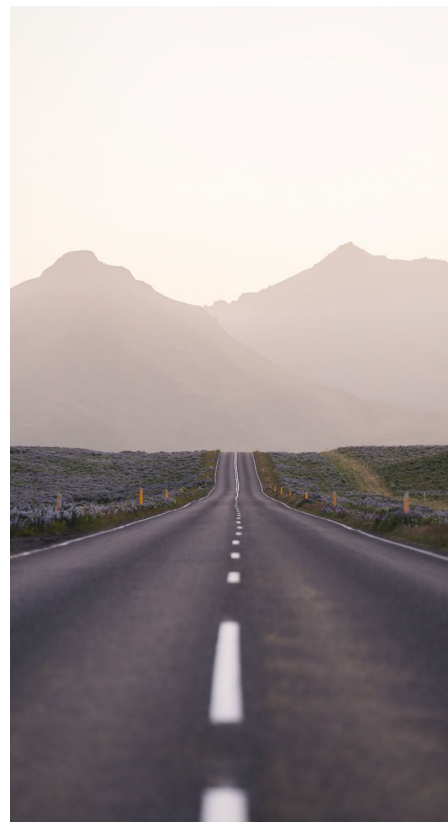
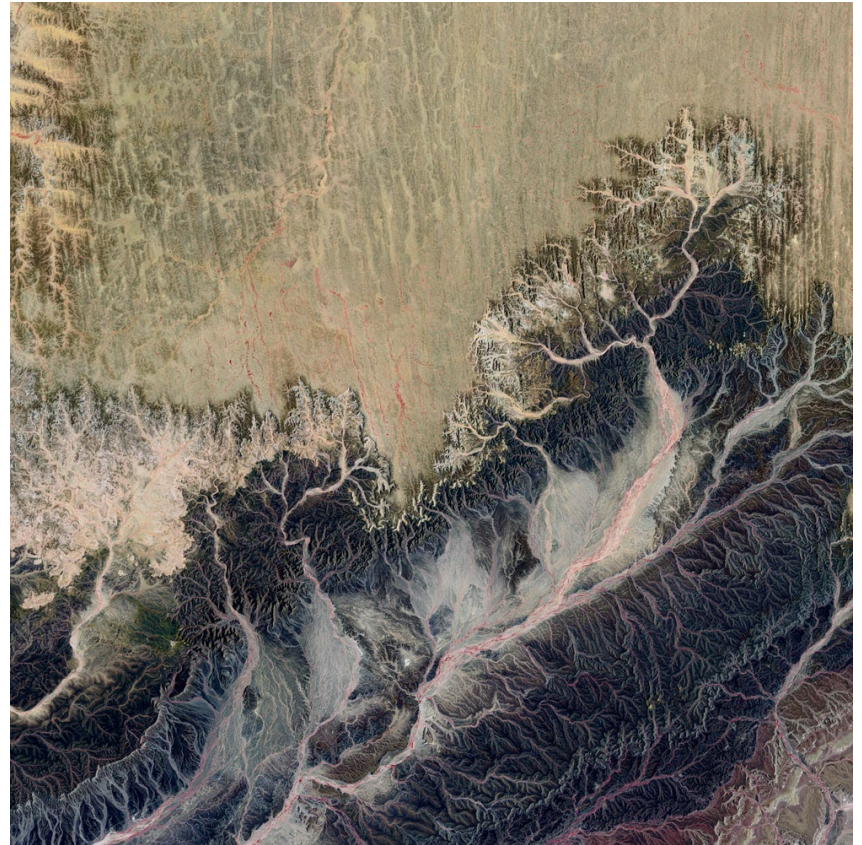
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1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?

To best define the region's advantages/unique assets, the team at TPMA took a 2-pronged approach, relying on 1) insight from community members, gathered through a series of focus groups/interviews and 2) data-informed metrics that considered the region's current industry mix/output/gaps, the skills needed in the industry, and the region's existing workforce.

With regard to the *Entertainment* cluster of industries we have identified, there were 3 primary factors identified by focus groups/interviewees as relevant assets:

- 1. The region's supply of water.** Through conversations with elected officials, ED professionals, and vested citizens of the region, there was almost universal consent that the region holds a great advantage with its senior water rights to the Colorado River. This advantage brings the ability to house new industries that rely on water consumption compared to nearby cities that do not have this luxury
- 2. The population, specifically "Snow Birds" from Canada, military families, and full-time residents** looking for entertainment options. Again, focus groups conducted in support of this research consistently identified a need for more entertainment options in Yuma, not only to attract new visitors/tourists, but to improve the overall quality of life for the region and attract new, permanent community members.
- 3. Ease of Access to Transportation network,** a recurring theme throughout these profiles, is a significant asset for the region. With Interstate 8 running through Yuma and ready access to the southern border, distillers/breweries looking to expand distribution beyond the city are well positioned to do so. Add in enhanced storage and distribution opportunities (highlighted in a separate cluster report) and the region is at a serious competitive advantage to attract these businesses. Entertainment venues and attractions also will benefit from easy on/off access from Interstate 8.



Skills Match

In terms of data-informed support for the development of a more robust *Entertainment* cluster, the team considered the match of skills needed in the industries to the region's population. The staffing patterns below indicate the occupational makeup of the industry NAICS in the *Entertainment* cluster. As limited data is available solely for Yuma, data is derived on the state level. NAICS were combined based on comparability of industry, with percentage of total jobs in industry group listed, typical entry level education, work experience, on-the-job training, and skills needed for each occupation (pulled from job postings in Arizona). Overall, jobs in this cluster require low typical entry level education as well as training, and basic skills including merchandising, warehousing, and marketing. That said, with low boundaries to entry for many of the occupations that fill this cluster, the potential to fill jobs with vulnerable populations in the area including opportunity youth, returning citizens, veterans, etc. is a possibility.

Additionally, the cluster supplies occupations that may be low-skilled but provide valuable working experience that can potentially create pathways to new positions. For example, in the Breweries and Distilleries industry group, packagers and fillers positions can lead to new manufacturing opportunities. Beginning sales representative positions have very high compatibility rates with Customer Service Representatives, Insurance Agents, and Sales Representatives for Wholesale Manufacturing, Technical, and Scientific Products, all of which pay significantly higher salaries.

Recreation

The top five occupations that most commonly fill the Recreation subgroup (Breweries (312120) and Distilleries (312140)) in Arizona are shown below. Typically, these occupations require little to no formal education and work experience, while offering short and moderate term on-the-job training. Some of the most common skills needed for occupations that commonly fill these industries include active listening, monitoring, speaking, and operations monitoring.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Typical Job OTJ Training	Top Specialized Skills Needed
35-3011	Bartenders	9.5%	No formal educational credential	Short-term OTJ training	- Bartending - Restaurant Operation - Cash Handling
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	6.4%	High school diploma or equivalent	Moderate-term OTJ training	- Warehousing - Forklift Truck - Machinery
51-9111	Packaging and Filling Machine Operators and Tenders	6.3%	High school diploma or equivalent	Moderate-term OTJ training	- Warehousing - Manufacturing Practices - Palletizing
41-9011	Demonstrators and Product Promoters	5.3%	No formal educational credential	Short-term OTJ training	- Brand Awareness - Event Marketing - Merchandising
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	5.2%	High school diploma or equivalent	Moderate-term OTJ training	- Selling Techniques - Solar Sales - Customer Relationship Management

Amusement

The top five occupations that most commonly fill the Amusement subgroup (Promoters of Performing Arts, Sports, and Similar Events with Facilities (711310) and Amusement and Theme Parks (713110)) in Arizona are shown below. Typically, these occupations require little to no formal education and work experience, while offering short term on-the-job training. Some of the most common skills needed for occupations that commonly fill these industries include active listening, monitoring, speaking, and operations monitoring.



SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Typical Job OTJ Training	Top Specialized Skills Needed
39-3091	Amusement and Recreation Attendants	10.1%	No formal educational credential	Short-term on-the-job training	- Merchandising - Point of Sale - Safety Training
33-9032	Security Guards	8.6%	High school diploma or equivalent	Short-term on-the-job training	- Emergency Response - Access Controls - CPR
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	6.1%	No formal educational credential	Short-term on-the-job training	- Warehousing - Forklift Truck - Palletizing
39-3031	Ushers, Lobby Attendants, and Ticket Takers	5.2%	No formal educational credential	Short-term on-the-job training	- Greeting Customers - Cash Handling - CPR
35-3023	Fast Food and Counter Workers	3.0%	No formal educational credential	Short-term on-the-job training	- Restaurant Operation - Food Services - Food Safety/Sanitation

2. Do the identified industries coincide with established development goals?

Through conversations with the Yuma team and local stakeholders, there was a substantial amount of overall consensus on the direction industry evolution, or diversification, should take in the region. Although the details and suggestions varied, the general goals coalesced around:

1. *New opportunities should complement, and when possible, strengthen existing businesses and industries in the region*

The *Entertainment* cluster strengthens existing businesses by attracting citizens in Yuma, the surrounding region, and tourist around the country into the city. By adding new entertainment opportunities for adults and tourists, and recreation places for families and friends, people visiting or living in Yuma will be more inclined to stay, spend their money, and support other businesses in the process.

2. *New opportunities should take advantage of a nimble and flexible education/workforce nexus willing to partner with employers to develop education offerings in line with their needs*

While the *Entertainment* cluster is filled by mostly low-skilled jobs, the opportunity for re-entering populations, disconnected youth, and others to gain valuable skills as well as start on a realistic career pathway is prevalent.

3. *New opportunities should enhance quality of life for the community, while preserving the small-town feel that makes Yuma home*

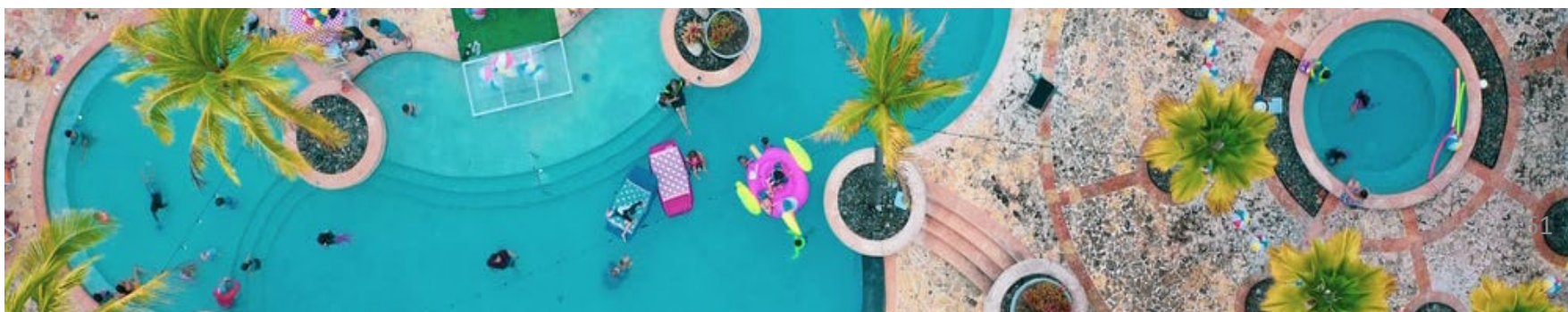
Undoubtedly providing new amenities and attractions to Yuma will enhance the overall quality of life for citizens and those visiting. Additionally small micro-breweries and distilleries, which are increasing rapidly around the US, bring a strong local feel to communities and downtown districts while also promoting the city's downtown core.

4. *New opportunities should capitalize on the intangibles that make Yuma unique- robust transportation system, freshwater surplus, cross-border access, a military community, and the potential arrival of Spaceport*

The *Entertainment* cluster capitalizes on many of Yuma's strengths, including the freshwater surplus and weather conditions. A potential new water park is an excellent use of existing resources while increasing quality of life and economic output.

5. *New opportunities should contribute to further technological advancement, innovation, and evolution of the industrial base in the region; and, by extension, provide "good paying" jobs for citizens*

As mentioned previously, although many of the occupations filling this cluster are low-skilled, the opportunity for career pathways, connecting opportunity youth, and advancements in the lacking recreational base are large opportunities for the region.



3. Do the recommended industries have growth potential and/or a base to diversify?

For the *Entertainment* cluster, the team identified industries that were absent in the region, so the base for diversification is not a relevant consideration in their final selection. What mattered, most of all, for their inclusion was the opportunity to diversify and upgrade the quality of life/vibrancy of the region as a whole. Building and expanding leisure time activities will have a trickle-down effect, not easily measurable, but well beyond the dollars and cents the cluster can pump into the economy. A vibrant entertainment cluster is vital in the attraction and retention of talent to the region and can help with landing other, higher-wage, larger impact industries. More and more frequently, large employers- especially those dependent on a technically skilled, younger workforce- take a keen interest in the quality-of-life factor in a region before selecting a site. The wages and opportunity employers provide can be enough to attract employees from outside the region, their long-term retention can be largely dependent on their satisfaction with the region as a whole.

In terms of growth potential, the table below highlights the important metrics for the identified cluster of industry sectors. While the data points are explained in greater in the following page, it is important to note that all values are for the state of Arizona as a whole, given the absence of these subsectors in the greater Yuma region.



NAICS	Industry	2019 Jobs	2020 Jobs	2021 Jobs	2030 Projected Jobs	'21 to '30 Employment Change
312120	Breweries	547	545	668	1,024	53.31%
312140	Distilleries	18	23	27	45	67.37%
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	2,367	1,417	1,216	829	-31.81%
713110	Amusement and Theme Parks	1,286	675	713	615	-13.67%

In terms of growth for the recommended industry subsectors, the Breweries, Distilleries and Performing Arts Venues/Amusement and Theme Parks are, it appears, on divergent paths. Breweries and Distilleries weathered the Covid-dominated year of 2020 with minimal layoffs, and both responded with upward growth in 2021. Similarly, given the nation (and states) appetite for craft beer and spirits, estimates through 2030 illustrate robust projected growth in each subsector (53% and 67%, respectively), highlighting an increase in expected demand over the next decade.

At first glance, the data seems to point to a downward trend in employment for the Amusement and Performance industries. It is essential to note, however, that projections and future employment estimates are extremely sensitive to the most recent, annual trends in the industry. This is extremely relevant when considering the difficult years for the industry in 2020/2021. Plagued by forced shut-downs, restrictions on admissions, enhanced safety protocols and a population generally wary of travel and outside exposure throughout the pandemic, it is not surprising to see the recent dip in industry employment. It is also worth noting that, at the national level, employment is actually expected to **grow** in these industries through 2030, at a pace of 10% for Performing Arts et. al. and 22% for Amusement and Theme Parks. With travel exploding again, and the pandemic, as of this writing, finally waning, the opportunity for future growth in the industry for Arizona, and Yuma, is worth considering. Add to that the potential market share waiting to be captured (highlighted below in **the next section**), the overall absence of these type of facilities in the region, and the quality of life needs for residents of the region, and the potential for a successful venture- perhaps an attraction that requires a surplus of water- in the Yuma region seems significant.



4. Do the recommended industries address an unmet need/demand from the population?

To quantify the demand for the industry services in the region (again, in this example, the state of Arizona) we drew on consumer/industry spending estimates for the year of 2021, based on data from the US Bureau of Economic Analysis. Between dollars spent in region (state of Arizona) and dollars spent out of region (anywhere else), citizens and industries spent a whopping \$667 million on Brewery products, \$341 million on distillery products, \$170 million at performance arts/sports/entertainment venues, and \$234 million at amusement and theme parks. Unfortunately, the majority of those dollars went to out of region businesses, as highlighted below in the table below.

NAICS	Industry	2021 In-Region Demand Met	In-Region Demand Spending	Out-Region Demand Spending	2%, Out-Region Market Share	5%, Out-Region Market Share
312120	Breweries	27%	\$246,607,340	\$420,145,838	\$8,402,917	\$21,007,292
312140	Distilleries	6%	\$19,864,476	\$311,210,121	\$6,224,202	\$15,560,506
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	64%	\$109,158,953	\$61,401,911	\$1,228,038	\$3,070,096
713110	Amusement and Theme Parks	16%	\$37,415,081	\$196,429,173	\$3,928,583	\$9,821,459

While a full list of the row labels/value descriptions **appears on the next page** for consideration, the table above illustrates two key takeaways:

1. Overall, the demand of Arizona citizens is being met outside the state. In-state breweries and distilleries meet only 27% and 6% of the statewide demand, with in-state Amusement facilities satisfying 16% of the statewide demand and Performance arts/sports venues fairing better overall, capturing 64% of the statewide spending.
2. The market potential for a small to mid-sized business in the Yuma region is considerable. The last 2 rows highlight the dollar value of capturing a mere 2 or 5 percent of all the out-of-region sales, respectively. Keeping Arizonans- thirsty for both entertainment and libations- closer to home is just good business.

Description of Row Labels

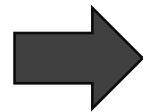
- **2021 In-Region Demand Met:** The percentage of all spending by Arizona citizens and Arizona-based industries within the region on the goods and services offered by the respective industry subsector.
- **In-Region Demand Spending:** Dollar value of all sales and services to in-region consumers, by in-region establishments
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- **2%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 2% of the total out-region spending by consumers
- **5%, Out-Region Market Share:** Dollar value of potential sales for an establishment that can capture 5% of the total out-region spending by consumers

5. What is the potential impact of the recommended industries on the economy of the region?

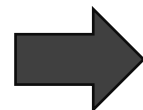
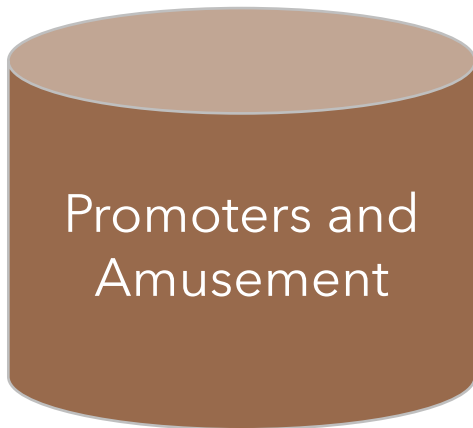
A forecast including changes in earnings, jobs, and taxes on production and imports (TPI) is included to highlight the economic impact of attracting new businesses in the Entertainment and Recreation target cluster on the Yuma regional economy. Using data based on current Arizona and Yuma establishments, jobs are distributed throughout each NAICS in the scenario of 72 new jobs, or 5 new establishments. As seen in the tables on the next page, the increase in new “potential” establishments impacts the “job increase” column. Impacts from the new jobs, including the change in earnings, jobs, and taxes can be seen for each industry group in the subsequent tables. For more information on the input/output model calculation methodology, please see [here](#). Below are definitions of each of the categories in the impact model:

- Initial Change: Shows the change in earnings for the industry employer, and the number of new jobs created. For these examples, we set the new jobs at 72.
- Direct Change: The impact these 72 new jobs will have on the supply-chain, other employers, also in terms of additional earnings and jobs created. In the breweries example below, adding 6 new jobs in the initial phase is projected to generate the creation of 6 new supply chain positions.
- Indirect Change: Highlights a further ripple effect of the initial 72 jobs, stated more awkwardly, this shows the change in revenue and employment for the “supply chain’s, supply chain”.
- Induced Change: Shows the change brought about by the earnings of employees as they spend in them in the community, the investments they make, and the subsequent government created to manage the direct, indirect, and initial changes in earnings. The final column highlights the net impact of all the change waves on local, state, and federal taxes received.

NAICS	Industry	Arizona Est. 2021	Current Yuma Est. 2021	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
312120	Breweries	50	0	13	2	26
312140	Distilleries	9	0	3	1	3
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	84	1	15	2	15
713110	Amusement and Theme Parks	25	2	28	3	28



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$1.3M	29	-
Direct	\$410K	6	-
Indirect	\$105K	2	-
Induced	\$1.1M	22	-
Local	-	-	\$923K
State	-	-	\$705K
Federal	-	-	\$305K



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$1.1M	43	-
Direct	\$105K	4	-
Indirect	\$20K	1	-
Induced	\$315M	7	-
Local	-	-	\$198K
State	-	-	\$157K
Federal	-	-	\$55K

Industry Demand Table

The addition of new businesses in the *Entertainment* cluster will not only benefit each sectors growth, but others around it. By finding the most common purchases for each target NAICS industry in the cluster, we can start to see how the local supply chain may be impacted. As Yuma has relatively low representation from the NAICS target industries as discussed previously, in-region and imported purchases are shown on the state (AZ) and national level. Purchases are shown in percentages to give an idea of where Yuma will see the most influx of dollars spent by potential target industries in the region that may be brought in.



Breweries and Distilleries

In the Breweries and Distilleries subgroup, top purchases for these industries come from the Metal Can Manufacturing industry. In Arizona, on average, 11% of all spending for Breweries and Distilleries go towards this industry. That said, the Crop Production industry also experiences a high percentage of purchases both in Arizona and nationally. This overlaps well with Yuma’s strong agricultural base, as in-region purchases may be amplified compared to state and national averages due to Yuma’s large agriculture presence.

NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
332431	Metal Can Manufacturing	11%	9%
111000	Crop Production	9%	8%
322211	Corrugated and Solid Fiber Box Manufacturing	6%	5%
332439	Other Metal Container Manufacturing	6%	5%
327215	Glass Product Manufacturing Made of Purchased Glass	5%	5%
311211	Flour Milling	4%	4%
533110	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	3%	2%
551114	Corporate, Subsidiary, and Regional Managing Offices	3%	3%
524210	Insurance Agencies and Brokerages	2%	2%
327213	Glass Container Manufacturing	2%	2%

Promoters of Performing Arts, Sports, and Similar Events with Facilities and Amusement and Theme Parks Industry Group

For the Promoters and Amusement subgroup, the highest percentage of purchases for these industries come from the Independent Artists, Writers, and Performers industry. Agents and Managers, as well as Insurance Agencies and Brokerages also hold comparatively high percentages of total purchases. Total purchases for the industry groupings are relatively equal across each region represented. While Yuma has relatively low employment representation of the industries listed, purchases for entertainment industries tend to skew higher towards in-region business, potentially helping grow the top industries listed for purchases if the target industries are brought in.



NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
711510	Independent Artists, Writers, and Performers	7%	5%
711410	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	6%	4%
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	5%	3%
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities	5%	3%
524210	Insurance Agencies and Brokerages	4%	3%
531110	Lessors of Residential Buildings and Dwellings	4%	3%
531210	Offices of Real Estate Agents and Brokers	3%	2%
533110	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	3%	2%
531120	Lessors of Nonresidential Buildings (except Mini warehouses)	3%	2%
561320	Temporary Help Services	2%	2%

Life Sciences

Informed by data, insights about the region, feedback from community stakeholders and vetted by a team of Economic Development and Research/Evaluation experts, the fifth, and final target industry is the *Life Sciences* cluster for the greater Yuma region. To best inform the selection of these sectors and subsectors, the team at TPMA used the following list of 4 considerations to inform the framework of this analysis:

1. Do the Identified industries fit with Yuma’s Assets or Competitive Advantages?
2. Do the identified industries coincide with established development goals?
3. Do the recommended industries have growth potential and/or a base to diversify?
4. What is the potential impact of the recommended industries on the economy of the region?

As seen, the “Do the recommended industries address an unmet need/demand from the population?” screening is not listed for the *Life Sciences* cluster. This is because the cluster was founded on the principle through conversations with focus groups and city leaders that the need for more healthcare options in the region is a top priority. Additionally, while we could pull demand data similar to the other clusters (i.e. in-region spending), demand for healthcare needs may be underrepresented due to many citizens forgoing services based on the lack of accessibility. That said, the following questions that are listed above are answered through data and insights in the pages that follow. Additionally, below are specific identified industry North American Industry Classification System (NAICS) codes that form the base for the *Life Sciences* cluster. As seen, two niche markets of the cluster include (1) Medical Manufacturing, and (2) Research and Development.



INDUSTRY NAICS CODES

<u>6-Digit Code</u>	<u>Industry Description</u>	
339112	Surgical and Medical Instrument Manufacturing	} Medical Manufacturing
541714	Research and Development in Biotechnology (except Nanobiotechnology)	
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	} Research & Development
621511	Medical Laboratories	

NAICS Overview

The *Life Sciences* cluster identifies industries that appear to be a good match for the Yuma region, for a variety of reasons. While other clusters focused on the need to diversify up the tech ladder, or plug holes in the supply, or broaden the manufacturing base of Yuma, the *Life Sciences* cluster of industries each can contribute to these broad economic development goals.

Before launching into a fuller review of the proposed industries, a few brief comments on what is not included. Throughout conversations with focus groups and city leaders, the topic of the need for more healthcare options in the region was raised. At the same time, respondents also discussed- in great detail- some of the challenges attracting and retaining health care workers- and the educators needed to produce new professionals in the field. Given the nationwide shortage of workers, the increasingly competitive travel worker market for nurses (of all degree levels and specializations), the relatively small-scale employment of new facilities (below the hospital level, of course), the idiosyncratic nature of attracting health care specialists, and- by all accounts- a vibrant and engaged community partner in Yuma Regional Medical Center, the team at TPMA opted to refrain from including consumer-facing healthcare providers on this list.

With that caveat aside, the suggested industry sub-sectors for inclusion in the *Life Sciences* cluster appear below.

NAICS	Industry	2021 Jobs	2021 - 2030 Employment Growth	2021 Est.	2021 Average Est. Size	2021 Average Wages Per Job
339112	Surgical and Medical Instrument Manufacturing	3,058	41%	51	60	\$106,272
541714	Research and Development in Biotechnology (except Nanobiotechnology)	1,794	22%	243	7	\$141,702
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	3,096	32%	388	8	\$129,737
621511	Medical Laboratories	7,469	36%	242	31	\$79,776

1. Do the Identified industries fit with Yuma's Assets or Competitive Advantages?

To best define the region's advantages/unique assets, the team at TPMA took a 2-pronged approach, relying on 1) insight from community members, gathered through a series of focus groups/interviews and 2) data-informed metrics that considered the region's current industry mix/output/gaps, the skills needed in the industry, and the region's existing workforce.

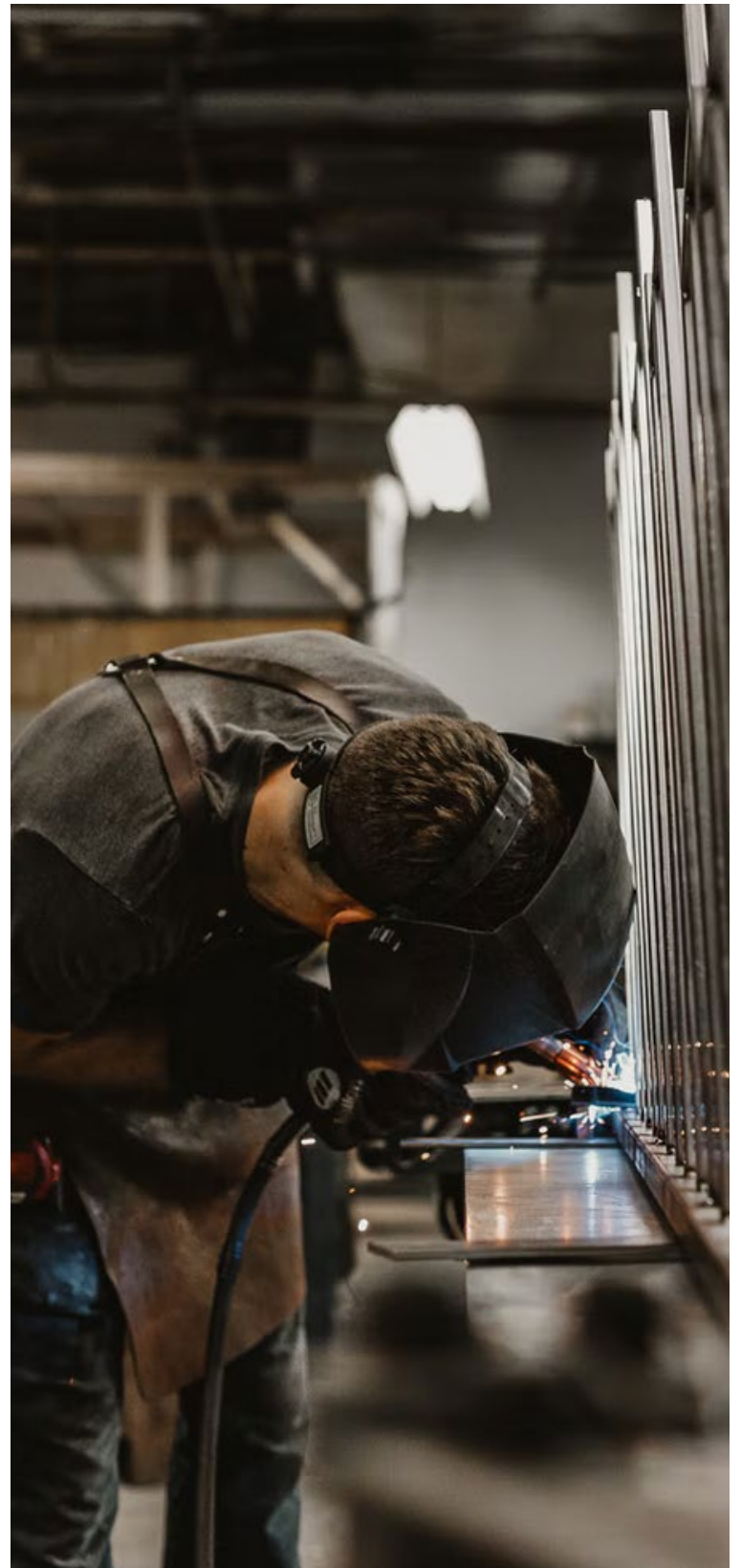
With regard to the *Life Sciences* cluster of industries we have identified, there were five primary factors identified by focus groups/interviewees as relevant assets:

1. Solid Supply of Light Manufacturing Sites-

given the zoning constraints and general commitment to preserving the small-town feel of Yuma, the TPMA team focused in on industries that, by and large, could be considered light industrial. For this cluster, the medical/surgical equipment manufacturing option and the medical laboratory/testing site option both fit this parameter. Additionally, given the small size of most research/development firms, limited office space will be required, and laboratory/research settings/sites should also be easy to identify and develop. Again, with the region's strong ties to aerospace, defense, and the potential of a new spaceport in the region, these type of complementary ventures in the R/D world should feel right at home in Yuma County.

2. The Region's Strong Workforce, Education, and Employer Partnerships-

we have discussed the nexus in greater detail in separate cluster profile, but it is worth mentioning again. The TPMA team was particularly impressed with both the obvious familiarity workforce and education officials evidenced with each other and the collegial, cooperative attitude they shared. Far too often communities are handcuffed by silos, and a lack of collaboration with employers leads to a mismatch between the skills they need, and the training offered by education providers. In Yuma, educators and workforce professionals have a strong track record of listening to employers and developing targeted trainings that meet their needs- this will be particularly vital when launching new industries, in this cluster, for example, the Surgical and Medical Equipment Manufacturing Industry.



3. Cross-Border Collaboration, access to an International Pool of Talent- not only is Yuma's proximity to the Southern border a major asset when promoting transportation and distribution networks, but the work between Mexican and US workforce officials ensures it is an asset for talent recruitment as well. With 2 major Mexican universities within a 2-hour drive of Yuma, the region already enjoyed an informal recruiting network that led to significant workforce attraction of international graduates, especially in the engineering/architecture fields. In January of 2022, the Arizona Department of Employment, in collaboration with their counterparts in Mexico, integrated the state-sponsored job banks and posting boards, to promote opportunities in the United States directly to the regional population of Mexico at large. Though still in its early stages, this evolution and intentional cross-border collaboration has the potential to turbo-charge the influx of talent from Mexico.

4. An Interest in Promoting/Preserving Existing Industries in the Region- while not unique to Yuma (or this cluster of industries), there is a careful balance between attracting new industries and managing the risk of cannibalizing talent from existing firms in the region. Economic Developers, Workforce Professionals, and Public Officials all expressed a commitment to developing strategies around workforce attraction that do not unduly impinge on existing employers. While, of course, market forces will dictate the flow of talent, the proposed industries in this cluster are small enough in scale- especially at the start-up phase- that the initial potential exodus of talent from existing firms will be minimal. Especially within the Research and Development sphere, where average firm size (at least in Arizona) is less than 10 employees.

5. A Commitment to Expanding the Research and Development Footprint in the Region- In addition to the broader contextual considerations in points 1 through 4, the stakeholders in Yuma all but universally shared a strong desire to see Yuma grow its R&D/High-Tech footprint. With a strong emphasis on defense in the region, a new potential spaceport, and, ultimately, the attraction of a series of high-tech/next generation manufacturing initiatives to the region will ratchet up the regional demand for Research and Development to fuel the next wave of innovation. Attracting businesses focused on this type of work is a pre-stated priority for the Yuma team, and NAICS 541714 and 541715 fit perfectly with this strategy.



Skills Match

In terms of data-informed support for the development of a more robust *Life Sciences* cluster, the team considered the match of skills needed in the industries to the region's population. The staffing patterns below indicate the occupational makeup of the industry NAICS in the *Life Sciences* Cluster. As limited data is available solely for Yuma, data is derived on the state level. NAICS were combined based on comparability of industry, with percentage of total jobs in industry group listed, typical entry level education, work experience, on-the-job training, and skills needed for each occupation (pulled from job postings in Arizona). Overall, jobs in the Medical Manufacturing subgroup require lower typical entry level education as well as training, and basic skills than those of the Research and Development subgroup.

As both skill matrices below highlight, many jobs, particularly in the Research and Development subgroup in the *Life Sciences* cluster, will require a credentialed or degreed workforce, and again, the need to leverage the strong workforce/education ecosystem in Yuma County to build a pipeline of talent moving forward. For the initial start-up labor force, given the average establishment sizes highlighted earlier in the section, external recruits and, in some situations, existing employees of other establishments in the region will likely make up the initial labor force needed. However, given the high average wages across these industries- and the Yuma Cost of Living multiplier- initial attraction of staff should not be a significant challenge.

Medical Manufacturing

The top five occupations that most commonly fill the Medical Manufacturing subgroup in Arizona are shown below. Typically, these occupations require a high school diploma or equivalent, while offering very little on-the-job training. Skills needed for the occupations listed vary widely, including warehousing, medical assembly, auditing, and other basic manufacturing/medical skills.

SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Typical Job OTJ Training	Top Specialized Skills Needed
51-2098	Miscellaneous Assemblers and Fabricators	11.5%	High school diploma or equivalent	None	- Hand Tools - Power Tool Operation - Warehousing
51-9082	Medical Appliance Technicians	4.6%	High school diploma or equivalent	None	- Medical Device Assembly - Cleanrooms - Medical Devices
51-9081	Dental Laboratory Technicians	4.4%	High school diploma or equivalent	None	- Denture Application - Laboratory Experience - Medical Prescription
43-4051	Customer Service Representatives	4.3%	High school diploma or equivalent	None	- Call Center Experience - Inbound Calls - Customer Inquiries
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3.4%	High school diploma or equivalent	None	- Auditing - Calipers - Micrometer

Research and Development

The top five occupations that most commonly fill the Research and Development subgroup in Arizona are shown below. Typically, these occupations require very high levels of education, including bachelor's and doctoral or professional degrees. Some of the most common skills needed for occupations that commonly fill these industries heavily revolve around the healthcare sector, including clinical work, laboratory, biology, and other medical skills.



SOC	Job Description	% of Total Jobs in Industry Group	Typical Entry Level Education	Typical Job OTJ Training	Top Specialized Skills Needed
29-2018	Clinical Laboratory Technologists and Technicians	17.0%	Bachelor's degree	None	<ul style="list-style-type: none"> - Medical Laboratory - Biology - Laboratory Equipment
43-4051	Customer Service Representatives	4.3%	High school diploma or equivalent	Short-term on-the-job training	<ul style="list-style-type: none"> - Call Center Experience - Inbound Calls - Customer Inquiries
31-9097	Phlebotomists	3.6%	Postsecondary nondegree award	None	<ul style="list-style-type: none"> - Phlebotomy - Biology - Medical Terminology
29-2034	Radiologic Technologists and Technicians	3.5%	Associate's degree	None	<ul style="list-style-type: none"> - Radiology - Radiography - Basic Life Support
19-1042	Medical Scientists, Except Epidemiologists	2.9%	Doctoral or professional degree	None	<ul style="list-style-type: none"> - Clinical Research - Medical Laboratory - Clinical Trials

2. Do the identified industries coincide with established development goals?

The *Life Sciences* cluster of industries addresses several key goals of the Yuma team. Specifically:

1. The need to intentionally target high-growth sectors. While almost all of our industry recommendations across each of the clusters are, according to models from EMSI/Burning Glass, poised to grow over the next decade, the subsectors identified in this cluster are poised to set a blistering pace for growth through 2030- with all suggested entrants growing at a pace of 22% or more.
2. A desire to manage growth responsibly, attracting the right-sized businesses to the right sites in Yuma. Again, with a particular emphasis on minimal office space/lab space and light-industrial operations, the TPMA team kept this consideration at the forefront when considering recommendations for inclusion in this cluster.
3. A desire to broaden and deepen the high-tech/next generation manufacturing base in the region. With constant advances in the production of medical/surgical equipment, and the evolving needs of practitioners, the manufacturing of these devices in Yuma could contribute to this step of the tech ladder. Additionally, and more clearly linked to the goal, attracting think tanks and research facilities focused on solving the latest challenges in Biotechnology and the Life Sciences would further improve the position of Yuma county as a research hub for the state.



3. Do the recommended industries have growth potential and/or a base to diversify?

Within the *Life Sciences* cluster, we have identified 2 opportunities for research and development facilities (541714 and 541715) in the region, one opportunity to bolster the testing/processing capabilities of local medical providers (621511), and an opportunity for the region to target a new manufacturer (339112), serving the medical services industry. This eclectic cluster of opportunities are united by several common features:

Explosive growth over the next decade, as projected by the US Bureau of Labor Statistics and EMSI/Burning Glass™. All of these industries are expected to grow by 22% or more through 2030, with the Surgical/Medical Instrument Manufacturing Industry poised to expand by 41%.

Based on the average industry wages in Arizona (see table below for the COLA wages in Yuma/Arizona), all suggested industries offer strong, family-sustaining salaries for residents.

Finally, all industries have a foothold in Arizona, and all but the Surgical/Medical manufacturing industry have a small presence in Yuma County. The table below also includes 2021 employment totals for the county.

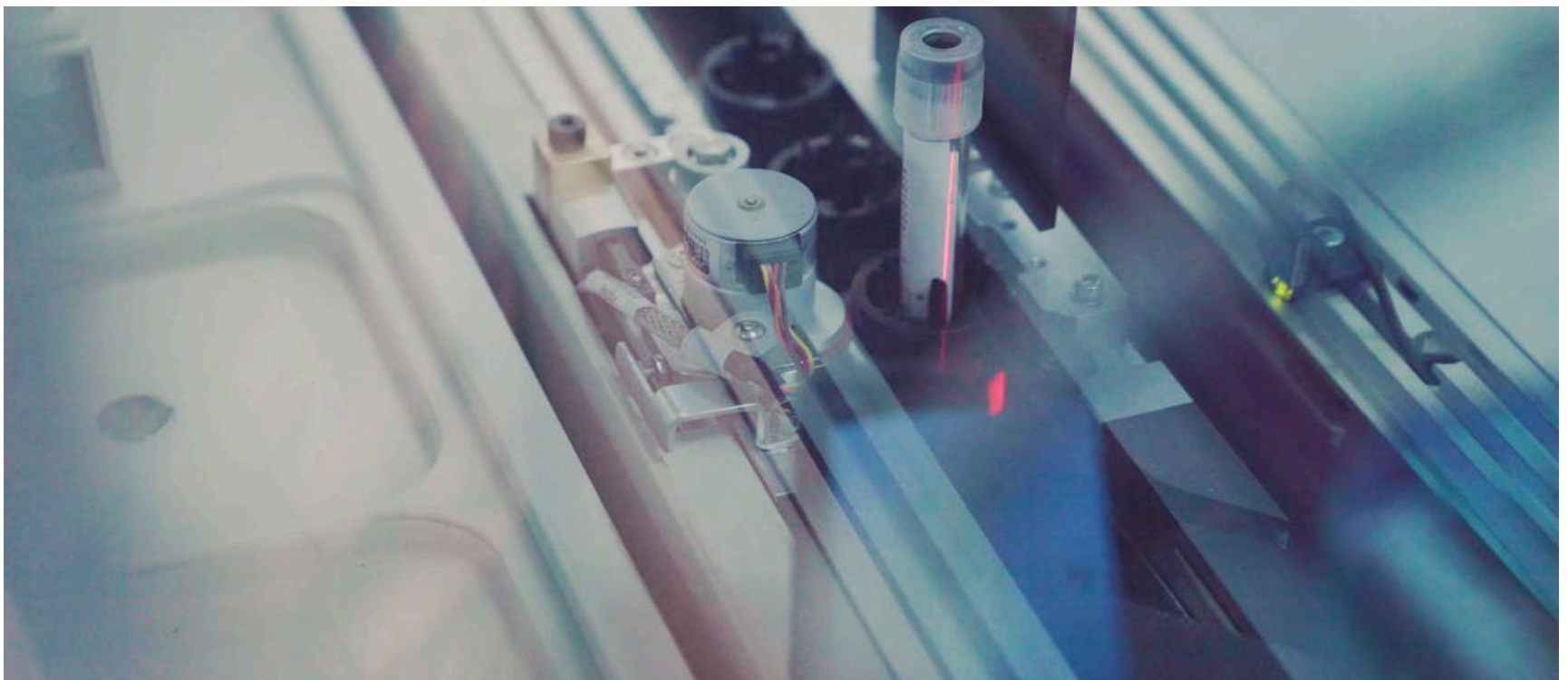
NAICS	Industry	2021 Jobs	Average Earnings Per Job (Yuma)	COL Adjusted Average Earnings (Yuma)	COL Adjusted Average Earnings (AZ)
339112	Surgical and Medical Instrument Manufacturing	N/A	N/A	N/A	\$104,393
54171	Research and Development in Biotechnology (except Nanobiotechnology)	10	\$113,924	\$132,779	\$139,196
54171	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	60	\$67,894	\$79,130	\$127,443
62151	Medical Laboratories	34	\$68,917	\$80,323	\$78,366

All told, across the 3 industries with a presence in Yuma County, there were just over 100 employees located in Yuma County. Consistent with findings for the other clusters, and a key marketing point for prospective employers, is a consistent bump in actual earnings in Yuma County, when the cost of living is accounted for. The “Average Earnings” and “COL Adjusted Earnings” columns in the table above illustrate the effect. This COL multiplier results in, on average, a boost of just under 17% in spending power for employees living in Yuma County. With a lower cost of living, employers in Yuma County are capable of paying average wages lower than their counterparts across the state, while still preserving a high-quality of life for the employees, who enjoy much greater purchasing power in the region.

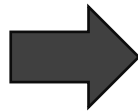
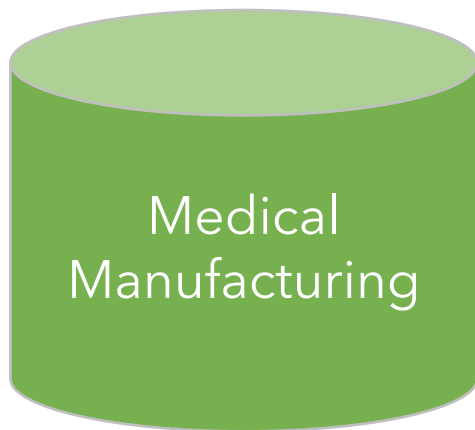
4. What is the potential impact of the recommended industries on the economy of the region?

A forecast including changes in earnings, jobs, and taxes on production and imports (TPI) is included to highlight the economic impact of attracting new businesses in the *Life Sciences* target cluster on the Yuma regional economy. Using data based on current Arizona and Yuma establishments, jobs are distributed throughout each NAICS in the scenario of 110 new jobs, or 5 new establishments. As seen in the table on the next page, the increase in new “potential” establishments impacts the “job increase” column. Impacts from the new jobs, including the change in earnings, jobs, and taxes can be seen for each industry group are in the tables that follow. For more information on the input/output model calculation methodology, please see [here](#). Below are definitions of each of the categories in the impact model:

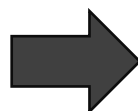
- Initial Change: Shows the change in earnings for the industry employer, and the number of new jobs created. For these examples, we set the new jobs at 110.
- Direct Change: The impact these 110 new jobs will have on the supply-chain, other employers, also in terms of additional earnings and jobs created. In the Medical Manufacturing example below, adding 60 new jobs in the initial phase is projected to generate the creation of 16 new supply chain positions.
- Indirect Change: Highlights a further ripple effect of the initial 110 jobs, stated more awkwardly, this shows the change in revenue and employment for the “supply chain’s, supply chain”.
- Induced Change: Shows the change brought about by the earnings of employees as they spend in them in the community, the investments they make, and the subsequent government created to manage the direct, indirect, and initial changes in earnings. The final column highlights the net impact of all the change waves on local, state, and federal taxes received.



NAICS	Industry	Arizona Est. 2021	Current Yuma Est.	Avg. Employees per Est.	"Potential" Yuma Est.	Job Increase
339112	Surgical & Medical Instrument Manu.	51	0	60	1	60
541714	Research & Development in Biotechnology (except Nanobiotechnology)	243	3	7	1	10
541715	Research & Development in the Physical, Engineering, & Life Sciences (except Nanotechnology & Biotechnology)	388	9	8	1	10
621511	Medical Laboratories	242	1	31	1	30



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$6M	60	-
Direct	\$1.1K	16	-
Indirect	\$405K	7	-
Induced	\$4.6M	81	-
Local	-	-	\$393K
State	-	-	\$363K
Federal	-	-	\$310K



	Change in Earnings	Change in Jobs	Change in Taxes on TPI
Initial	\$4.6M	50	-
Direct	\$1.1M	17	-
Indirect	\$397K	7	-
Induced	\$3.1M	55	-
Local	-	-	\$262K
State	-	-	\$225K
Federal	-	-	\$143K

Industry Demand Table

The addition of new businesses in *Life Sciences* cluster will not only benefit each sectors growth, but others around it. By finding the most common purchases for each target NAICS industry in the cluster, we can start to see how the local supply chain may be impacted. As Yuma has relatively low representation from the NAICS target industries as discussed previously, in-region and imported purchases are shown on the state (AZ) and national level. Purchases are shown in percentages to give an idea of where Yuma will see the most influx of dollars spent by potential target industries in the region that may be brought in.



Medical Manufacturing

In the Medical Manufacturing subgroup, top purchases for this industry (NAICS 339112) come from the Surgical Appliance and Supplies Manufacturing. In Arizona, on average, 7% of all spending for the Surgical and Medical Equipment Manufacturing sector go towards, somewhat expectedly, this industry. That said, other many other types of manufacturing, as well as software wholesalers also experience purchases both in Arizona and nationally from the Medical Manufacturing subgroup.

NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
339113	Surgical Appliance and Supplies Manufacturing	7%	7%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	5%	5%
326199	All Other Plastics Product Manufacturing	5%	5%
551114	Corporate, Subsidiary, and Regional Managing Offices	5%	5%
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	5%	5%
325211	Plastics Material and Resin Manufacturing	4%	4%
339112	Surgical and Medical Instrument Manufacturing	3%	3%
541110	Offices of Lawyers	3%	3%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	2%	2%
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	1%	1%

Research and Development

For the Research and Development subgroup, the highest percentage of purchases for these industries come from the Biological Product (except Diagnostic) Manufacturing industry. Corporate, Subsidiary, and Regional Managing Offices, and Drugs and Druggists' Sundries Merchant Wholesalers also hold comparatively high percentages of total purchases. Total purchases for the industry groupings are comparably different than in Arizona and the nation. Arizona seems to rely more heavily on purchases for these industries in the manufacturing sectors as does the rest of the nation, indicating a possible advantage for further bolstering the medical manufacturing supply chain.



NAICS	Industry	% Of Total Purchases	
		Arizona	U.S.
325414	Biological Product (except Diagnostic) Manufacturing	6%	2%
551114	Corporate, Subsidiary, and Regional Managing Offices	6%	5%
424210	Drugs and Druggists' Sundries Merchant Wholesalers	5%	2%
541611	Administrative Management and General Management Consulting Services	5%	5%
561320	Temporary Help Services	3%	3%
541110	Offices of Lawyers	3%	3%
519130	Internet Publishing and Broadcasting and Web Search Portals	3%	4%
531110	Lessors of Residential Buildings and Dwellings	2%	2%
541990	All Other Professional, Scientific, and Technical Services	2%	2%
561110	Office Administrative Services	2%	2%

Appendix

Marketing Strategy

- Overview
- Differentiators
- Strategy

Region LMI Overview

- About the Region
- Demographics
- Industry
- Occupation

Stakeholder Engagement

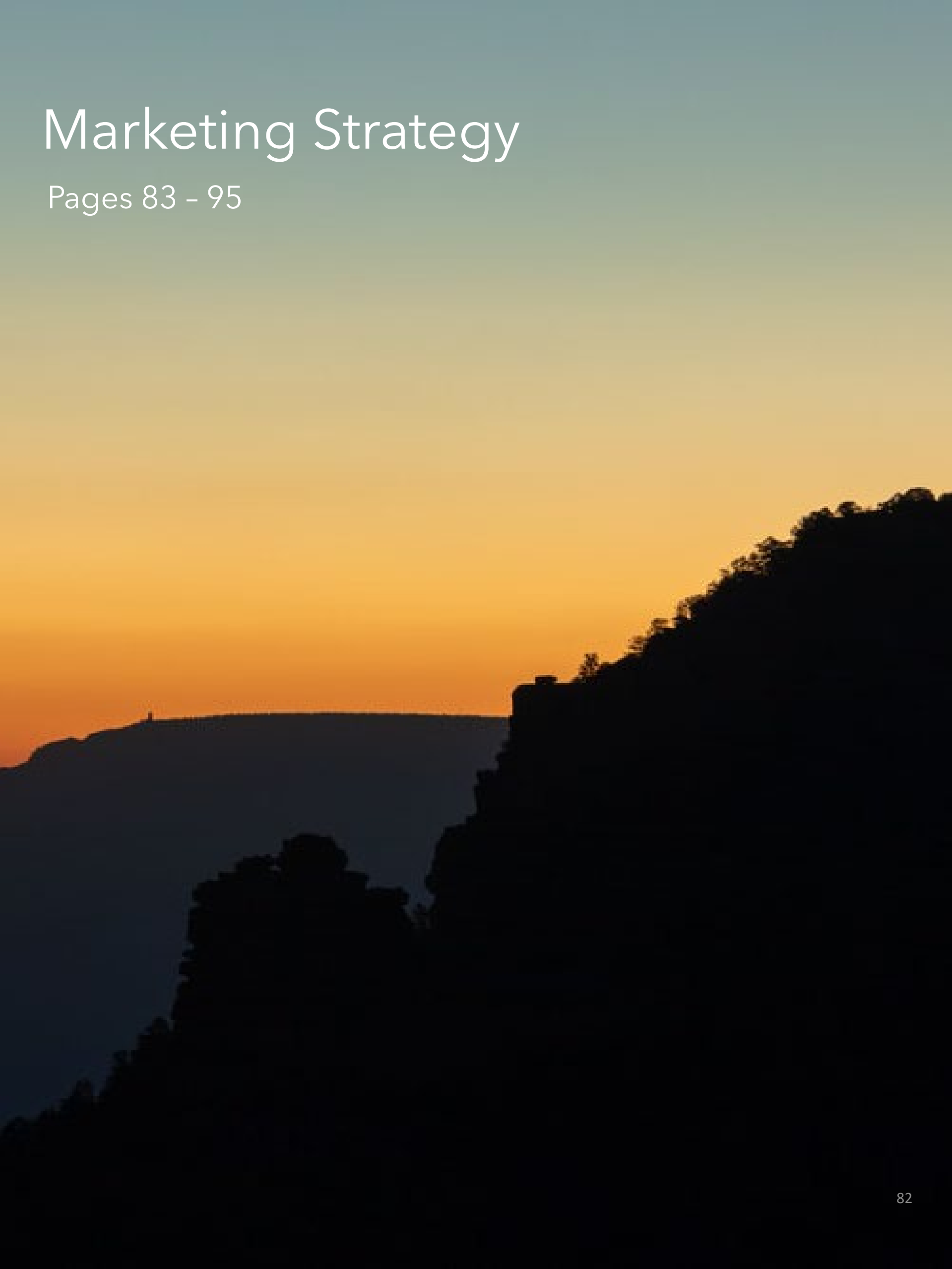
- Regional Assets
- Challenges
- Industry Opportunities
- Competitor Regions

Competitor Region Profiles

- Albuquerque
- Flagstaff
- Las Vegas
- Maricopa County
- San Diego
- St. George

Marketing Strategy

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Marketing Strategy Overview

Purpose

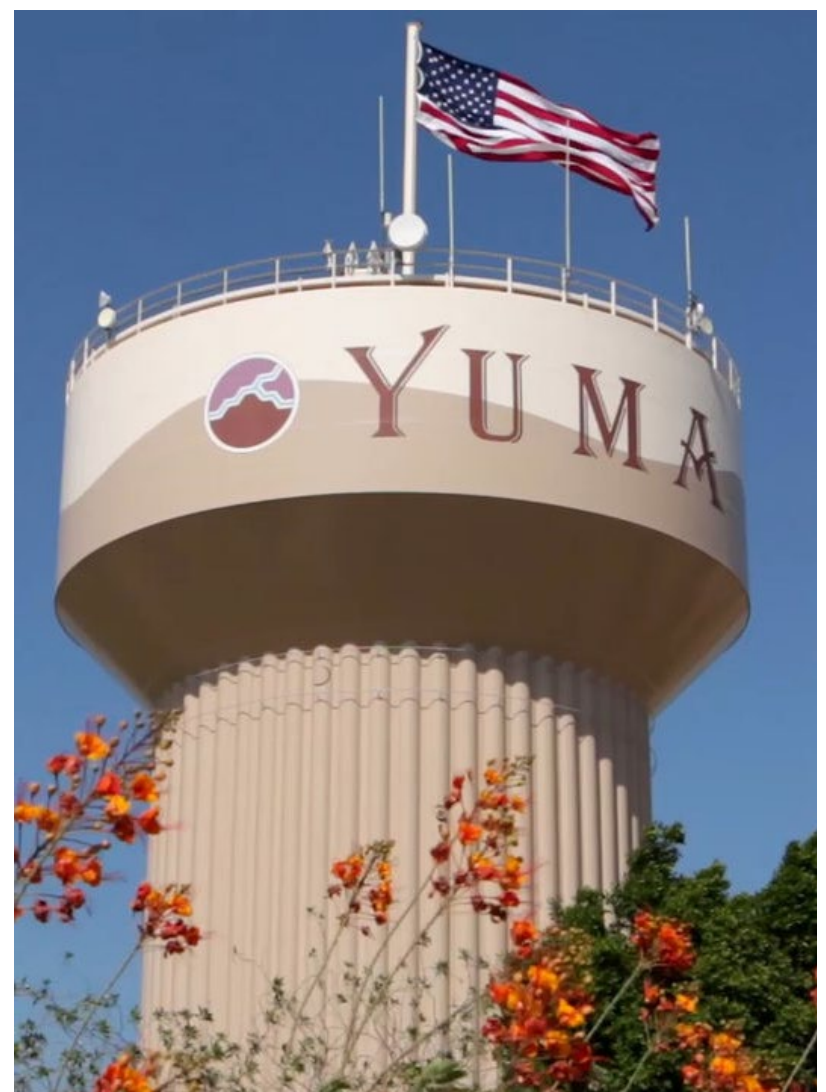
The purpose of this marketing plan is to outline how the City of Yuma can begin to market to and eventually attract businesses from the industries outlined in the Yuma Target Industry Analysis conducted by Thomas P. Miller and Associates. Economic Development marketing, like all traditional marketing efforts, is about positioning a product and differentiating it from the competition. The following marketing strategy will attempt to help Yuma understand its current marketable assets, areas for improvement, and outline strategies to best attract companies from identified target industries.

Objectives

- Help city leaders understand the top location factors for site selection consultants and corporate decision makers
- Evaluate and identify marketable assets in the City of Yuma
- Evaluate and identify areas for improvement for the City of Yuma in the context of economic development marketing
- Identify key themes and competitive advantages in each of the identified Target Industries
- Outline strategies and tactics for a potential City of Yuma economic development marketing campaign

Methodology

Informed by the Target Industry Analysis, the project team has used the Target Industry Analysis to form the basis of the complimentary Target Industry Marketing Strategy. Quantitative data analysis was reviewed, including socioeconomic data, industry data, labor and workforce data, and economic forecast and projection models were used to better understand the Yuma Economy and subsequently identify key marketable assets. Further, a thorough historical document review and a series of interviews and stakeholder engagement sessions were conducted to help the project team deepen its understanding of both the overall economy in Yuma, and the key attributes and assets in the context of the identified target industries. This discovery and research process informed the evaluation that follows of how the city generally stacks up against top location factors, and further, analyzes what assets and attributes are favorable in each target industry.



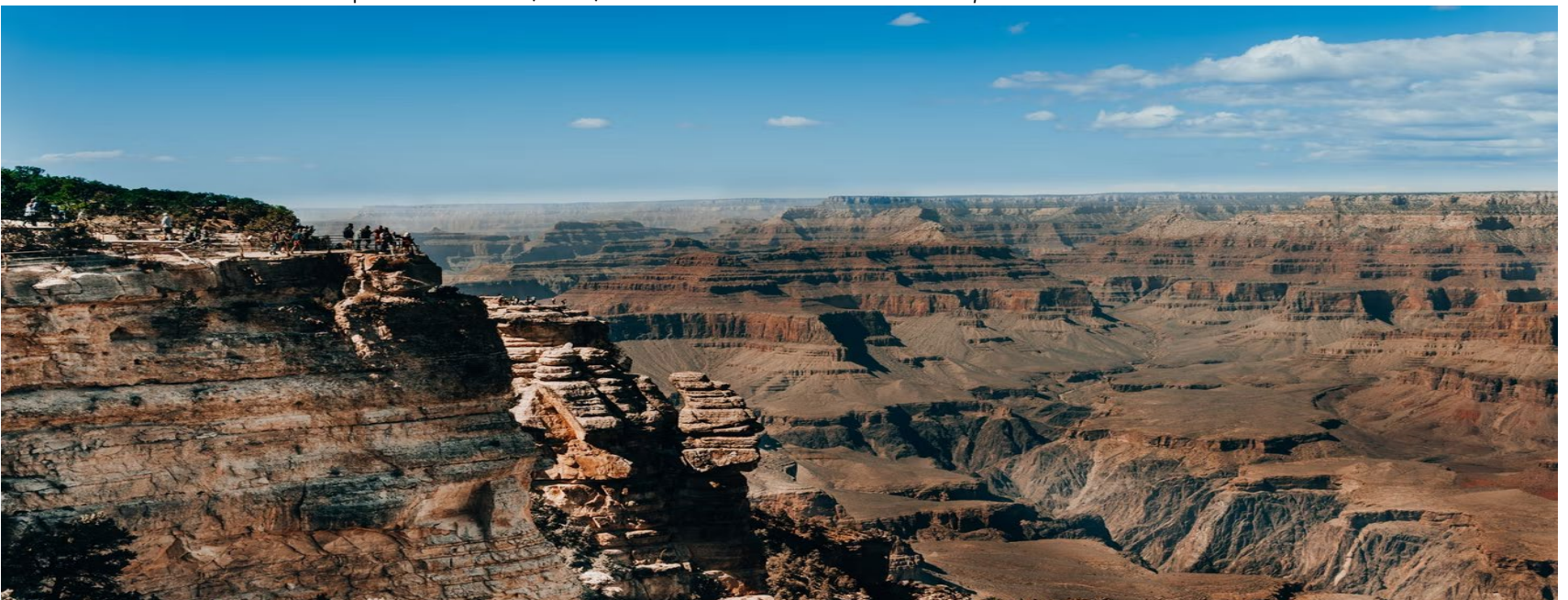
Top Location Factors

Top Business Attraction Location Factors

Before the City of Yuma can execute an economic development marketing campaign, it is important for city leaders to understand characteristics and attributes that site selection consultants and corporate decision makers evaluate when looking at potential new sites for expansion or relocation. It's important to note that location factors differ among industries and within sectors, however, it's useful to understand generally the factors involved in the site selection process. The International Economic Development Council (IEDC) outlines the following 'Top Location Factors' as follows (in alphabetical order):

- Access (proximity) to customer and supplier markets
- Access (proximity) to, and quality of transportation, transportation systems
- Access to business and professional services
- Availability of suitable, affordable, and 'ready' land and facilities
- Environmental condition of the land
- Business climate
- Availability and cost of financial capital
- Image of the community
- Incentives
- Labor force quality, productivity, cost, and availability
- Level of unionization
- Quality of life
- Regulations - environmental, workers compensation, zoning
- State and local government attitude towards business
- Taxes - sales, property, corporate, and personal
- Telecommunications systems; broadband availability, access, and affordability
- Utility capabilities and rates

International Economic Development Council. (2015). *Introduction to economic development*.



Yuma's Unique Differentiators

Before an outline and overview of general marketable assets in the City of Yuma, the project team believed it was important to highlight some of the unique differentiators that do not fit nicely into one of the location factor categories listed previously. These assets are true market differentiators that cannot be found in other communities.

Yuma Proving Ground

As one of the largest military installations in the world and covering over 1,300 square miles, Yuma Proving Ground is an anchor in the region and should serve as a key unique differentiator in economic development marketing efforts. With its stated mission to test every weapon in the ground combat arsenal, combined with its size, infrastructure and equipment, Yuma Proving Ground can be a magnet for a multitude of private sector contracts in defense, aerospace, and military technology.

Marine Corps Air Station - Yuma

As part of the regional military concentration, Marine Corps Air Station Yuma is the largest Marine aviation installation in the U.S. Covering over 3,000 acres and home to multiples quadrans including F-35B Lightning II's, this military anchor also serves as a magnet for private contractors and develops a pipeline of talented, skilled, and work-ready service men and women, including over 600 Marine avionics technicians and maintenance repair mechanics each year. In addition, U.S. allies send thousands of pilots to MCAS for flight training throughout the year.

Restricted Air Space

An overlooked asset of military installations and commercial airports is restricted air space. Restricted air space is highly valued aspect of defense and aerospace industries. Yuma County has more than 2,000 sq. miles of restricted air space. This asset presents Yuma with unique partnership opportunities, both domestically and internationally, that hold benefit for both the public and private sectors.

Arizona Spaceport Development Project

An emerging opportunity, the Arizona Spaceport Development project aims to serve as a premier gateway for global space commerce, and position Arizona as an international axis for the thriving commercial space research and development market. Further, key city partner The Greater Yuma Economic Development Corporation recently received a grant from the US Economic Development for a land feasibility study to prove Yuma County's ability to house the states next spaceport.

General Marketable Strengths

Using the Top Location Factors list developed by the International Economic Development Council, the project used the Target Industry Analysis to assess the top assets and strengths for this economic development marketing strategy.

Access to Customer and Supplier Markets

The importance of Yuma's geographic location can not be overstated. Situated along the Mexican border, and near major markets like San Diego, Phoenix, Los Angeles, Tucson, and Mexicali, Yuma provides premier access to both customer markets and supplier markets. The bi-national border with Mexico provides unique access to a robust international supply chain for a variety of industries in the region. The Two Ports of Entry in San Luis are the second busiest non-commercial ports of entry in Arizona processing over 3 million vehicles and 2.5 million pedestrians each year. Further, the ports of entry are a critical asset for commercial and private cross border traffic, and is scheduled to be expanded, renovated, and improved in coming years because of recent funding and support.

Access to, and Quality of Transportation and Transportation Systems

In addition to its strategic location, Yuma is supported by a robust, high-quality transportation system. In addition to the Ports of Entry mentioned previously, Yuma is rich with interstate, highway, air, and rail transportation access. Notably, I-8 serves as a transportation corridor for over 40,000 travelers daily traveling through Yuma to San Diego in the west and Tucson in the east. In addition, traveling from I-8 also connects to I-10 for access to the greater Phoenix metropolitan area. Additionally, US 95 and US 195 provides North-South connections for travelers in the greater Southwest. In addition to a robust network of highways and interstates, Yuma International Airport features four runways and provides commercial air service with multiple daily flights to Dallas and Phoenix. Lastly, along with other modes of transportation, Union Pacific Railroad has a long history of service to Yuma residents and businesses. Union Pacific Rail service leads to Los Angeles in the west and El Paso, via Tucson, in the east.

State and Local Incentives

Compared against other states and regions, Yuma Arizona can offer prospective businesses and investors a robust set of financial incentives and programmatic support. At the local level, the City of Yuma utilizes a performance-based incentive program to support the expansion of existing businesses and the attraction of new companies. In addition, the city offers a variety of tax reimbursement programs, grant funds, tax credits, and does not collect sales tax on investments in manufacturing equipment. At the state level, partner organizations including the Arizona Commerce Authority offer several programs to assist the attraction and expansion of companies in Arizona. Again, utilizing a performance-based eligibility, program reward companies for facility construction projects and workforce expansion. Additionally, the state offers a utility sales tax waiver, 100% electable sales factor for multi-state corporations, and offers accelerated depreciation schedules for companies making significant capital investments.

Areas for Improvement

While the City of Yuma has many desirable attributes and key assets in place to compete in business attraction, it's also worth understanding the areas for improvement. City leaders should not shy away from these deficiencies, but rather, find ways to address gaps and make measurable improvements in key location factors.

Availability of Suitable, Affordable, and 'Shovel Ready' Land and Facilities

It was noted across all stakeholder engagement sessions that economic development leaders were concerned with a lack of development ready land and move in ready facilities. In addition, stakeholders cited several instances where desirable property lacked sufficient infrastructure, including water, sewer, wastewater treatment, and broadband connectivity. The project team encourages city leadership to conduct a site and building analysis to better understand current industrial and commercial property inventory.

Quality of Life | Affordable and Middle-Market Housing

While Yuma has many desirable quality of life attributes, stakeholders agreed that there was currently a lack of suitable affordable and middle-market housing options. The scope of the Target Industry Analysis did not analyze housing in the region, but the project team is inclined to believe the perception from community leaders. Lack of appropriate housing options can have a detrimental affect on business attraction efforts if not addressed in a timely manner.

Labor Force Quality, Productivity, and Availability

The quantitative analysis conducted for the Target Industry Analysis clearly demonstrates there are numerous strengths and desirable qualities in the local and regional labor force. However, two issues were repeatedly mentioned in stakeholder engagement sessions. First, educational attainment rates in Yuma remain low in comparison to state and federal levels. Low educational attainment rate can have a long-term negative affect on the quality of labor force in the region. Second, and possibly a correlated observation, Yuma has historically struggled to cultivate and attract mid-level and c-level executives for local employers. The project team encourages city leadership to better understand how they can work in partnership with local school districts to improve educational attainment.

Access to Business and Professional Services

Large employers need a strong local support system of business and professional service providers. This includes law offices, accounting firms, architecture firms, banks, insurance providers and other professional firms. The City of Yuma's location quotient (which measure industry concentration) for NAICS industry code Professional, Scientific, and Technical Services is half the national average. To attract medium and large firms within the target industries outlined in the Target Industry Analysis, Yuma will need to support, cultivate, and attract complimentary professional service firms in order to build out an appropriate industry ecosystem.

Advanced Manufacturing

Based on the analysis in the Target Industry Analysis, the project team has outlined a few key competitive advantages and key assets that should be included in all messaging for *Advanced Manufacturing* business attraction campaigns and activities.

Trade Associations

Aerospace and Defense

- [Aeronautical Repair Station Association](#)
- [Aerospace Industries Association](#)
- [Air Traffic Control Association \(ATCA\)](#)
- [Aircraft Electronics Association \(AEA\)](#)
- [Aviation Suppliers Association \(ASA\)](#)
- [General Aviation Manufacturers Association \(GAMA\)](#)
- [Helicopter Association International \(HAI\)](#)
- [Satellite Industry Association \(SIA\)](#)
- [Space Foundation \(SF\)](#)
- [American Astronautical Society](#)
- [American Gear Manufacturers Association](#)
- [American Institute of Aeronautics and Astronautics](#)
- [American Logistics Association](#)
- [Armed Forces Communication Electronics Association](#)
- [Army Aviation Association of America](#)
- [Association for Unmanned Vehicle Systems International](#)
- [Aviation Distributors and Manufacturers Association](#)
- [Aviation Suppliers Association](#)
- [Homeland Security & Defense Business Council](#)
- [National Aeronautic Association](#)
- [National Defense Industrial Association](#)
- [The National Defense Transportation Association](#)
- [Satellite Industry Association](#)

Technology

- [PRBA](#)
- [Battery Council International](#)
- [National Electrical Manufacturers Association](#)
- [NAATBatt International](#)
- [Energy Storage Association](#)

Strategic Location and Access

Once again, Yuma's strategic location is a key asset and competitive advantage when attempting to attract businesses in the Advanced Manufacturing industry cluster. With proximity to major markets, an international border, a robust transportation system, and the potential to serve as an epicenter for reshoring initiatives, Yuma's location and access should be a primary theme when looking to attract companies in the Aerospace and Defense and Technology industries listed in the Target Industry Analysis.

Established Industrial Strength

Yuma has a multitude of assets that are attractive to businesses in the Advanced Manufacturing cluster, maybe none more important than the military, aerospace, and defense industry presence in the region. The Marine Corps Air Station and the Yuma Proving Ground not only serve as a robust pipeline of highly skilled service men and women, but the concentration of military assets is also a definite draw for high-tech manufacturers of weapons, navigation, satellite, and aerospace components. In addition, the restricted air space and potential Spaceport program are highly desirable attributes and initiatives for businesses in the aircraft parts and auxiliary manufacturing industry and the nascent commercial space travel industry.

Other Considerations

- The region's supply of water
- Cross-border collaboration
- International pool of talent
- Suitable infrastructure

Logistics and Processing

Based on the analysis in the Target Industry Analysis, the project team has outlined a few key competitive advantages and key assets that should be included in all messaging for *Logistics and Processing* business attraction campaigns and activities.

Trade Associations

Agriculture Development

- [American Farm Bureau Federation](#)
- [Process Equipment Manufacturers' Association \(PEMA\)](#)
- [The International Fertilizer Association \(IFA\)](#)
- [The Fertilizer Institute](#)

Manufacturing & Transportation Progression

Manufacturing Specific

- [The National Tooling and Machining Association](#)
- [Precision Machined Products Association](#)
- [American Society for Precision Engineering](#)
- [American Institute of Chemical Engineers](#)
- [American Society of Agricultural Biological Engineers](#)
- [American Society of Civil Engineers](#)
- [The American Society of Mechanical Engineers](#)
- [The Association of Technology, Management, and Applied Engineering](#)
- [Institute of Industrial and Systems Engineers](#)
- [Institute of Electric and Electronics Engineers \(IEEE\)](#)
- [National Society of Professional Engineers](#)
- [Society of Manufacturing Engineers](#)

Transportation Specific

- [American Trucking Associations](#)
- [Intermodal Association of North America](#)
- [International Warehouse Logistics Association](#)
- [Transportation Intermediaries Association](#)

Strategic Location and Access

The strategic location and robust transportation system in Yuma is once again a key competitive advantage for the Supply Chain and Processing industry cluster. The proximity to major markets, especially in the freight transportation industry is a necessity for a region to compete in business attraction. In addition, Yuma's proximity to the international border and the easy road, rail, and air access to major markets make Yuma a desirable destination for businesses operating in agriculture development. Stakeholders confirmed that the region has experienced recent success in leveraging its location and transportation system to grow the logistics, distribution, and warehousing sector.

Established Industry Foothold

The data analysis conducted in the Target Industry Cluster Analysis, paired with comments from key stakeholders in stakeholder engagement sessions confirm the existing industry foothold in both the manufacturing and agriculture industries. With an existing cluster of manufacturing operations, including emerging industry presence in aerospace, defense, and commercial space travel, machine shops will be in high demand in Yuma. This industry concentration and demand will be a key selling point to machine shops and engineering service firms. In addition, the agriculture industry in Yuma accounted for nearly \$35 million dollars in spending alone across the identified agricultural processing industries listed in the study.

Other considerations

- The region's supply of water
- Cross-border collaboration
- International pool of talent
- Suitable infrastructure
- Redundant power grid

Science, Energy, & Technology

Based on the analysis in the Target Industry Analysis, the project team has outlined a few key competitive advantages and key assets that should be included in all messaging for *Science, Energy, and Technology* business attraction campaigns and activities.

Trade Associations

Device Manufacturing

- [Semiconductor Industry Association](#)
- [Global Semiconductor Alliance](#)

Tech Services

- [Technology and Services Industry Association](#)
- [Service Industry Association](#)
- [Consumer Technology Association](#)
- [Association for Information Science and Technology](#)

A Robust Education, Employer, and Workforce Ecosystem

The Science, Energy, and Technology industry cluster requires a diverse pipeline of highly trained and highly skilled workers. From electrical and industrial engineers to computer systems analysts and customer service representatives, businesses in the identified target industry require an ecosystem of educators, training providers, workforce development professionals, and employers to cultivate the talent and labor required to succeed in these industries.

Thankfully, Yuma demonstrates a collaborative ecosystem that will be nimble and agile enough to meet the demands of employers in real-time. The Yuma Multiversity concept can be custom designed to fill that need, in partnership with the strong state university system and initiatives like the STEDY program and Arizona@Work system.

Upskilling Opportunities

Repeatedly in stakeholder sessions, the project team heard about the work ethic and the collective desire for new opportunities among the regional workforce. With established On-the-Job (OJT) and credentialing opportunities through the local workforce system, and a robust training and education ecosystem, a pipeline of potential technical talent is ripe for opportunity. Further, a committed and collaborative economic development ecosystem stands ready to help coordinate the economic development, workforce development, and business community to meet the diverse needs of potential employers in this target industry.

Other considerations

- Access (proximity) to customer and supplier markets
- Access (proximity) to, and quality of transportation, transportation systems
- Incentives
- Redundant power grid



Entertainment

Based on the analysis in the Target Industry Analysis, the project team has outlined a few key competitive advantages and key assets that should be included in all messaging for *Entertainment* business attraction campaigns and activities.

Trade Associations

Recreation

- [Master Brewers Association of the Americas](#)
- [American Society of Brewing Chemists](#)
- [Brewer's Association of America](#)
- [American Brewers Guild](#)
- [The Beer Institute](#)
- [Distilled Spirits Council of the United States](#)
- [American Craft Spirits Association](#)
- [American Distilling Institute](#)

Entertainment

- [International Association of Amusement Parks and Attractions](#)
- [Outdoor Amusement Business Association](#)
- [Themed Entertainment Association](#)
- [American Association of Zoos and Aquariums](#)
- [World Waterpark Association](#)

The Region's Water Supply

With 40% of the water rights on the Colorado River, Yuma is well positioned to leverage its water resources to attract breweries, distilleries, and water parks to meet demand in the region. That figure equates to over 45 million gallons of surplus water, a key component to the brewing and distilling process.

Quality of Life and Image of the Community

Through stakeholder engagement sessions, the project team learned of the critical mass of tourists visiting the region. Recognizing the number of visitors from Canada, military families and a bi-national population, paired with the quantitative analysis performed in the Target Industry Analysis, demonstrate a pent-up local demand for more entertainment and recreation options. New competitors in the entertainment cluster can capture that consumer demand, while simultaneously contributing to an already high-quality of life in the region. As an added bonus, the predictable and comfortable weather in the region will continue to increase the number of visitors seeking high quality and diverse entertainment and dining options.

Other Considerations

- East of access to transportation network
- Redundant power supply
- Cost of doing business
- Labor force quality, productivity, cost, and availability
- Bi-national population



Life Sciences

Based on the analysis in the Target Industry Analysis, the project team has outlined a few key competitive advantages and key assets that should be included in all messaging for *Life Sciences* business attraction campaigns and activities.

Trade Associations

Medical Manufacturing

- [Medical Device Manufacturers Association](#)
- [Advanced Medical Technology Association](#)
- [Association for the Advancement of Medical Instrumentation](#)
- [Association of Medical Diagnostics Manufacturers](#)

Research and Development

- [National Organization of Research Development Professionals](#)
- [The Association of Clinical Research Professionals](#)
- [Institute of Clinical Research](#)
- [Society for Clinical Trials](#)
- [Biotechnology Innovation Organization](#)
- [BioCentury](#)
- [R&D Coalition](#)

Availability of Light Manufacturing Space

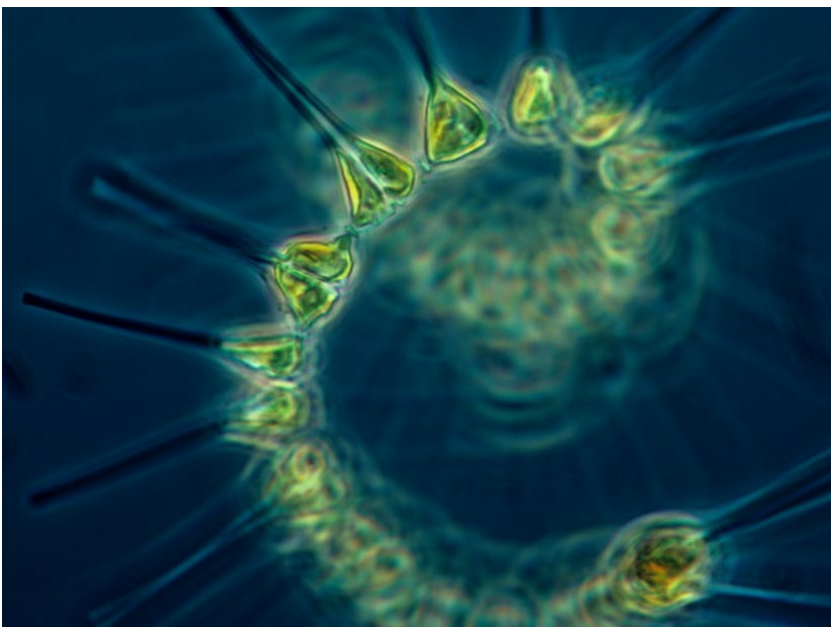
In stakeholder sessions, community leaders expressed their desire to maintain the integrity of land traditionally utilized for traditional agricultural industries. In addition, they expressed a desire to attract and cultivate businesses operating broadly in the technology industry. Like the technology sector, businesses within the Life Sciences industry cluster do not require a large physical plant. As such, economic development leaders are well positioned to develop, redevelop, and market commercial and industrial space suitable for operations within this target sector. Suitable space, near the military installations in the region, paired with the burgeoning strength in aerospace and commercial space travel industry will be attractive attributes for research and development firms within this sector.

A Robust Education, Employer, and Workforce Ecosystem

Once again, the impressive education, employer, and workforce training ecosystem should be a cornerstone of messaging tactics when attempting to attract firms within the Life Sciences industry cluster. Businesses operating within this cluster require a diverse workforce, with a diverse set of skills and the ecosystem in place can meet the demands of employers in an efficient and effective manner. Further, with the appropriate training providers in place across the region, workers have ample opportunity to acquire the necessary technical skills necessary to progress through career ladders typical of industries within the target sector.

Other Considerations

- Strong regional health network
- Existing industrial strength in adjacent and complimentary industries
- No natural weather disruptions
- Spaceport initiative
- Cross border collaboration



Yuma Marketing Strategy

Introduction

For budget purposes, the City of Yuma should review the following tactical approaches to business attraction marketing. The project team has outlined and organized the approaches into three categories: low cost-effective, medium cost-effective, and high cost-effective. Each strategy outlines several integrated tactics the Yuma team can take to proactively market the city to site selection consultants, trade associations, and business decision makers.

In addition, the project team encourages the City of Yuma to join the Site Selectors Guild to connect with site selection consultants in the identified target industries. The Site Selectors Guild is the only association of the world's foremost professional site selection consultants. Guild members provide location strategy to corporations across the globe and for every industry, sector and function. <https://siteselectorsguild.com/>

Low Cost-Effective Strategy

Approach	Tactic
Create Social Media Campaigns - The development of a social media toolkit with predefined messaging to push out informative content, updates, and general information on a regular basis through various communication channels.	<ul style="list-style-type: none">•Facebook•Instagram•Media Outlets•TikTok•Twitter
Develop Promotional Materials - Partner with other city agencies to craft Yuma's messaging on why the city is not only a great place to do business, but also a great place to live.	<ul style="list-style-type: none">•Economic development newsletters•Photos•Slide and video presentations•Brochures•Factbooks•City Websites
Generate Regional and National Buzz - Take full advantage of press to tell Yuma's unique story. Important media contacts are listed below.	<ul style="list-style-type: none">•Press kits,•Public official speeches•Press releases•Public relations

Medium Cost-Effective Strategy

Approach	Tactic
<p>Meet The Industry Where They Are - It is critical to have a designated team that is responsible for consistently networking and pitching Yuma as the "best of the best."</p>	<ul style="list-style-type: none"> •Trade fairs •Trade shows •Business envoys •Familiarization tours •Special Events •Conferences

High Cost-Effective Strategy

Approach	Tactic
<p>Utilize Traditional Advertising - Ads are an important tool to increase Yuma's brand visibility as it relates to the identified targeted industries.</p>	<ul style="list-style-type: none"> •Magazines •Public directories •Billboards •Broadcasts •Television •Radio •Commercials Industry journals such as: <ul style="list-style-type: none"> •Aerospace Manufacturing •Aerospace Manufacturing and Design •Aerospace AmericaAerotech News and Review •Progressive Farmer •Successful Farming •Farm Journal •Farm and Ranch Living •Modern Farmer •Top Producer •Medical Device and Diagnostics Industry •Medgadget •Mass Device •MedTech Intelligence
<p>Employ Direct Mail/ Email Outreach - this ensures that Yuma's messaging and important updates land in the hands of the targeted industries in a timely manner.</p>	<ul style="list-style-type: none"> •Electronic newsletters •Yuma event invitations •Announcements •Links to website for prospects •Letters •Postcards •Brochures

Key Media Contacts

Approach	Tactic
Arizona Republic/AZ Central	Wyatt Buchanan - Editor, State Issues wyatt.buchanan@gannett.com
Yuma Daily News	news@yumadailynews.com (928) 344-4980
Yuma Sun	newsroom@yumasun.com (928) 783-3333
<u>KMYA</u>	Ernesto Romero - News Director eromero@kyma.com
<u>ABC 15</u>	newsroom@abc15.com News Desk Phone: 602-685-6351
<u>FOX 10 Phoenix</u>	FoxPhoenixViewerNews@fox.com 602-262-5109
<u>KAWC</u>	news@kawc.org 928-344-7690
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<u>KBLU</u>	Jeff Edwards - Program Director
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USC Annenberg Media	Hanna Kang - Multimedia Journalist - Economics	mediacentereditors@gmail.com
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Region LMI Overview

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About the Region

ZIP Codes

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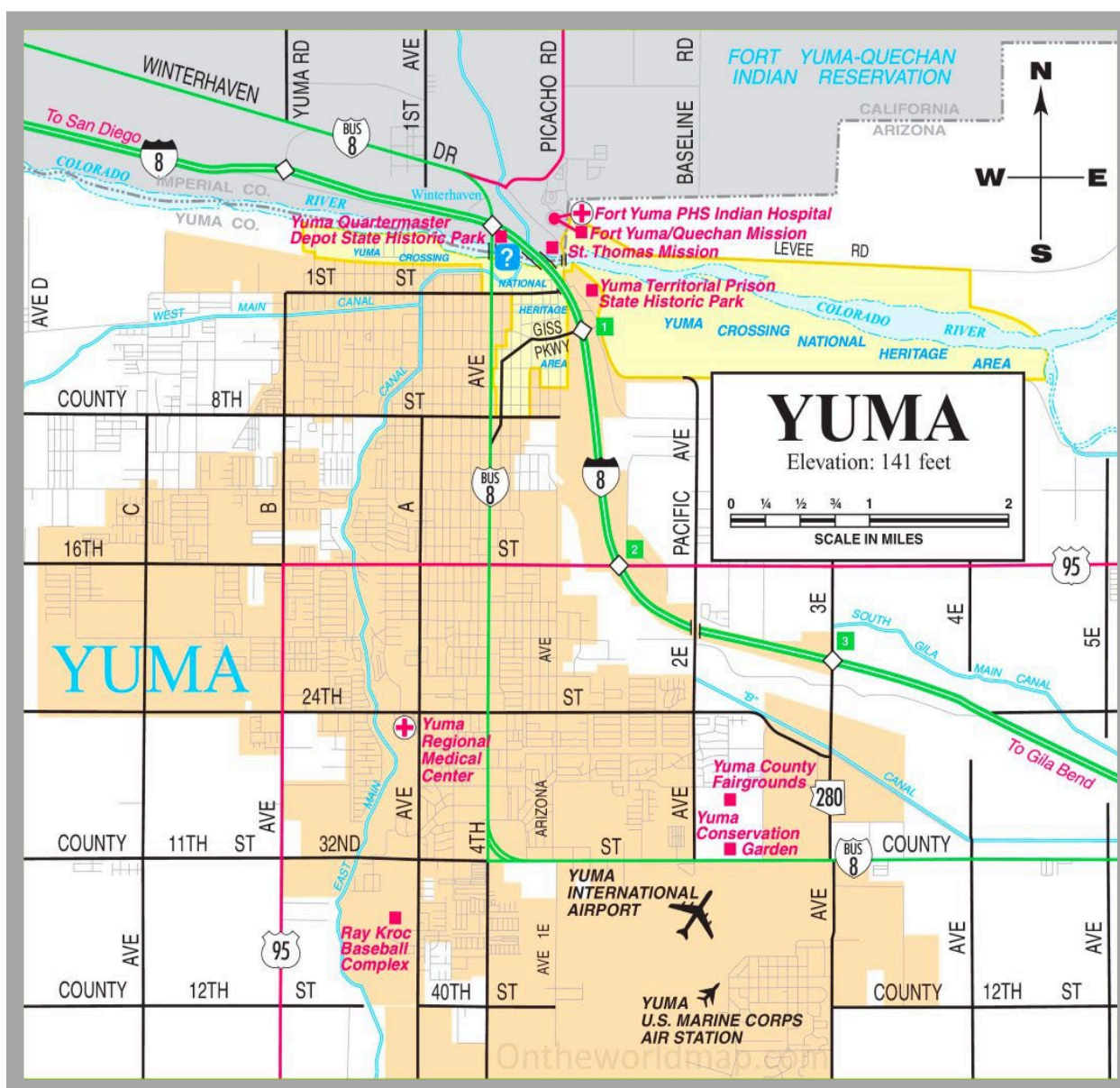
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The City of Yuma, located in southwest Arizona bordering both California and Mexico, is the County seat of Yuma County, Arizona and home to over 100,000 people. Yuma boasts many accolades, including "Sunniest City on Earth," according to Guinness World Records, as the City promises sunshine and warm weather at least 91% of the year. The sunshine provides light into several industries, specifically agriculture, as Yuma dominates the growth and production of leafy vegetables. Home to a Military Base, Yuma also has a unique set of industries that include Federal and State Government, as well as many manufacturing, logistics, and aerospace facilities.

While the City and County continue to grow, the importance of high-quality and high paying jobs is a top concern, as the City experiences typically lower wages than on average for the state and holds a slightly less educated workforce. The City Council has chosen three industries including: Advanced Manufacturing, Aerospace, and Food Processing as key industries to focus on in the 5-Year Strategic Plan.



Yuma is also a highly diverse City with several key assets that make it an exceedingly sought out place for not only residents, but employers. The importance for Yuma to capitalize on its current strengths while finding new opportunities to grow is key to improving the quality of life for the city.

The unique culture, geography, workforce, and industries in Yuma present ample opportunities for new growth in the region, along with the ability to compete on a national scale for the best companies and people.

Image Source: OnTheWorldMap, 2021

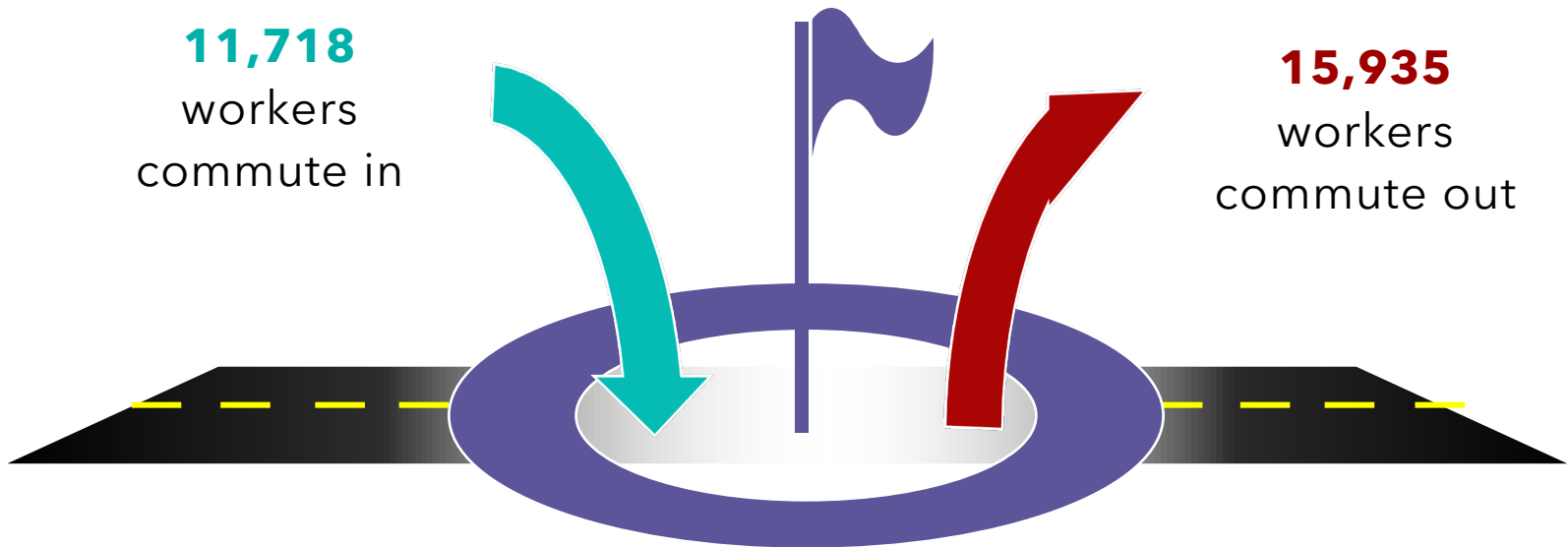
Commuting Patterns

Commuting patterns for Yuma County indicated that the region exports more workers than it imports. An underlining factor for this trend is the proximity to metropolitan Phoenix, where the majority of residents commuting outbound go. Compared to the County, the City of Yuma itself has a positive influx of workers, as more workers commuting into the city than commute out. The considerably large base of workers in the region and city indicate a healthy workforce that current businesses can pull from. A potential opportunity for the region would be to focus on the specific type of workers who commuting out, and see what strategies exist to keep them in the region for work. With the increase in work-from-home (WFH) job opportunities, commuting patterns are expected to change in the coming years across the nation.

54,187 live and work in the region

11,718 workers commute in

15,935 workers commute out



Net **loss** of 4,217 workers

Source: US Census Bureau, On the Map, 2019

County	Inbound Commuters	Outbound Commuters	Net Commuters
Maricopa County, AZ	4,744	8,372	(3,628)
Imperial County, CA	2,393	795	1,598
Pima County, AZ	1,059	1,515	(455)
Riverside County, CA	433	357	75
Pinal County, AZ	365	239	126
Yavapai County, AZ	223	261	(37)
La Paz County, AZ	151	222	(72)

Source: Emsi-Burning Glass, 2021.4

Commuting Continued

More information regarding commuting and working patterns for the county indicate exactly which cities workers are employed, as well as the typical distance traveled. As seen, close to 60% of workers in the region travel less than 10 miles for work and work within the City of Yuma. While Yuma County employs the largest number of workers, Maricopa County is the clear second option for working, mostly in part to the Phoenix MSA. These numbers indicate that Yuma has a strong hold on employment in their region, while also holding a unique opportunity to encourage other modes of transportation due to many employees not traveling far distances to work.

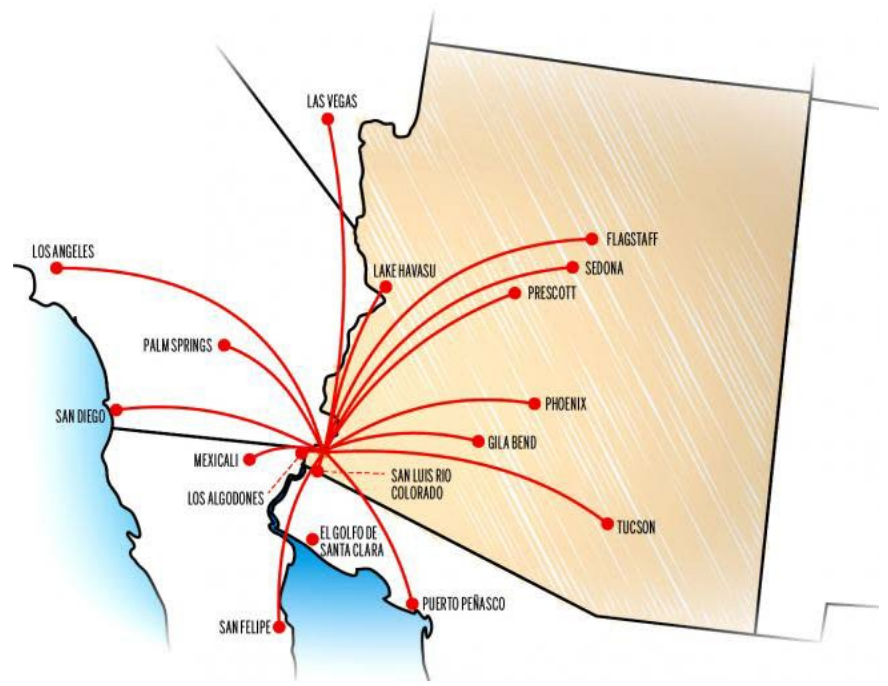
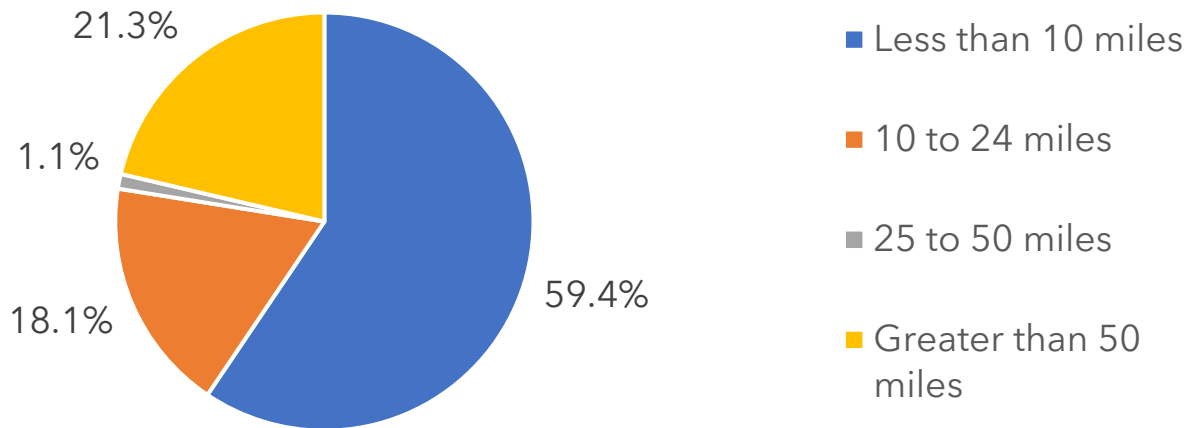


Image Source: City of Yuma, 2021

Work Location by Distance



Where Workers are Employed (City)		
Location	Count	Share
Yuma city, AZ	21,705	60.9%
Phoenix city, AZ	1,963	5.5%
San Luis city, AZ	967	2.7%
Somerton city, AZ	857	2.4%
Fortuna Foothills CDP, AZ	587	1.6%
Tucson city, AZ	495	1.4%
Tempe city, AZ	376	1.1%
Scottsdale city, AZ	328	0.9%
Mesa city, AZ	247	0.7%
Glendale city, AZ	230	0.6%
All Other Locations	7,868	22.1%

Where Workers are Employed (County)		
Location	Count	Share
Yuma County, AZ	54,187	77.3%
Maricopa County, AZ	8,842	12.6%
Imperial County, CA	1,449	2.1%
Pima County, AZ	1,361	1.9%
Monterey County, CA	343	0.5%
Riverside County, CA	337	0.5%
Yavapai County, AZ	319	0.5%
Mohave County, AZ	279	0.4%
Los Angeles County, CA	275	0.4%
La Paz County, AZ	269	0.4%
All Other Locations	2,461	3.5%

Source: US Census Bureau, On the Map, 2019

Demographics

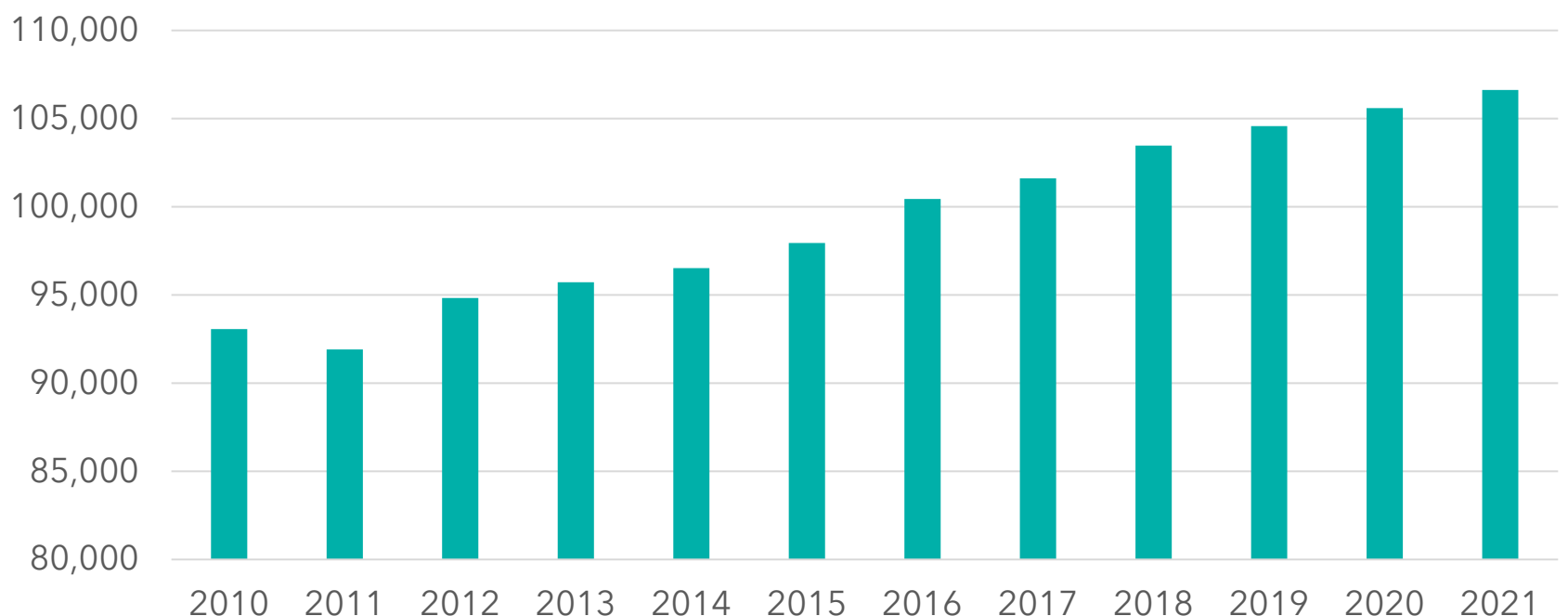
The City of Yuma continues to see population growth and sits over 100,000 people. The following section explores how and where the region's population is growing and the characteristics of the population, both now and as projected moving forward.

Population

With a 2021 projected population of 106,629, the City of Yuma represents roughly 50% of the total population of Yuma County. Population in the region has increased overtime, with the region posting a 13% increase in the past 10 years, a rate above the national average and just 1% less than the state of Arizona. Population growth is projected to continue moving forward in the region, with both a 5% increase in 5 years, and a projected 11% increase in 10 years. These growth percentages would follow closely with projected state averages and remain well above the national averages. While growth percentages have been higher in cities close to Yuma, the low population for each of these cities explains the rather substantial percentages listed.

Area	2021 Population	2010-2021 % Change	5-YR Projected Growth %	10-YR Projected Growth %
Yuma, AZ	106,629	13%	5%	11%
Yuma County	207,318	6%	5%	9%
San Luis, AZ	40,922	54%	19%	37%
Somerton, AZ	18,562	27%	11%	24%
Wellton, AZ	3,416	16%	11%	21%
Arizona	7,285,370	14%	7%	13%

City of Yuma Population

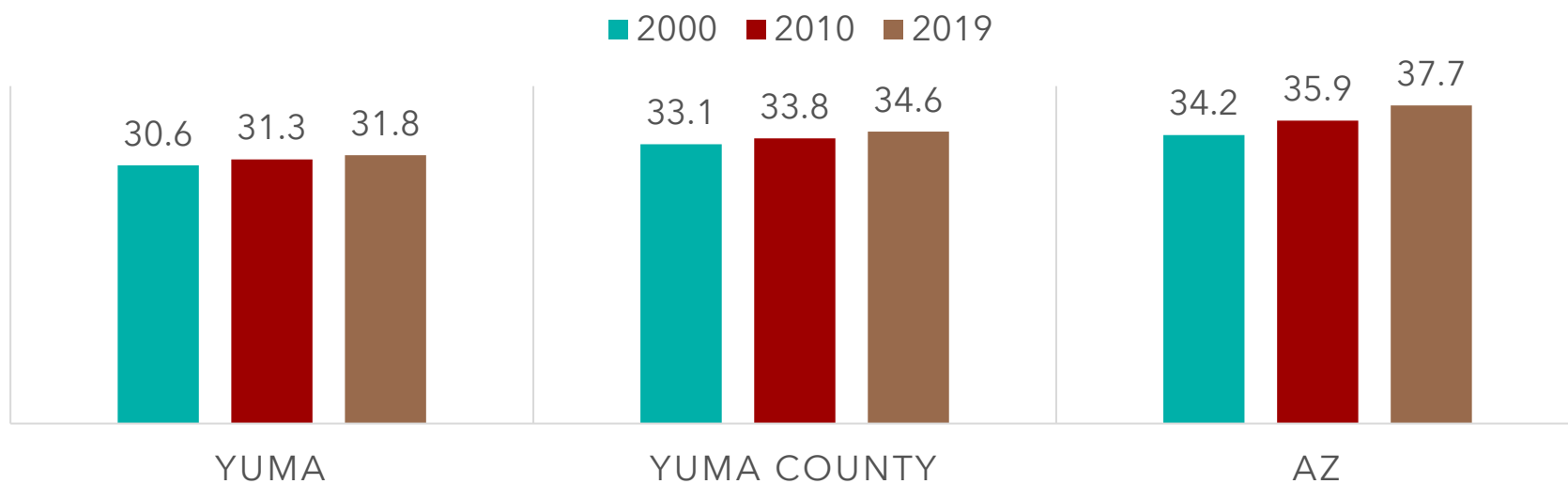


Source: AZ OEO, ACS 2019 5-Year

Age Distribution

The City of Yuma has a significantly lower median age (in years) than the state's median age of 37.7 years. The relatively low increase in median age compared to the state over the past 20 years seems to indicate that there is a continuing trend of in-migration of the younger working age persons. Another possible explanation is out migration of older populations or the City experiences higher birth rates than that of the state. For the state of Arizona, the comfortable summer climate, potential lower cost of living, and close proximity to several major urban areas are attractive to many older persons.

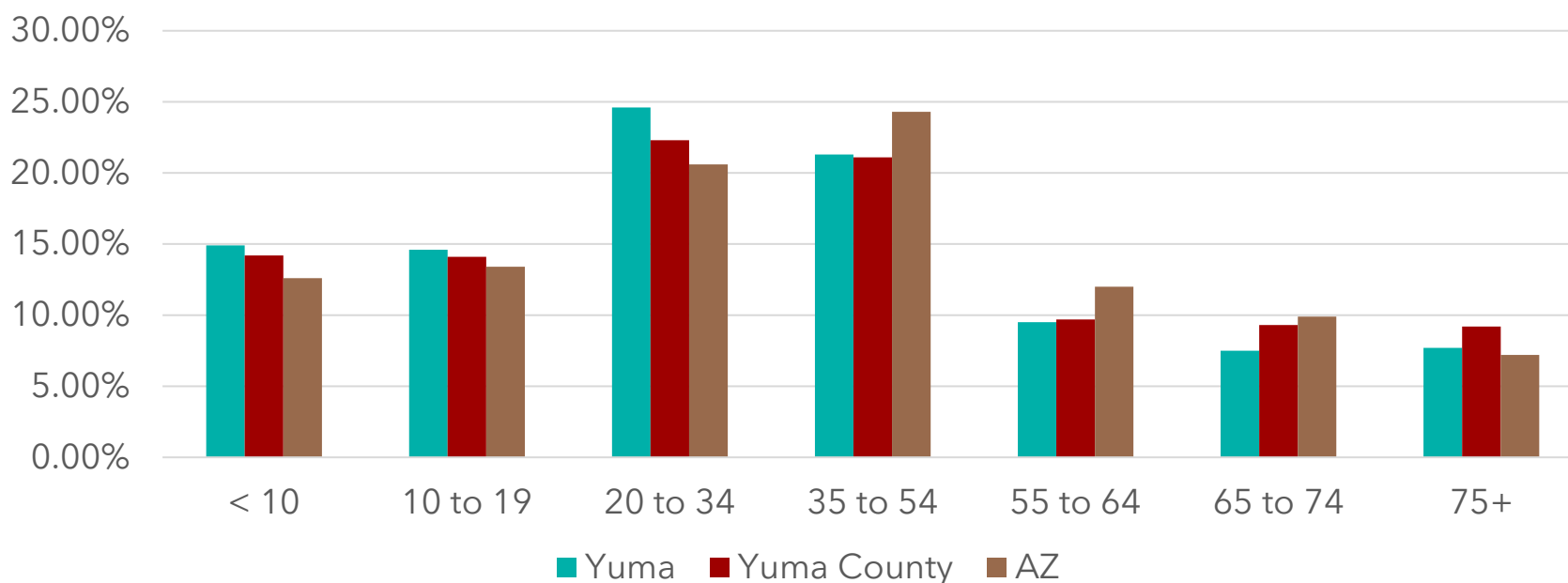
MEDIAN AGE 2000 - 2019



Source: AZ OEO, ACS 2019 5-Year

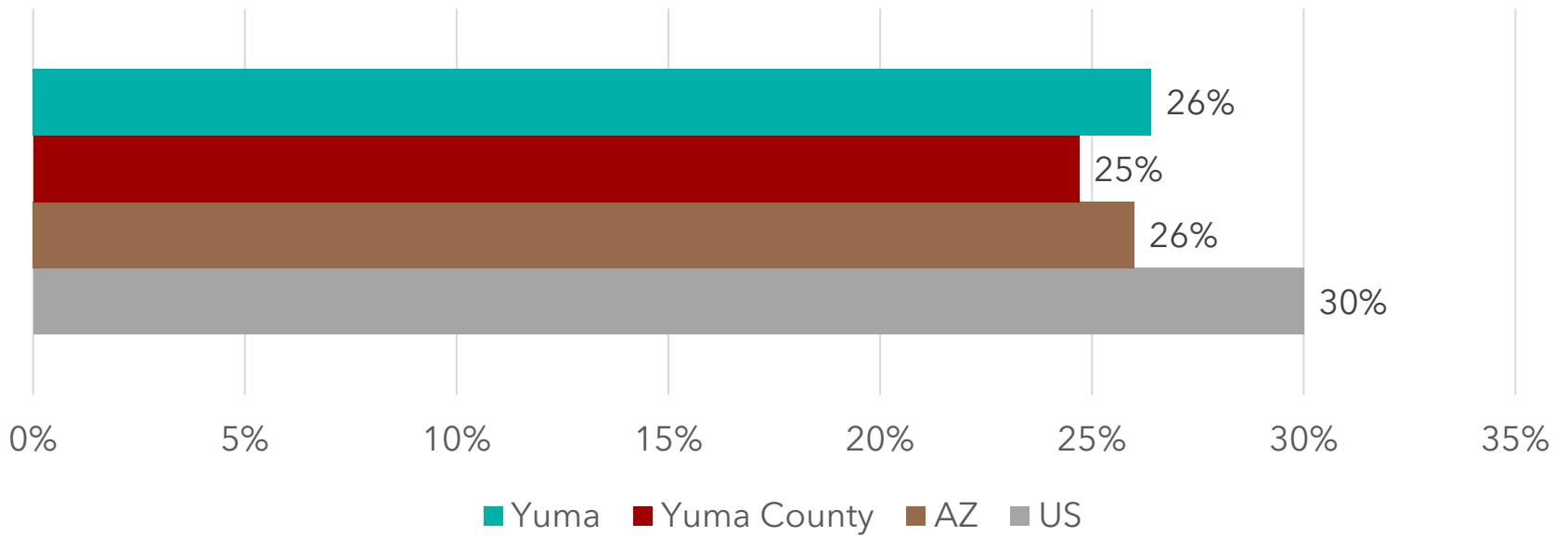
Age distributions shown below indicate the City of Yuma differs greatly in terms of percent of population by age group compared to the state. The 20 to 34 age group, is the largest group for the City of Yuma in terms of percent of population (roughly a quarter or 25%). This is almost 5% higher than the state average for this age group. Conversely, those ages 35 to 54, are in relatively low supply compared to the state. While this could present consequences in terms of needed labor force, as seen on the next page the City has an equal percentage of "Young Professionals" (those ages 25-44) compared to the state. Somewhat expectedly, the City of Yuma has a slightly younger demographic than Yuma County. Younger populations tend to live in more urban areas, compared to more rural areas throughout the county.

Age Distribution



Source: Maricopa Association of Governments (MAG), ACS 2019 5-Year

Percent of Young Professionals (25-44)

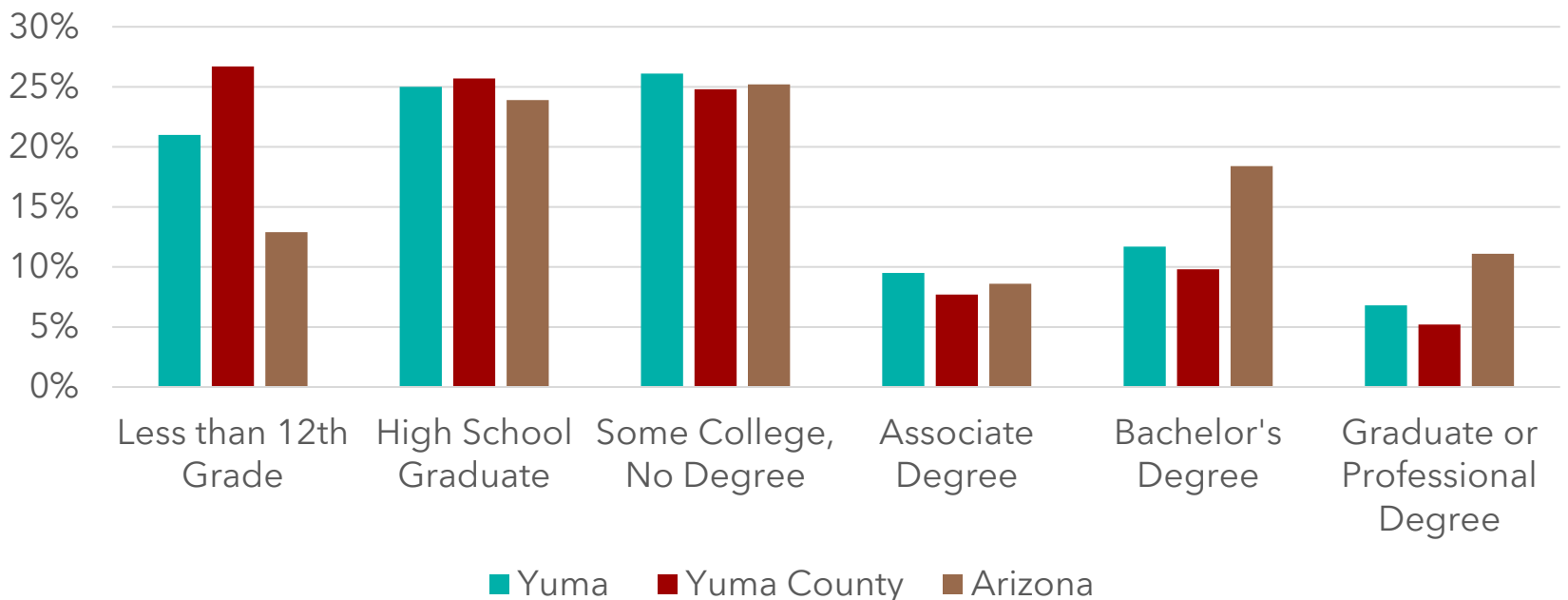


Educational Attainment

The City of Yuma and Yuma County fall well below educational attainment levels compared to the state for advanced degrees. The city has roughly 8% less of the population with a bachelor's degree compared to the state average and less than 5% with a graduate or professional degree. One measure the City excels in is English proficiency. While having close to 20% more of its population speak another language than English than the state, the City has less people who are considered LEP compared to state averages. That said, the County as a whole has significantly higher percentage of those considered LEP than to the state.

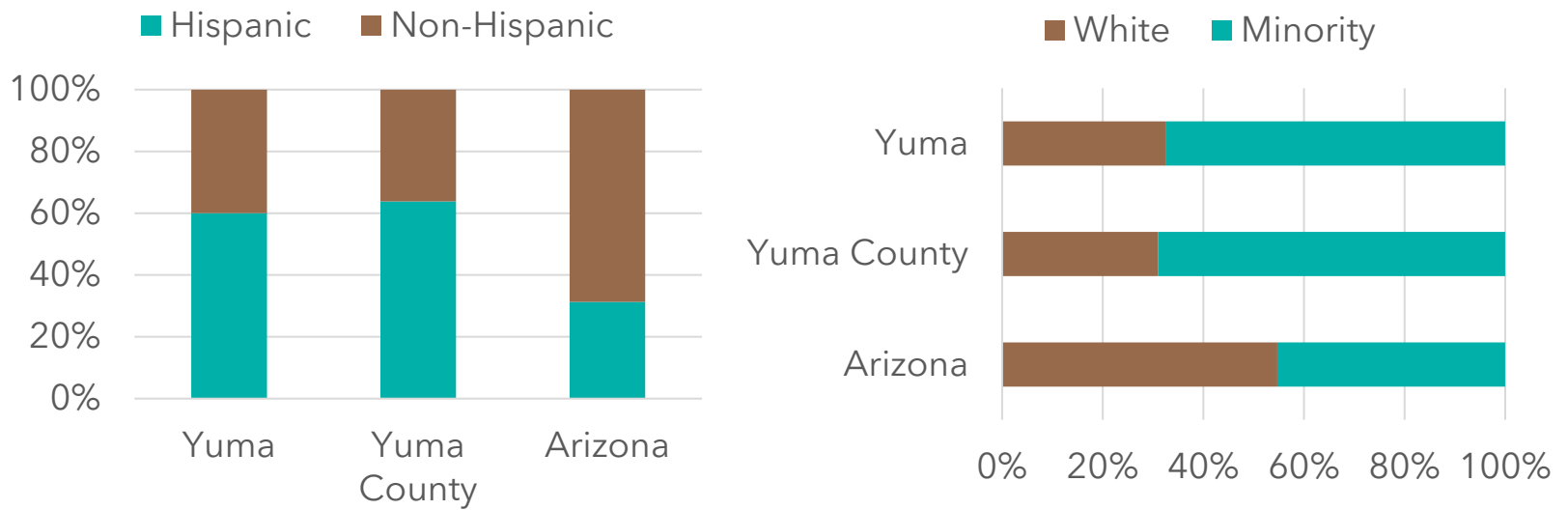
Ability to Speak English	Yuma	Yuma County	Arizona
Speaks Only English	53%	47%	73%
Speaks Other Languages:	47%	53%	27%
Speaks English "very well"	70%	62%	68%
Persons with Limited English Proficiency (LEP)	30%	38%	32%

Educational Attainment for those 25+



Race/Ethnicity

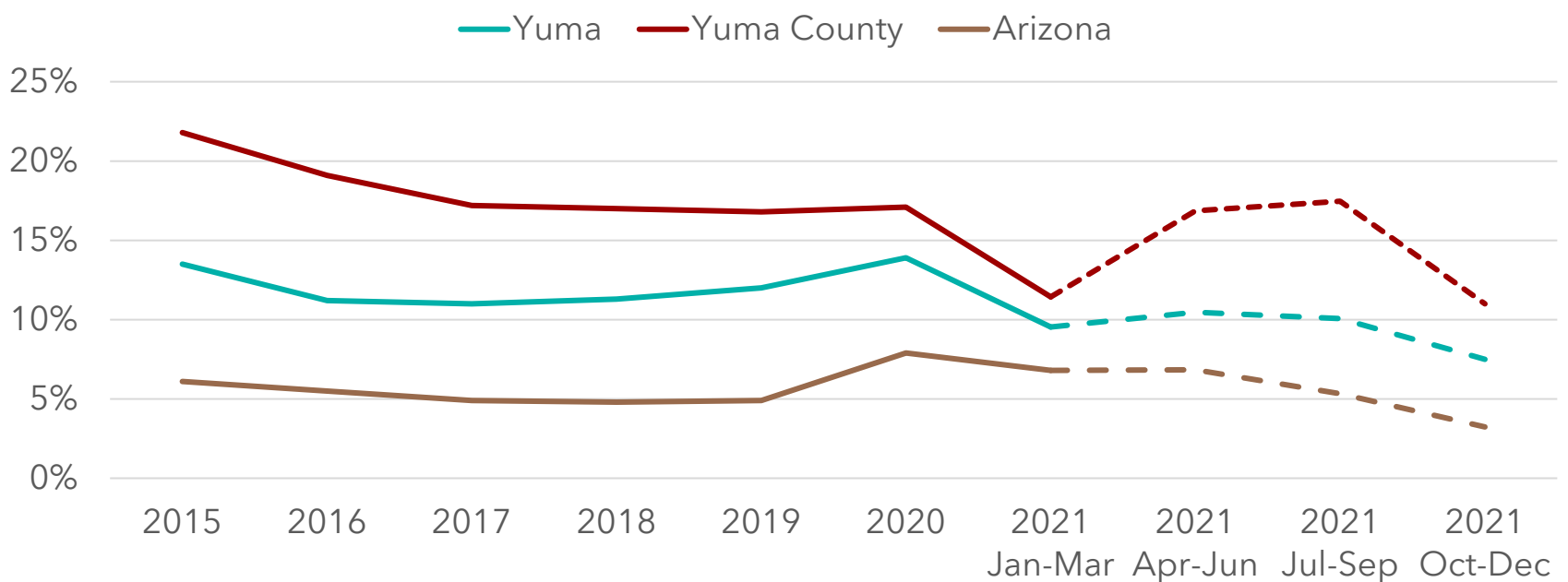
Both the City and County of Yuma are extremely diverse areas and have considerably more Hispanic and People of Color (POC) populations. With roughly 60% of residents identifying as Hispanic, the City nearly doubles the average Hispanic population compared to the state. Similarly, the City and County have significantly higher percentages of those identifying as a POC compared to the state, underlying a unique opportunity for the region to capitalize on its diverse and unique workforce.



Race and Ethnicity	Yuma	Yuma County	Arizona
White	32.60%	31.00%	54.70%
Black	2.70%	1.70%	4.20%
Native American	0.90%	0.90%	3.90%
Asian	2.00%	1.20%	3.20%
Two or More/Other	1.90%	1.50%	2.50%

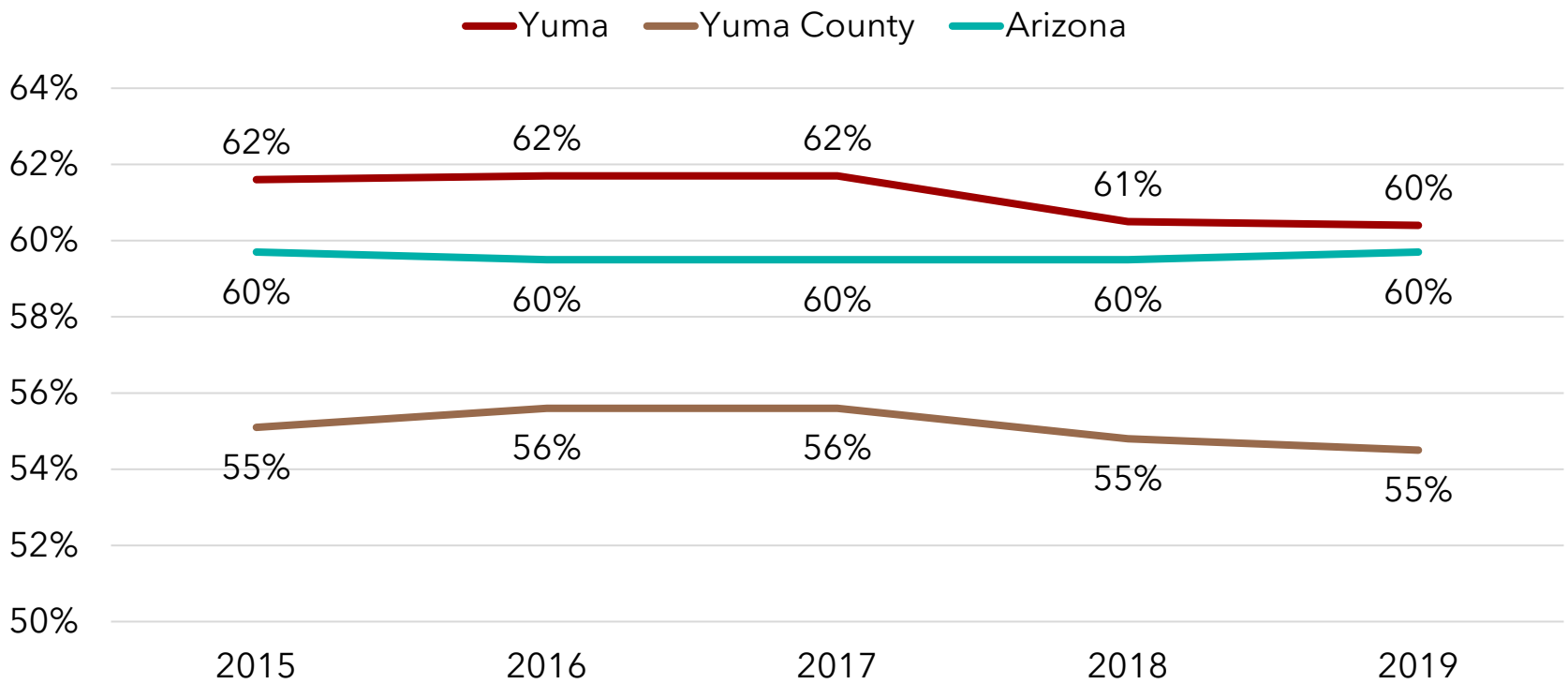
Unemployment

Historically both the City and County have experienced higher rates of unemployment compared to the state. Having a large agricultural industry in the area presents unemployment challenges with the seasonal nature of the work. That said, after unemployment spiked in 2020 due to the COVID19 Pandemic, unemployment has returned to pre-pandemic levels and are at record lows for the region.



Labor Force

The labor force participation rate has slightly decline in the City of Yuma, following national trends. That said, rates in the City sit closely with the state. Yuma County has considerably lower participation rates. As mentioned previously, the impact of the large agricultural workforce can impact participation and unemployment percentages. While the labor force participation rate can be impacted by several variables, it remains important measure as it represents the relative amount of labor resources available for the production of goods and services in the region.



Source: Maricopa Association of Governments (MAG), ACS 2019 5-Year

Poverty and Income

Median Household Income (MHI) is roughly \$10,000 less than the state average for both the City of Yuma and Yuma County residents . Further, poverty levels in the region are higher than state averages along with families with incomes below the poverty level. Earnings and wages considerably impact poverty percentages, but cost of living and quality of life characteristics can also increase burdens on families experiencing poverty. A holistic approach to addressing poverty is needed in order to make a true impact in the region.

Poverty/Income Statistic	Yuma	Yuma County	Arizona
Median Household Income (2019)	\$47,998	\$45,243	\$58,945
Persons with income below poverty level	18.30%	19.40%	15.10%
Families with income below poverty level	16.60%	16.80%	10.80%

Source: AZ OEO, ACS 2019 5-Year

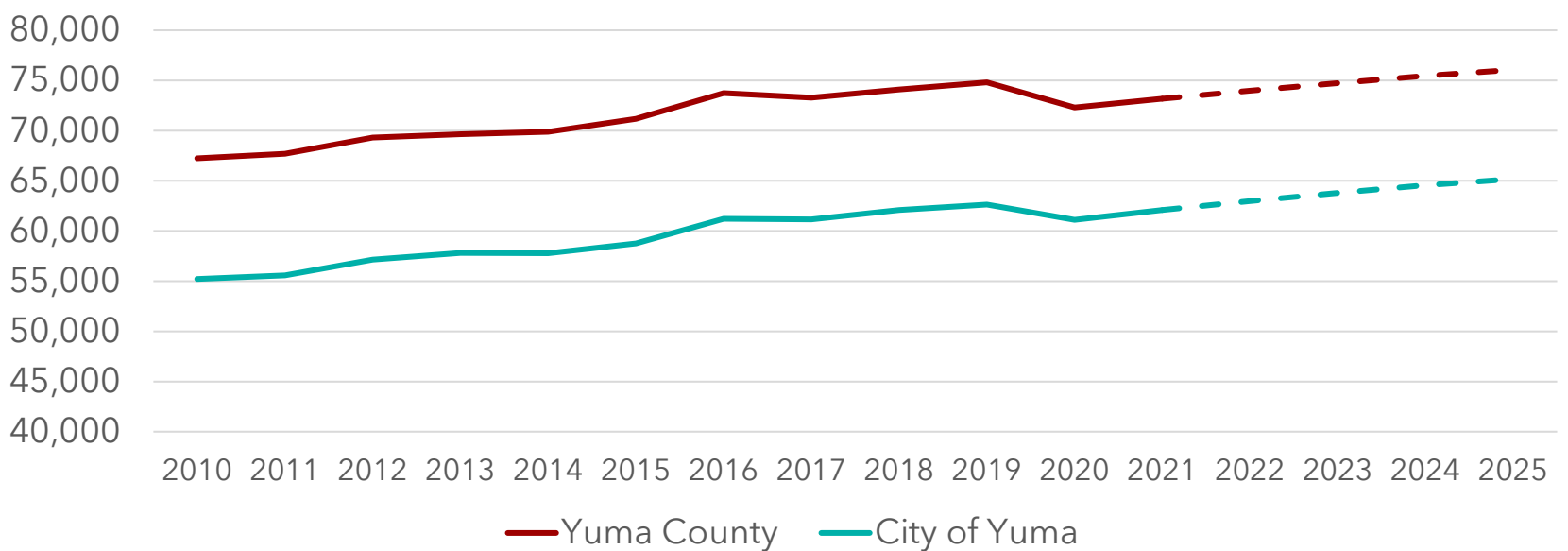
Industry

Industry information can provide important insights that help describe the health and vitality of the surrounding community and region. The information can also be used to identify potential opportunities for growth in industry concentrations and explore regional business strengths. The City of Yuma has several specialized and growing industries. The Industry Analysis section highlights sector growth in the region, including characteristics such as employment size, earnings, location quotient (LQ), and diversity representation. Industries are analyzed at both the 2-Digit and 6-Digit North American Industry Classification System (NAICS) level.

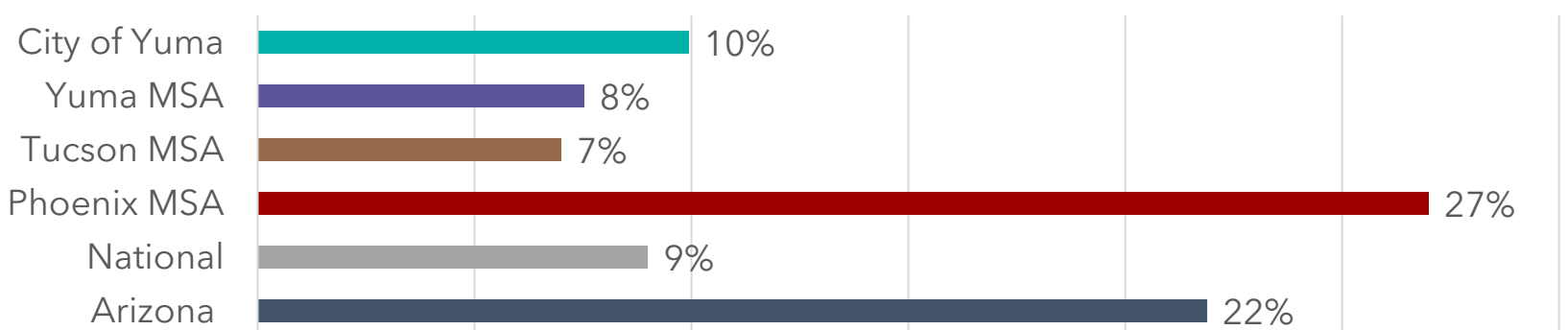
Employment

Employment in the region continues to grow year after year. Employment peaked both for the city and county in 2019 after dipping dramatically in 2020 due to the COVID-19 pandemic. Although the dip in employment erased years of growth, employment has bounced back in 2021 and is projected to continue to increase moving forward. By late 2022 employment reaches pre-pandemic numbers, a testament to the region's resiliency and strength of economy. As seen at the bottom of the page, the region has experienced considerable employment growth the past decade, outperforming both the Tucson MSA and national growth percentages. That said, the state of Arizona is booming in terms of employment, and the Phoenix MSA is growing at a rate significantly higher than any MSA shown.

Total Employment 2010 - 2025



Employment Growth % 2010 - 2020



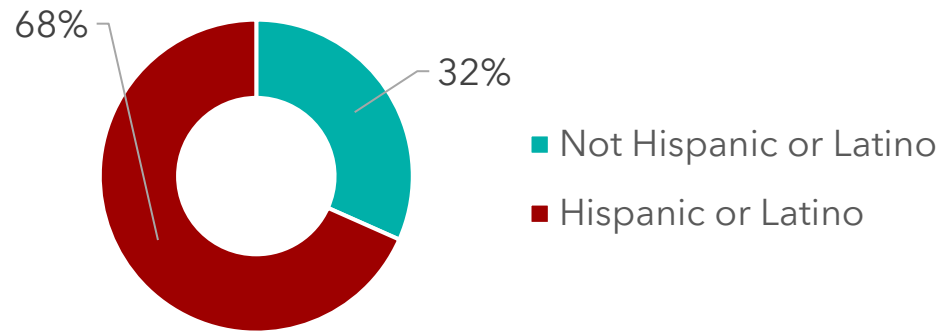
Work Area Profile

The following statistics are analyzed from the perspective of current workers that are employed in the region, not necessarily those residents living in Yuma. That said, statistics for each perspective closely mirror another and have relatively little difference.

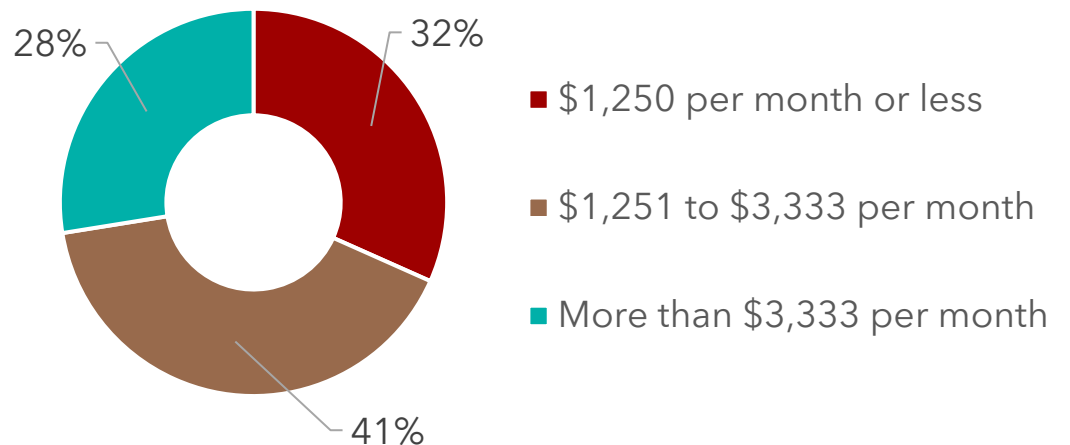
As seen, close to 70% of all workers in the region identify as Hispanic or Latino. With the region having close to 60% Hispanic or Latino representation, we can infer that many people who identify as Hispanic or Latino commute into the region for work. Further, workers in the region are split relatively equal by pay, as the greatest number of workers earn \$1,251 to \$3,333 per month. Earnings by industry and occupation differ greatly, as seen in detail in the next pages.

The greatest number of employees who work in the region have less than a high school education at 30% of the worker population. Some college or Associate Degree is the second highest represented attainment at 19%, followed closely by High school equivalent with 18%. No attainment data available consisted of 23% of all workers. The importance of pushing for higher educational attainment rates for workers in the region cannot go unstated, as this can impact what industries and employers come to the region, and what kind of jobs they bring in.

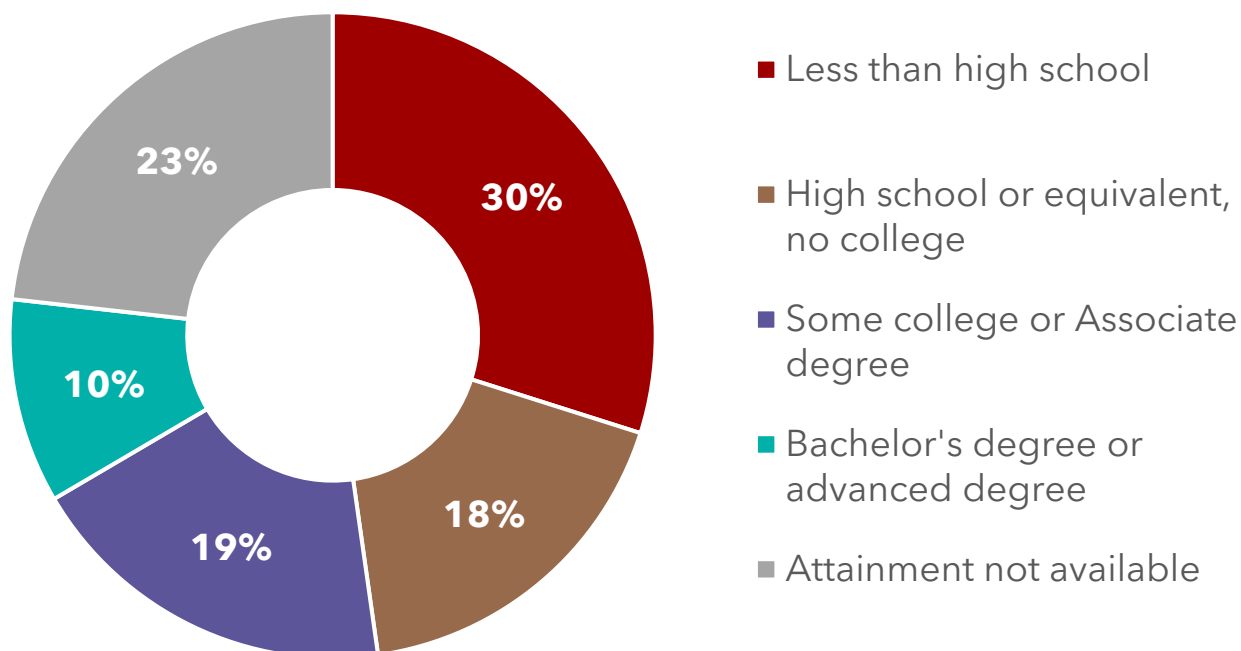
County Jobs by Worker Ethnicity



County Jobs by Worker Pay



County Jobs by Worker Educational Attainment



Sector Employment

The Government sector (including Federal, State, Local, and Educational positions), is the largest sector in the City of Wheeling in terms of total employment with 15,486 jobs in 2020. The Retail Trade sector, followed by Health Care and Social Assistance, make up the top three largest sectors. The Agriculture, Forestry, Fishing, and Hunting sector also represents a large portion of jobs for the city. Listed in the chart is the scaled national average of jobs for each sector. As seen, the region holds significantly more Agriculture, Forestry, Fishing, and Hunting jobs than the national average, as well as having a strong concentration in Government jobs. Also seen is the total jobs for each sector in Yuma County. As seen, the City of Yuma holds a majority of jobs in the region for several sectors. The top five sectors account for over 68% of the regions total jobs. A detailed chart for each sector showing jobs, job growth, wages, and location quotient can be found in the Appendix.

Regional 2020 Employment by Sector



Source: Emsi-Burning Glass, 2022.1

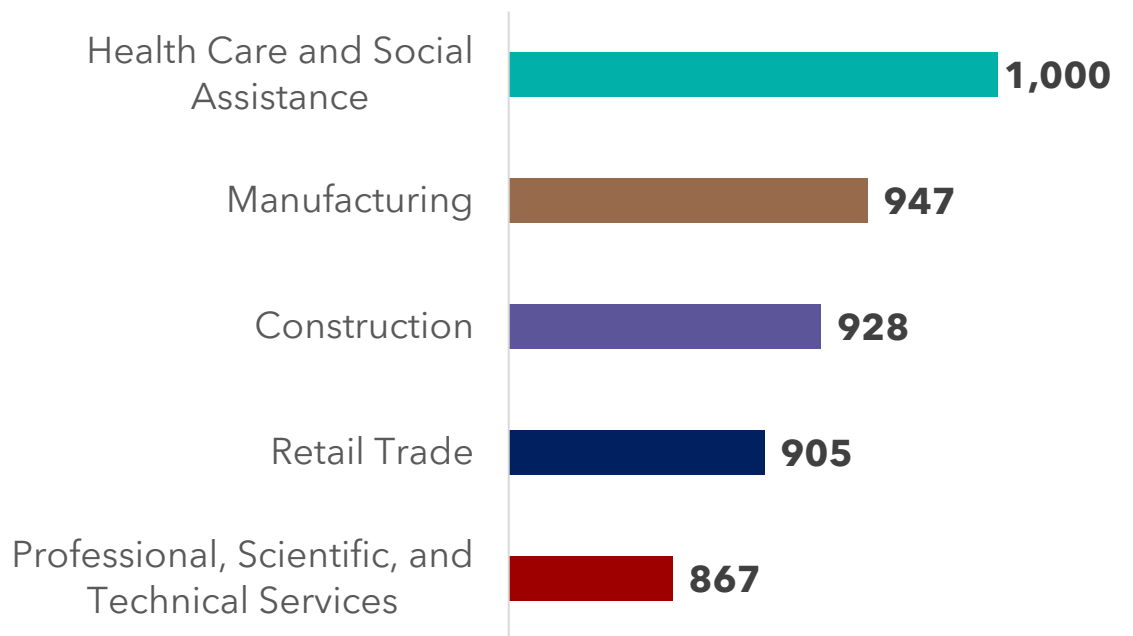
Top Sectors

The top five sectors by growth (2010 - 2020), average annual earnings, and location quotient are listed. The Health Care and Social Assistance sector has had the most growth in terms of jobs in the last 10 years, followed closely by the Manufacturing, Construction, and Retail Trade sectors. These five sectors combined accounted for over x% of all job growth over this time period.

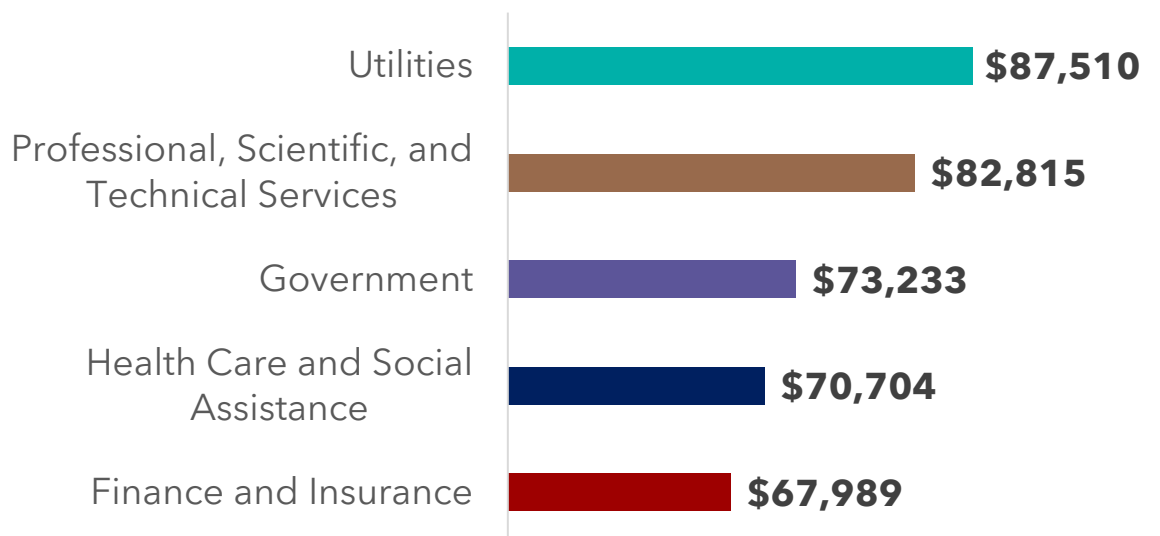
The Utilities sector has the highest average annual earnings with close to \$90,000 per job, more than \$20,000 higher than average earnings for the region. Two of the highest paying sectors are also two of the fastest growing, indicating a potential opportunity for the region.

Finally, the Agriculture, Forestry, Fishing, and Hunting sector is by far the most specialized and concentrated within the region. The Location Quotient (LQ) serves as a means to compare the share of a region or locality's concentration of particular industry sectors with that of a larger entity. That said, with a LQ of 11.20, employment concentration within the City of Yuma for this sector is 11.3 times the share of employment in the nation. The next four highest sectors all had a LQ above 1, but no sector came close to this level of concentration.

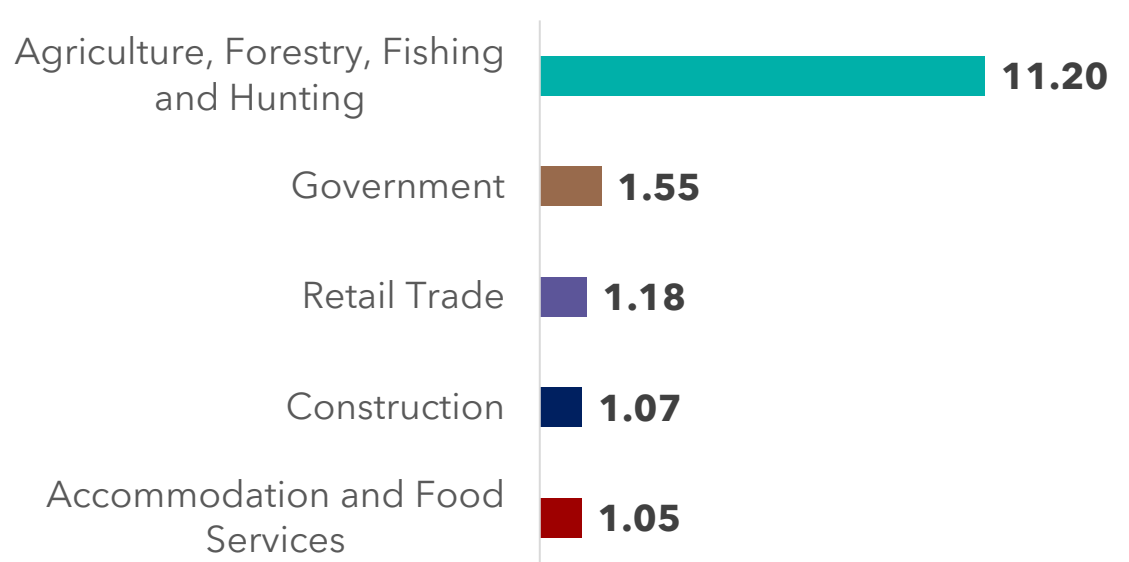
Top Sectors by Job Growth in Past 10 Years



Top Sectors by Average Annual Earnings



Top Sectors by Location Quotient

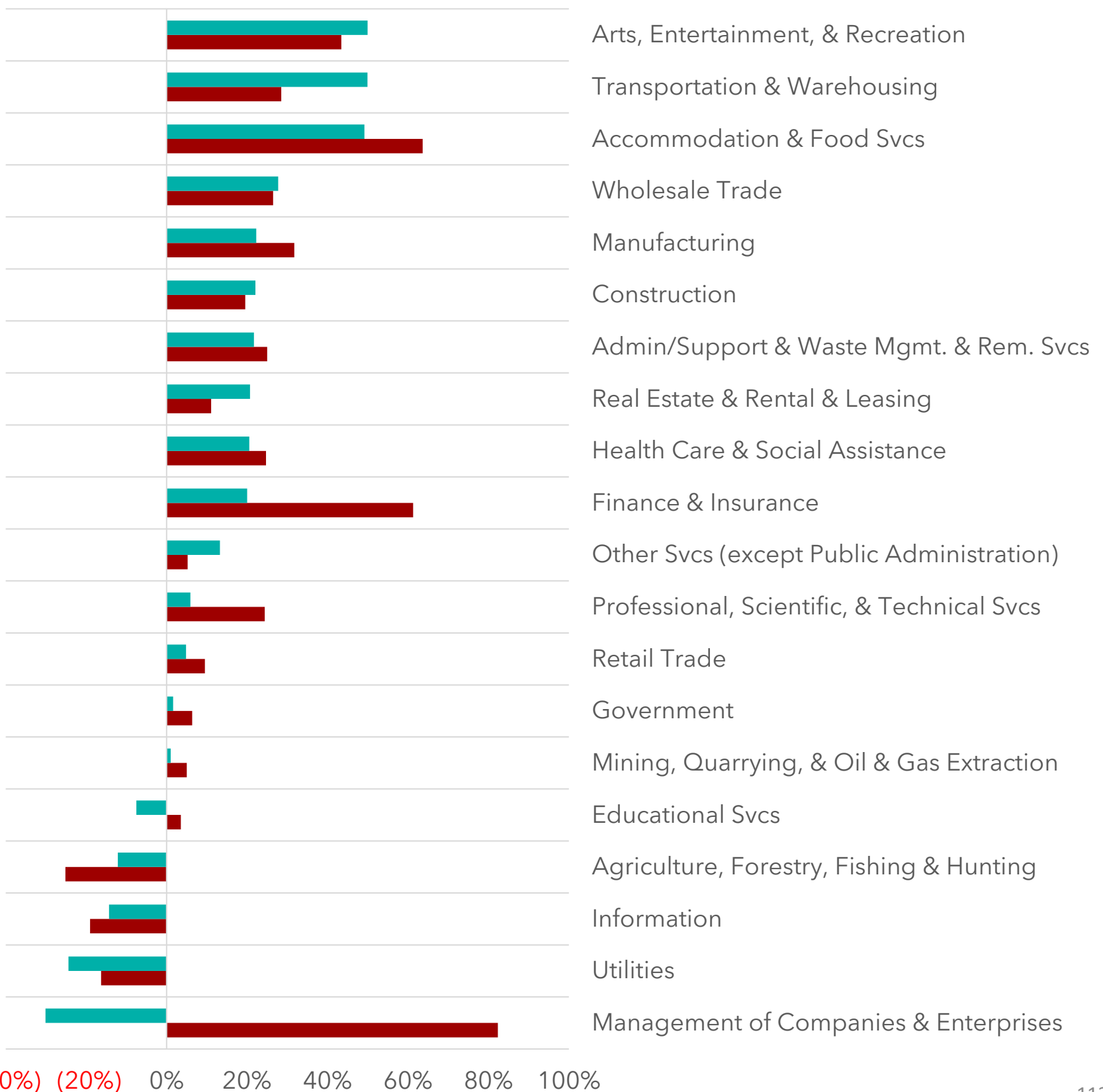


Source: Emsi-Burning Glass, 2022.1

Industry Sector Growth

Projected job change in the next 10 years for industry sectors in the City of Yuma can be seen below. Additionally, Arizona’s average projected growth for each sector is also listed for comparison. As seen, the region is expected to see large employment growth (over 20%) in ten sectors. All ten sectors are projected for growth within the state as well. Five sectors are projected for employment decline, three of the five sectors are also expected to decline throughout the state. The Management of Companies and Enterprises has the largest negative growth difference for any sector for Yuma and Arizona. This sector is projected to decline by 30% in the next 10 years for Yuma, while it is projected to grow by over 80% on average throughout the state. The Transportation and Warehousing sector has the largest positive growth difference of any sector, as Yuma is expected to see a 50% increase in employment over the next 10 years compared to just 28% in the state.

Projected Industry Growth by Sector (2020 - 2030)



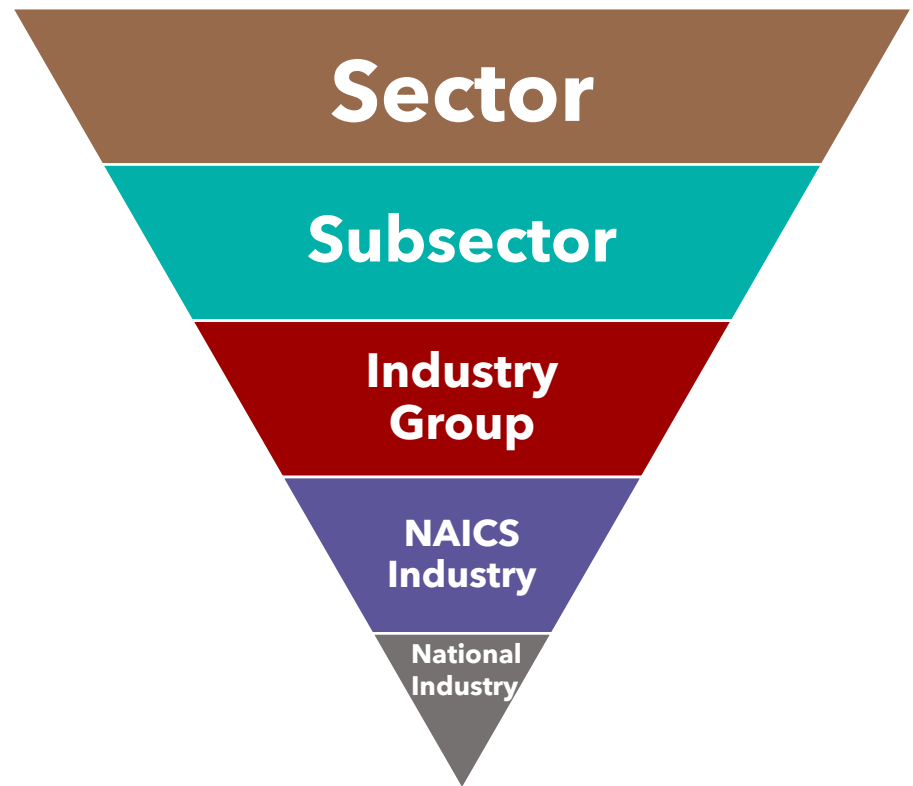
(40%) (20%) 0% 20% 40% 60% 80% 100%

■ Yuma ■ AZ

Top Industry Groups

Below are the top Industry Groups (3-Digit) in the region by total employment. As seen, Government, Agriculture, and Healthcare industries are well represented. The average annual earnings as well as the location quotient for each of the top industry groups are also shown. The Support Activities for Agriculture and Forestry industry has by far the largest location quotient at 27.64, while the Hospitals industry has the highest overall average earnings at \$95,257 per year.

Please see the appendix for a complete table of top Industry Groups in the region. The appendix also highlights the top Subsectors, NAICS Industry, and National Industries in specific detail.



Local Government

8,974 Jobs
\$61,579 / job
1.29 LQ



Federal Government

8,350 Jobs
\$85,151 / job
3.41 LQ



Support Activities for Agriculture & Forestry

7,647 Jobs
\$44,184 / job
27.64 LQ



Administrative & Support Services

4,956 Jobs
\$35,171 / job
1.11 LQ



Food Services & Drinking Places

4,766 Jobs
\$25,162 / job
0.97 LQ



Crop Production

3,871 Jobs
\$57,977 / job
9.68 LQ



Ambulatory Health Care Services

2,921 Jobs
\$65,045 / job
0.75 LQ



Professional, Scientific, & Technical Services

2,799 Jobs
\$79,832 / job
0.53 LQ



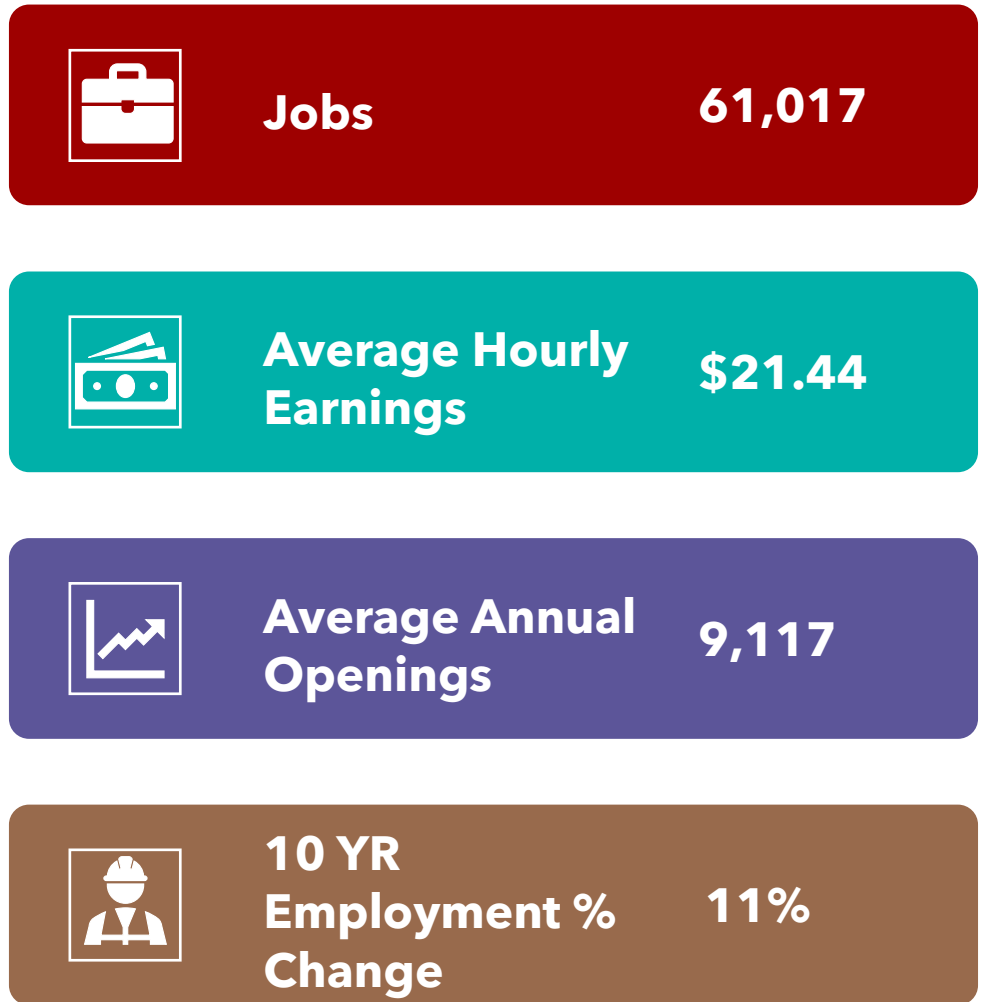
Hospitals

2,702 Jobs
\$95,257 / job
1.07 LQ

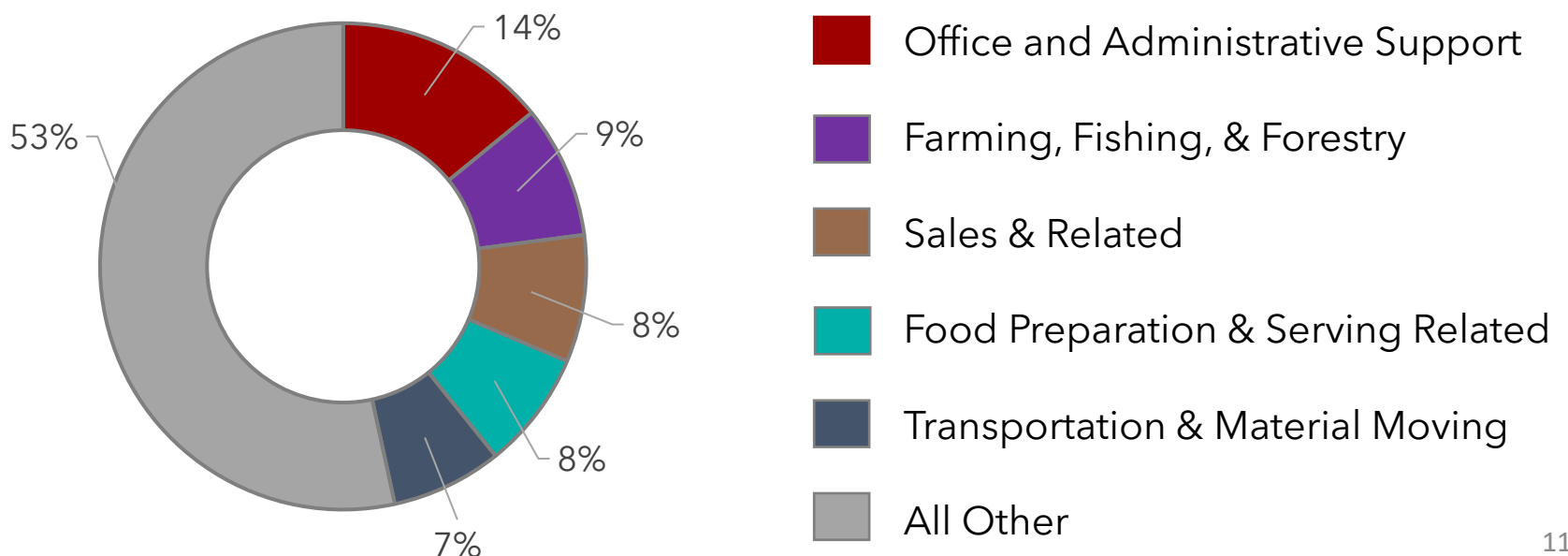


Occupation

In 2020, the City of Yuma had approximately 61,000 jobs, paying an average median hourly rate of \$21.44. In the last 10 years, the number of jobs has grown by roughly 11%, adding over 6,000 new opportunities. Office and Administrative Support occupations is the most common in the region, accounting for more than 14% of jobs in 2020. Farming, Fishing, and Forestry occupations are the second largest occupation group, followed by Sales and Related occupations. All of the top occupation groups listed pay less than the average hourly earnings in the region, while only Farming, Fishing, and & Forestry occupations decreased in employment the last 10 years.



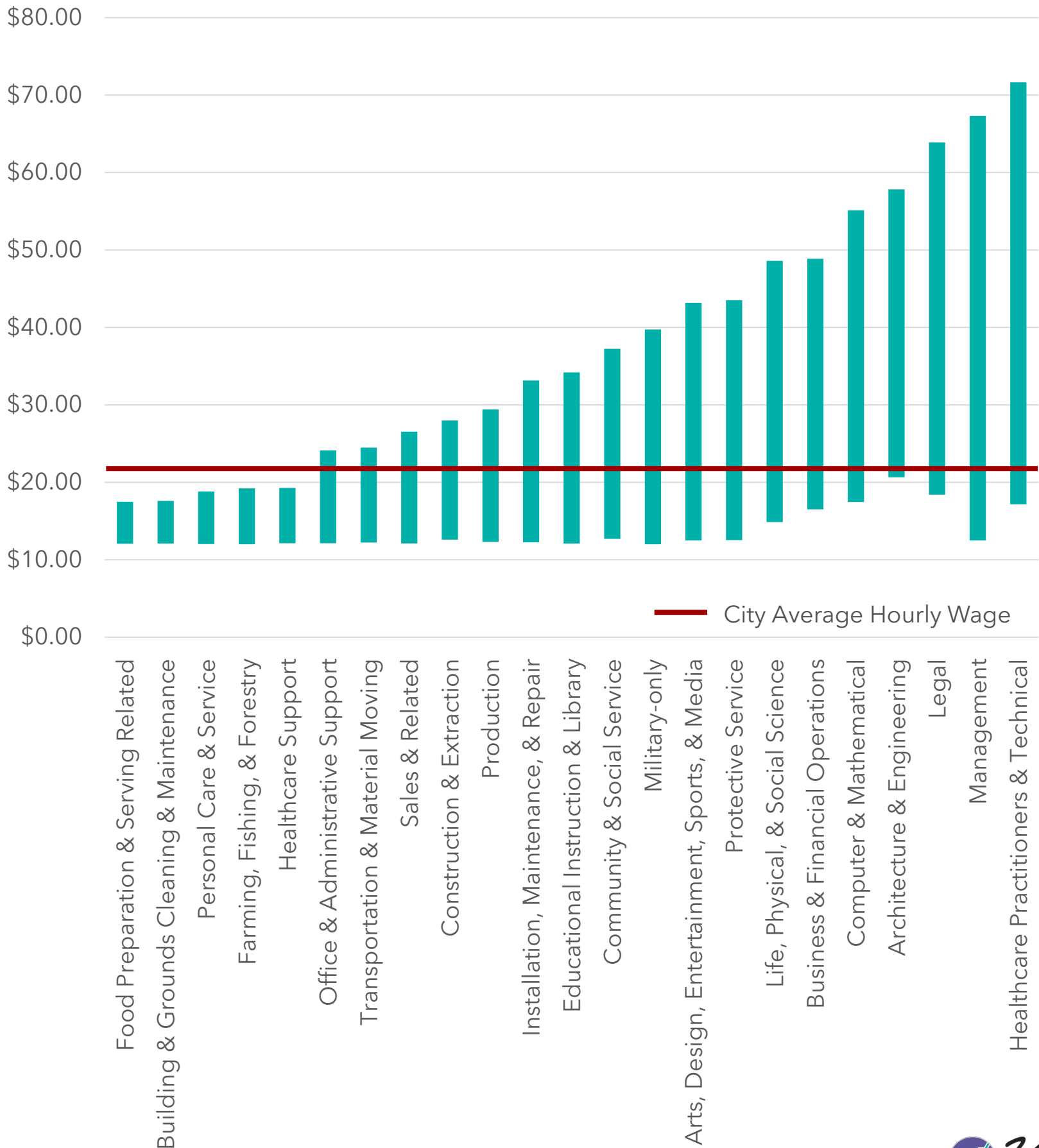
Top Occupation Groups

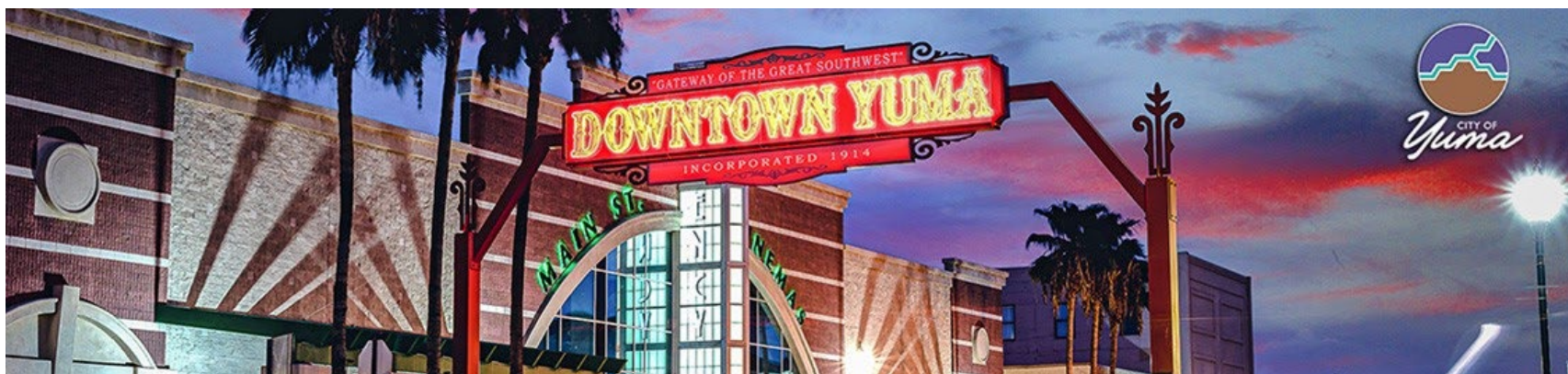


Wages

The average hourly earnings per job in the City of Yuma is \$21.44. The lower 25th percentile of earners make \$14.32, while the upper 75th percentile of earners make approx. \$12 more per hour, at a rate of \$26.84. Earnings by occupation are listed in the chart below, as seen, Healthcare Practitioners and Technical occupations have the highest average hourly rate, followed by Management and Legal occupations. Food Preparation and Serving Related occupations pay the lowest average hourly rate in the city. While wages are not fully representative of current economic conditions, comparing wage data by occupation can help paint a clearer picture of the living conditions for the region's workforce. A detailed list of wages for each occupation can be found in the appendix.

10th - 90th Percentile Compensation





Employer Information

There are several large, employers in region, each contributing significantly to the region’s economic base and coming from a wide range of industries. As seen, the Marine Corps Air Station is by far the largest employer within both the city and county with 6,686 employees. The Yuma Proving Ground (associated with the US Army) is the second largest employer in the region with 2,282 employees. When analyzing job posts in the city, roughly 1,200 employers posted a job post online in the last 12 months, contributing to over 9,397 unique job posts over this time frame.

Yuma Area Leading Employers		
Company	Employment	Location
Marine Corps Air Station - Yuma	6,686	In City
Yuma Proving Ground (Army)	2,382	In County
Yuma Regional Medical Center	2,300	City
Yuma Elementary District #1	1,400	City
Yuma County	1,400	City
Trax	1,250	City
Customs and Border Protection	1,000	City
Yuma Union HS District	1,000	City
Arizona Western College	980	City
City of Yuma	950	City
Cocopah Indian Tribe	870	County
Convey Health Solutions	550	City
Alside Windows	520	City
Advanced Call Center Techn.	515	County
Allstate Insurance	325	City
Shaw Industries	280	City
Gowan Companies	260	City
Michael Foods	235	City
Clarios (Johnson Batteries)	190	City
Date Pac	190	City
Insultech	180	County
Bose Corporation	110	City

Source: City of Yuma, 2022



1,179 Employers Competing

All employers in the region who posted a job online over the last 12 months



9,397 Unique Job Postings

The number of unique postings for the City of Yuma over the last 12 months



Stakeholder Engagement

Sector Focus Groups & Interviews

Pages 115 - 123

Overview

Stakeholder focus group sessions were held to gain a better understanding of the workforce and industry landscape, regional assets, competition, and growth opportunities in Yuma. Specifically, three hour-long sector specific focus groups, including (1) Real Estate/Economic Development, (2) Education and Career Technical and (3) Workforce Professionals were held as well as one-on-one interviews with the Mayor and Council Members. The combination of information from different sectors and background gave a comprehensive economic and workforce view of the city. Highlighted in the next pages are the top takeaways from stakeholder input as well as information from the City of Yuma.

Regional Assets



Challenges



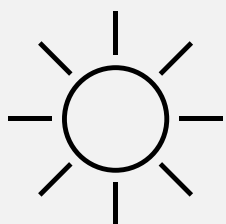
Opportunities



Competition



Regional Assets Identified



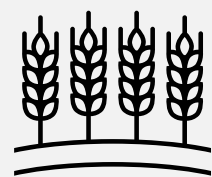
Location

Quite possibly the most mentioned asset the city of Yuma holds is its strategic positioning. Close to major cities like San Diego, Phoenix, Los Angeles, and Mexicali, the opportunity for exports and logistics play a key role for the local economy. Included in the strategic location of Yuma is the bi-national border with Mexico. This allows for a large supply of labor and goods to be shared. Finally, the climate of Yuma allows for plenty of sunshine and limited natural disasters.



Cross-Sector Collaboration

The unparalleled cross-sector collaboration in the region that brings economic, workforce, and education professionals together was a major talking point for stakeholders. Working on joint projects to help businesses and citizens, the current collaboration network in the region has been modeled by other areas after its success.



Specialized Industries

Stakeholders were quick to identify that the city and region holds several large, and extremely specialized industries. From its unmatched agricultural presence, to emerging and specialized industries like aerospace technology, the city has a unique and diverse economic landscape.



Water

Each of the focus groups identified that the Yuma Region is blessed with significant water resources as the area holds senior water rights to the Colorado River that equate to 40% of the State's total allocation. The water rights allow for several industries, like agriculture, to grow and thrive while also bringing in other advantageous like recreational opportunities.



Quality of Life

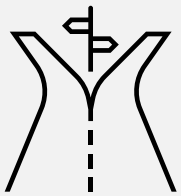
Stakeholders identified several key assets in the city that lead to a higher quality of life. These include an abundance of parks and recreation opportunities and programs, lower cost of living than nearby cities, a friendly tax environment, a strong faith-based community, and a thriving downtown with a true community and small-town feel.

Regional Assets Identified



Colleges and Universities

Nearly all of the focus group participants mentioned the supply of educational institutions in the city. Included in these talks were Arizona Western College. AWC is also the host institution for branch campuses of U of A, ASU, and NAU. Plans are underway to create a “Multiversity” campus in downtown Yuma which will include AWC, U of A, ASU, and NUA.



I-8

Stakeholders identified interstate travel to and from Yuma via I-8 for San Diego or Tucson as a key asset. Nearly 40,000 vehicles travel through Yuma on a daily basis via I-8. Traveling from I-8 to I-10 also takes traffic to Phoenix.



Workforce

While also with its challenges, the workforce in the region was listed as an asset by stakeholders due to the availability of a diverse community as well as relatively cheaper labor costs. The strong work ethic many employed hold especially in the agricultural sector was also mentioned



Ports of Entry

A major asset listed by stakeholders is the two Ports of Entry in San Luis. The San Luis Land POE is the second busiest non-commercial LPOE in Arizona, processing over 3 million vehicles and 2.5 million pedestrians each year. The POE is an important asset for commercial and private cross border traffic. Furthermore, the POE has received partial funding for an upcoming expansion and renovation.



Yuma Proving Ground (YPG)

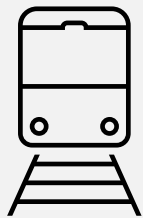
Stakeholders listed YPG as a key asset to the city. YPG is one of the largest military installations in the world covering over 1,300 sq. miles. Its mission is testing every weapon in the ground combat arsenal. When combined with its size, infrastructure, and equipment, YPG (and Yuma) is a magnet for private sector contractors.

Regional Assets Identified



Yuma International Airport

An underrated asset in the city identified by stakeholders is the Yuma International Airport. The airfield features four runways with the longest being 13,300' x 200'. The airport receives commercial air service from American Airlines with multiple daily flights to Dallas and Phoenix. The airport also features the Defense Contractor Complex which serves private companies such as Boeing, Jacobs Engineering, and AQST Space Systems.



Union Pacific Railroad

Along with other modes of transportation, stakeholders identified the Union Pacific Railroad as an important asset. UPRR has a long history of service to Yuma residents and businesses. UPRR traffic through Yuma leads to either Los Angeles, CA, or El Paso, TX via Tucson.



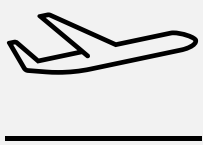
Middle Mile Fiber Network Initiative

Yuma County is leading a Broadband Task Force along with all cities/towns, the economic development corporation and agricultural interests. The initiative is to establish an open network that will encourage providers to build fiber to the home and business at speeds of at least 1 Gbps. The ultimate goal is to provide accessible, affordable fiber internet service to all residents of Yuma County, including those who are currently unserved or underserved.



Restricted Air Space

An overlooked asset of military installations and commercial airports is restricted air space. Restricted air space is highly valued aspect of defense and aerospace industries. Yuma County has more than 2,000 sq. miles of restricted air space. This asset presents Yuma with unique partnership opportunities that hold benefit for both the public and private sectors.



Marine Corps Air Station - Yuma

Several stakeholders mentioned MCAS as a critical asset in Yuma. Yuma is the largest Marine aviation installation in the U.S. (3,000 acres) and home to multiples quadrans including F-35B Lightning II's. U.S. allies send thousands of pilots to MCAS for flight training throughout the year. Over 600 Marine avionics technicians and maintenance repair mechanics exit MCAS each year.

Challenges Identified



Housing

The most mentioned challenge facing Yuma is the lack of adequate and affordable housing. Stakeholders addressed the mismatch in housing availability with the needs of the current workforce. Particularly, younger generations have limited options (missing middle housing), and military personnel do not have the supply that is needed.



Shovel Ready Sites

While Yuma has announced several new developments, stakeholders mentioned the need for new infrastructure, particularly for industrial sites. This could include water and sewer lines or network connectivity. The lack of infrastructure already built to possible development sites hinders interest from new companies.



Available Land

Another main challenge addressed by stakeholders was the limited amount of land left in the Yuma region. A large portion of land is held by either state or governmental agencies, including a one-mile buffer zone from the military complex. Without land to develop, new housing, businesses, and industrial sites will be near impossible to build.



Workforce Skills and Education

While the availability of workers is an asset in Yuma, stakeholders identified a skills mismatch in the current workforce landscape. The need for more STEM degrees and highly skilled workers is a concern. Currently, the educational attainment in Yuma is much lower compared to nearby regions, and employers are having difficulty filling middle-level positions.



Marketing

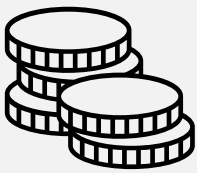
A common challenge that many stakeholders addressed facing Yuma is that the city does not position itself well within the public eye and there is a bigger need to market the great people, companies, and community the city holds. The perception of Yuma as the 3rd largest economy in Arizona is greatly unrepresented and both the public and private sector should work on marketing the region in a better more comprehensive way.

Challenges Identified



Water Supply

Despite Yuma holding senior water rights to the Colorado river, a current drought has brought on a critical water shortage that should lead to more water conservation conversations.



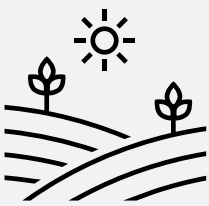
Affordability

In relation to housing costs, the affordability of the region in general was brought up by certain stakeholders as a challenge given the on average lower wages in the region.



Downtown Entertainment

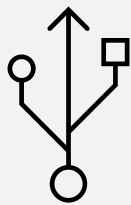
Although Yuma's downtown has seen great investment in recent years, certain stakeholders mentioned that the downtown area could use more diversification in businesses, specifically more restaurants and accommodation services that draw families and citizens in.



Agriculture Perception

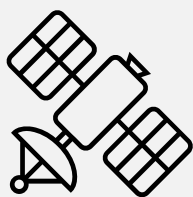
Stakeholders mentioned that the large agriculture industry in the region can have a negative perception as outsiders may view the work as low-skilled and rural labor. Additionally, some citizens, particularly parents in the region, may push back on their children going into agriculture as the perception is lower paying and skilled jobs. In contrary, many agriculture occupations require extremely high-skilled workers that pay well with the opportunity for technological advancements.

Industry Opportunities Identified



Agriculture Technology

With the large base of agricultural workers and employers in the region, the opportunity to expand the agriculture industry into new and developing agri-tech markets is quite possibly the largest opportunity available for Yuma. Stakeholders identified the already current move into agri-tech by several cities and the need for Yuma to step into this field.



Aerospace and Aviation

The ability to continue and grow the space and aerospace manufacturing industry was identified by stakeholders. Additionally, rocket and satellite launching may be viable with a new space port in the coming years. The drone and UAV niche are also very active in the area.



Tourism and Recreation

Along with tourism from potential rocket launches, stakeholders identified numerous areas of opportunity for increased tourism including the increased development of riverfront property and activities on the Colorado River.



Food Processing

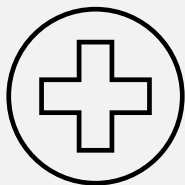
Stakeholders mentioned the large capacity of the current workforce and industrial warehouses/cooling facilities to increase food processing in the region. After producing a majority of all leafy vegetables in the United States, expanding and diversifying this work is an opportunity for growing businesses.



Advanced Manufacturing

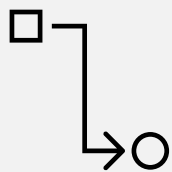
Manufacturing already has a strong presence in the region, but the ability to expand and grow into more technical and specialized industries is a top opportunity for Yuma based on several key stakeholder's insight. One key reason the region is set for growth is the large agricultural workforce that is present in the region that holds many similar and transferable skills to common manufacturing occupations.

Industry Opportunities Identified



Healthcare

With Yuma Regional Medical Center being the only major hospital in the area, the ability to attract doctors and nurses who want to relocate to one stable location is available. Additionally, the family medicine program has brought in many interns and the possibility of a new mental health program would be enormous for both bringing in new interns and talent in the region.



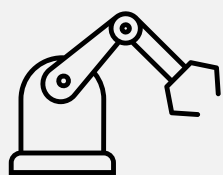
Supply Chain/Logistics

Stakeholders identified that Yuma's location and cheaper costs of doing businesses make it an excellent location for supply chain and logistics businesses. Just a short drive from many major metropolitan areas, and bordering the Mexican national border, the opportunity for supply chain businesses is large.



Education

The Yuma region holds many educational institutions with the opportunity to increase their footprint along with adding new programs tailored for businesses in the region. The new Multi-University downtown that is in plans has the ability to consolidate all the universities in the region and can be a game changer in terms of training and recognition.



Automation

Despite automation having the notion of replacing jobs, there are countless opportunities that automation presents in terms of research and development and new supervision occupations. Additionally, within the agriculture industry there are boundless opportunities for automation that stakeholders identified including drone and machine assistance.



Defense

Stakeholders also identified the already established defense industry in the region as an opportunity for Yuma to expand and grow with the development of new aircraft hangers and defense equipment. Additionally, 400-700 marines exit service each year which brings an influx of talent and skills to the workforce that the city should capitalize on.

Competitor Regions Identified



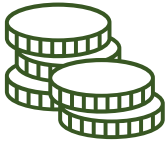




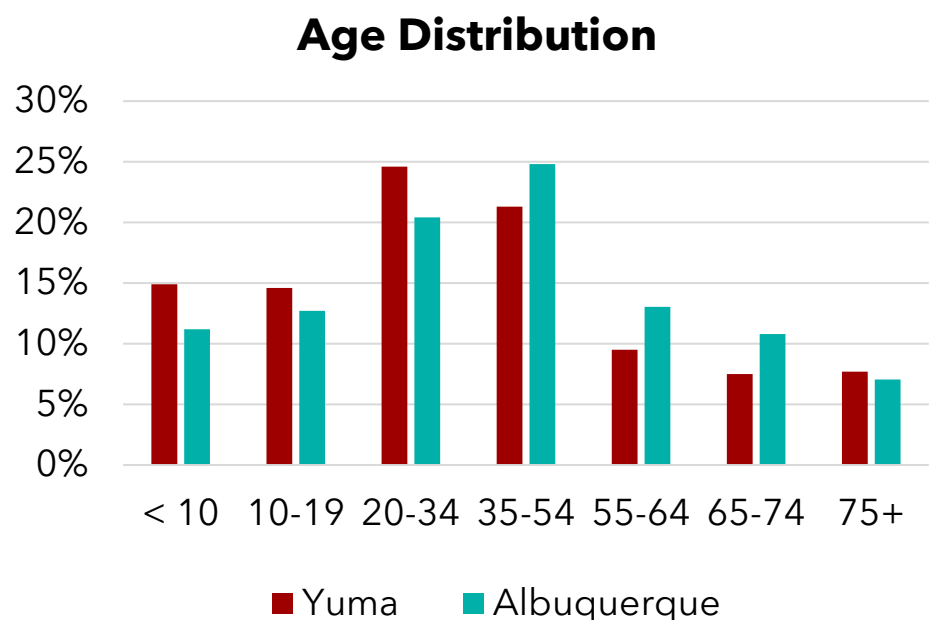
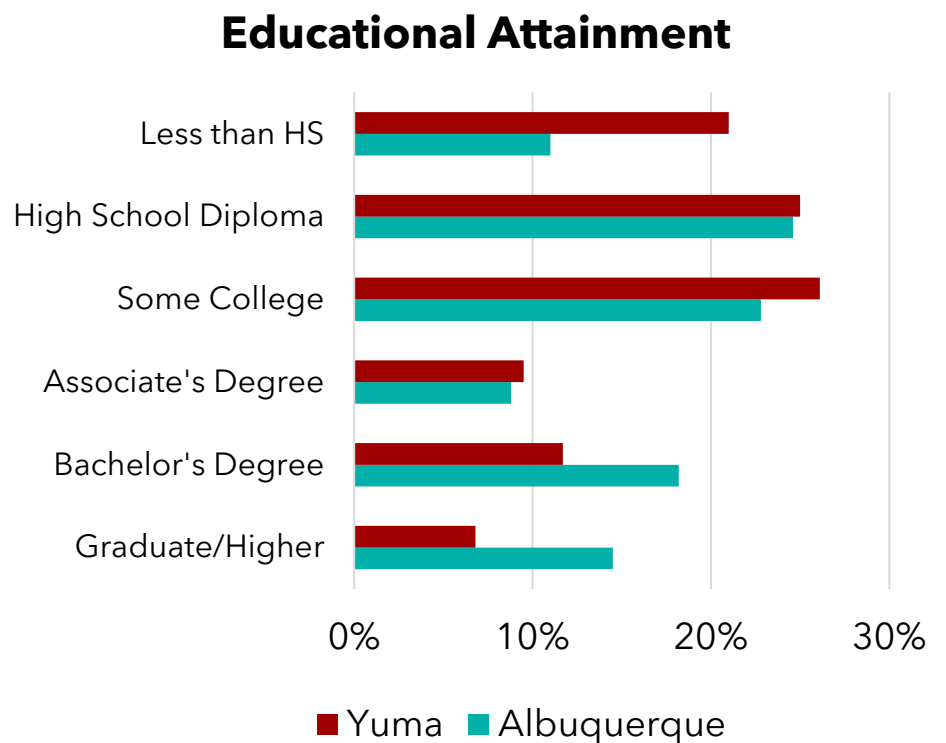
Competitor Region Profiles

Pages 125 - 136

Albuquerque MSA vs. Yuma

Albuquerque, New Mexico, is close to 950K people and holds more than 400K jobs. While much larger than Yuma, Albuquerque was identified as a competitor not only for business, but tourism and labor. Overall, the median household income in Albuquerque is close to \$10,000 more than Yuma, although the cost of living is slightly higher. Median earnings per job in Albuquerque are \$18.36, approx. \$3.00 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma lags behind Albuquerque for percent of population earning a degree in higher education. While over 33% of Flagstaff's population has a bachelor's degree or higher, this number is roughly 19% for the City of Yuma. By age distribution Yuma is significantly younger than Albuquerque, with Yuma holding smaller percentages of the population in all of the older subgroups shown below. Although not an in-state competitor, Albuquerque competes on cost of living while having a large-scale city feel in the Western United States.

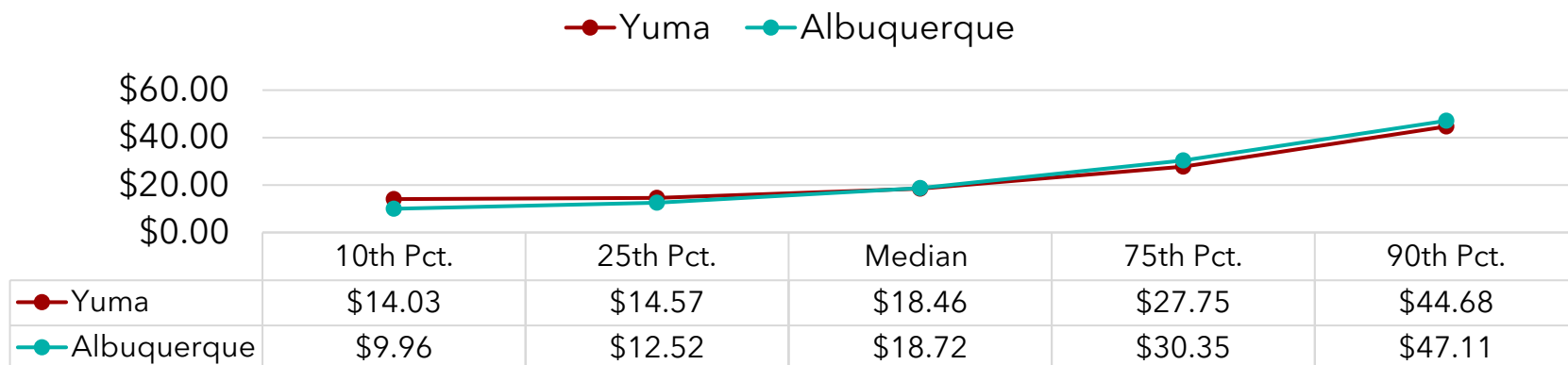
Albuquerque		Yuma
Population		
926,683		106,629
Total Regional Employment		
412,775		61,017
Median Household Income		
\$54,072		\$45,243
Cost of Living		
98.1		85.8
Median Earnings		
\$18.36		\$15.84



Compensation

Hourly compensation adjusted for cost of living between the City of Yuma and Albuquerque are shown below. As seen, Albuquerque provides close to identical hourly wages than Yuma, although Yuma, on average, provides higher wages for lower paying jobs.

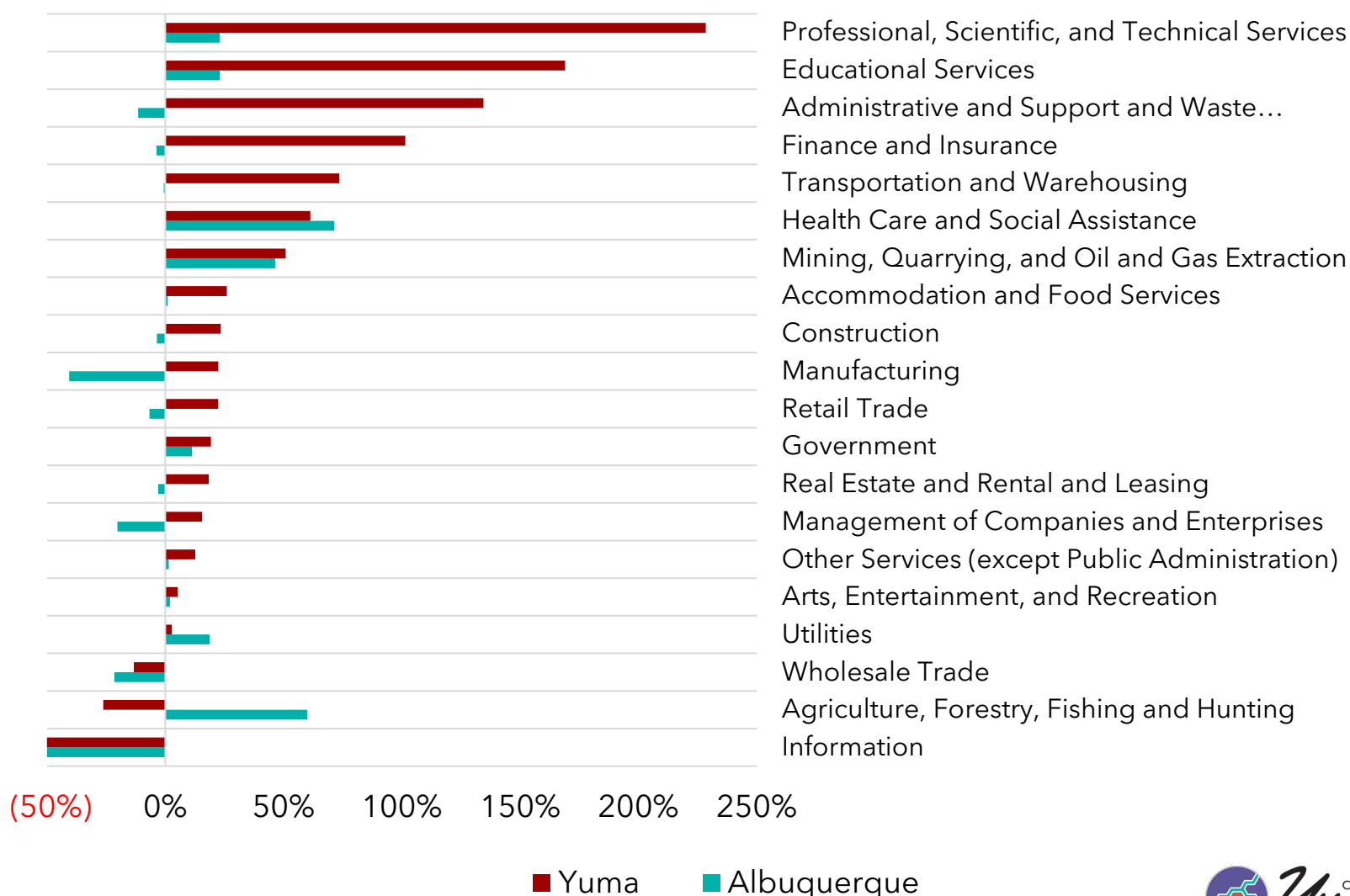
Hourly Compensation Adjusted for COL



Industry



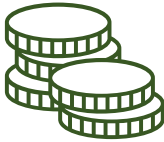


An industry growth comparison is shown below between the City of Yuma and Albuquerque. As seen, Yuma has seen much higher growth in a number of different industries in terms of employment compared to Albuquerque. The City of Yuma has also seen positive employment growth in industries where Albuquerque has seen declines. Most notably, Yuma's top performing sectors in terms of employment growth have significantly outperformed the growth of Albuquerque in the past 20 years.

Industry Comparison

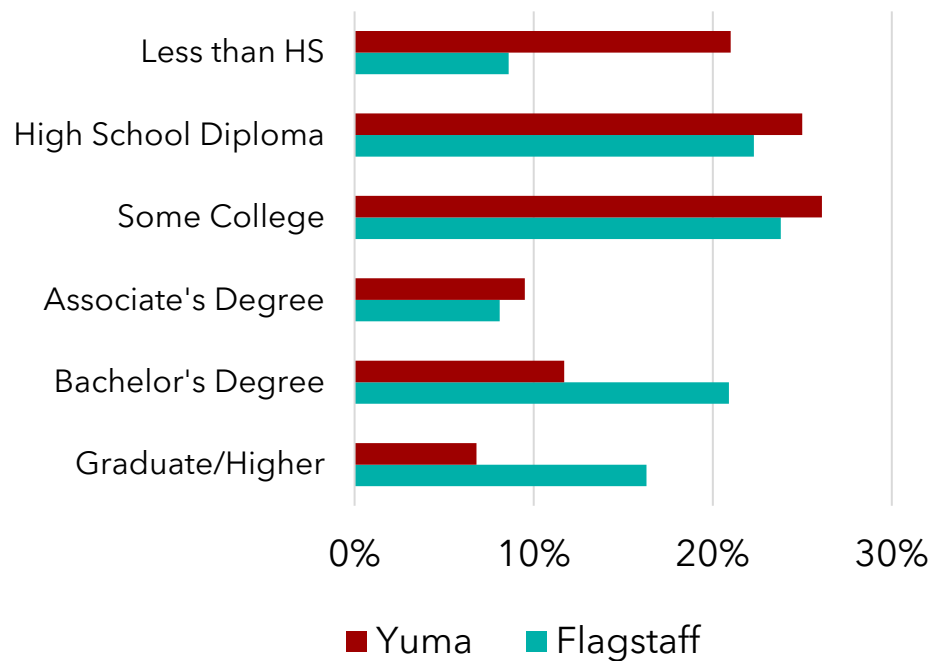


Flagstaff MSA vs. Yuma

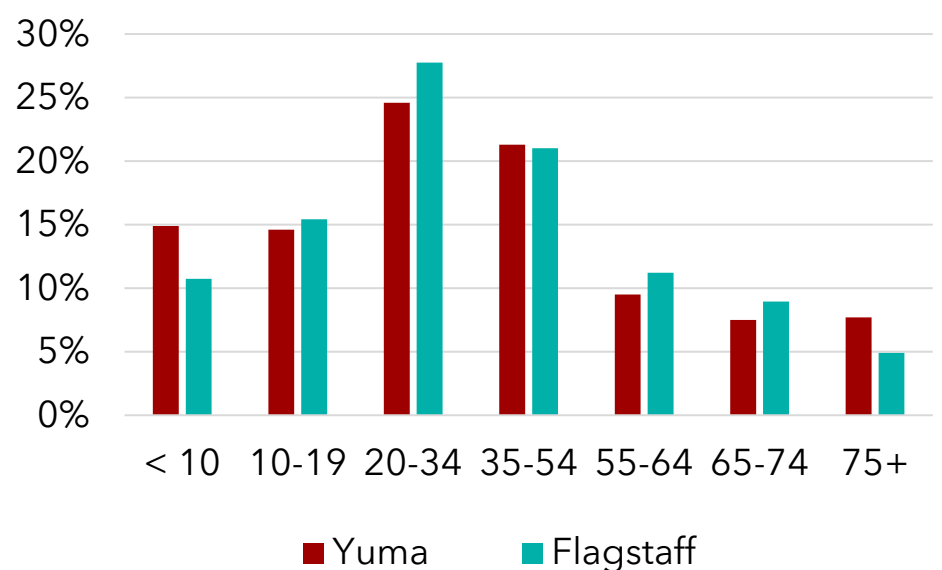
Flagstaff, Arizona, is close to 150K people and holds more than 65K jobs. The city is both closely sized in terms of population and employment to the City of Yuma. Overall, the median household income in Flagstaff is close to \$15,000 more than Yuma, although the cost of living is significantly higher. Median earnings per job in Maricopa County are \$17.75, approx. \$2.00 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma lags behind Flagstaff for percent of population earning a degree in higher education. While over 37% of Flagstaff's population has a bachelor's degree or higher, this number is roughly 19% for the City of Yuma. By age distribution Yuma is relatively similar to Flagstaff, with Yuma holding a larger percentage of the population under 10, and 75+. While seemingly alike, the regions differ in many ways other than geographic location and topography, including Flagstaff relying much more heavily on tourist attractions and higher educational institutions for employment and economic drivers.

Flagstaff		Yuma
Population		
144,138		106,629
Total Regional Employment		
65,126		61,017
Median Household Income		
\$59,460		\$45,243
Cost of Living		
106.6		85.8
Median Earnings		
\$17.75		\$15.84

Educational Attainment



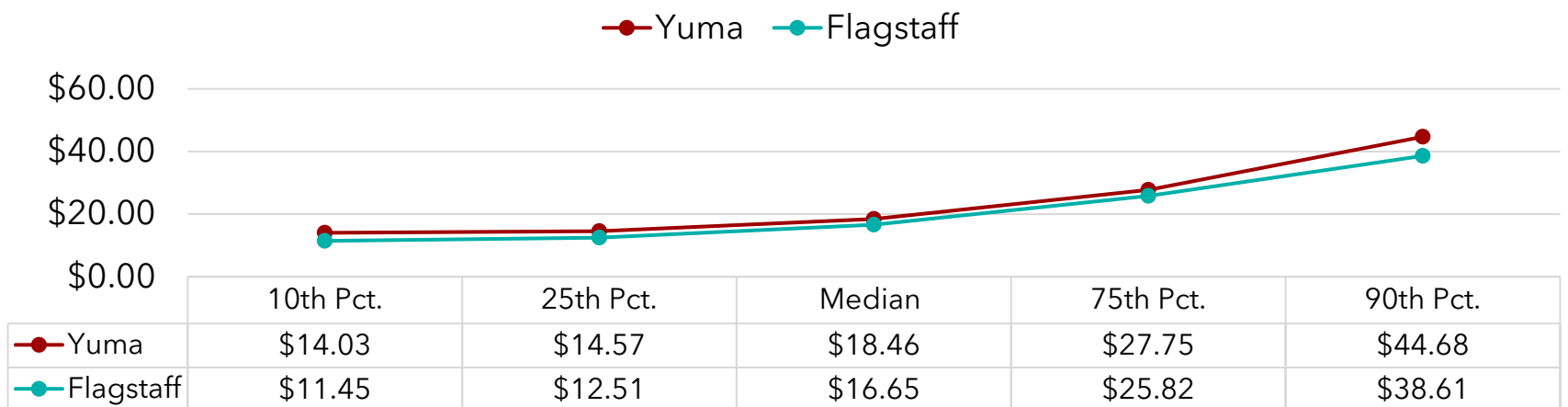
Age Distribution



Compensation

Hourly compensation adjusted for Cost of Living (COL) between the City of Yuma and Flagstaff are shown below. As seen, when adjusting for COL, Yuma provides very competitive wages at each percentile, most notably the lowest and highest paying jobs. COL valuation for Flagstaff and Yuma can be seen on the page before.

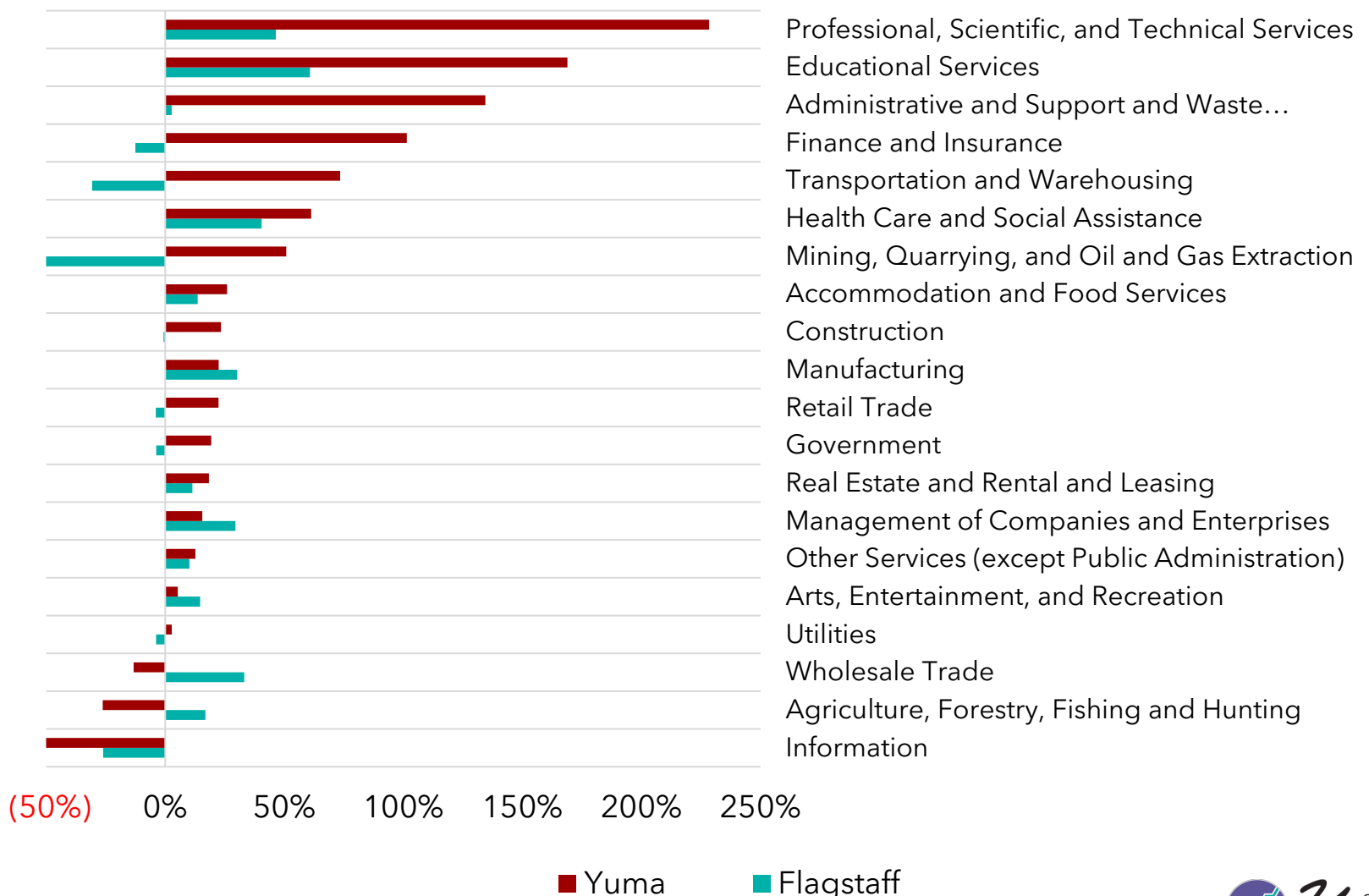
Hourly Compensation Adjusted for COL



Industry



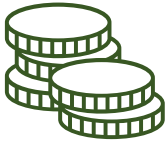


An industry growth comparison is shown below between the City of Yuma and Flagstaff. As seen, Yuma has seen much higher growth in a number of different industries in terms of employment compared to Flagstaff. The City of Yuma has also seen positive employment growth in industries where Flagstaff has seen declines. That said, only the Information industry has seen employment declines in both Yuma and Flagstaff over the past 20 years.

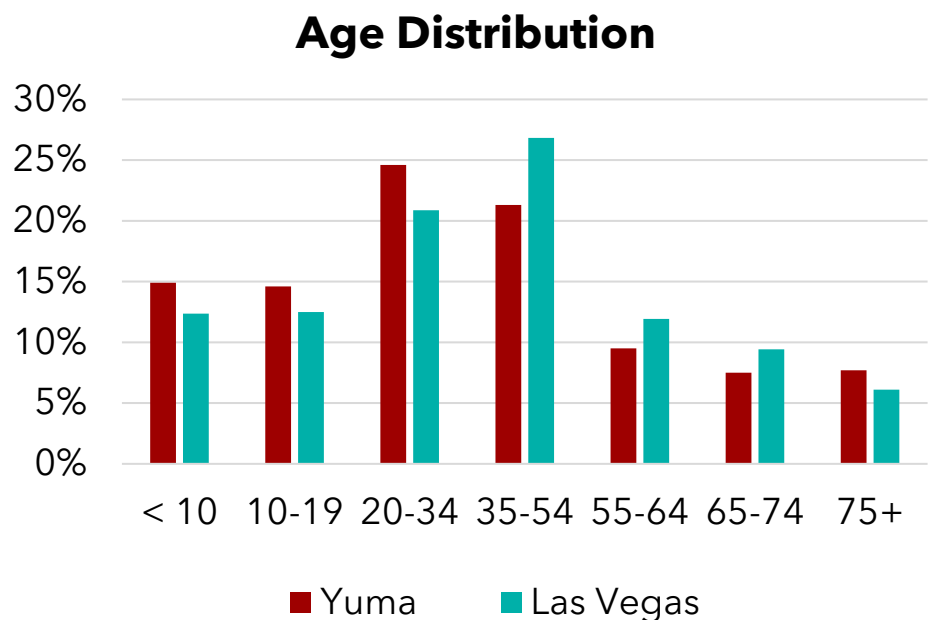
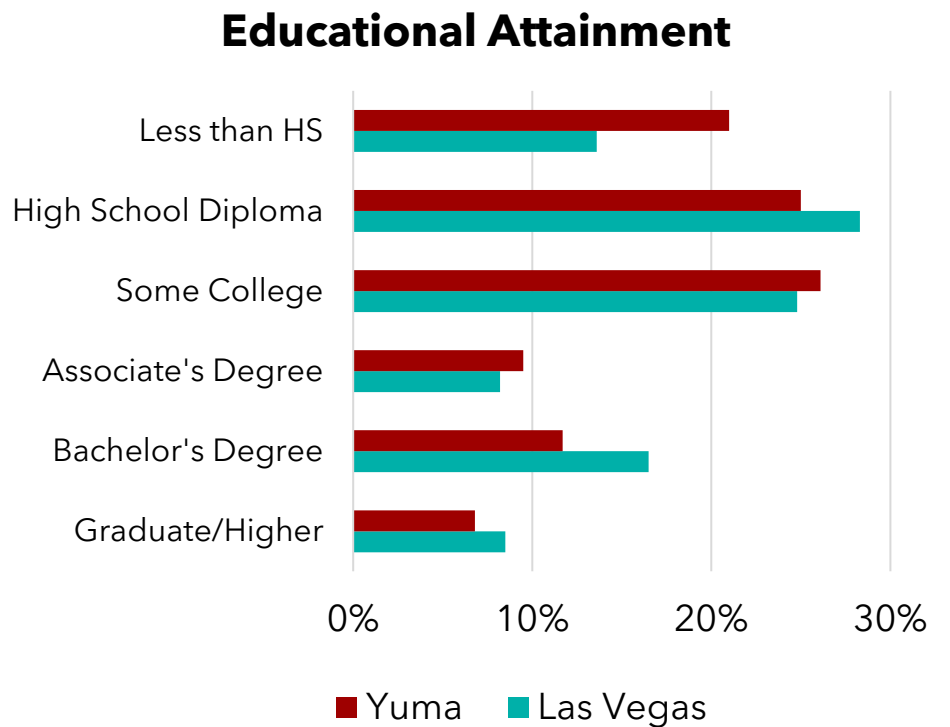
Industry Comparison



Las Vegas MSA vs. Yuma

Las Vegas, Nevada, is 2.4M people and holds more than 1M jobs. The city is significantly larger than Yuma, although does compete for business on certain occasions. Overall, the median household income in Las Vegas is close to \$15,000 more than Yuma, although the cost of living is significantly higher. Median earnings per job in Maricopa County are \$18.17, approx. \$2.50 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma is relatively similar in lower educational attainment yet lags behind Las Vegas for percent of population earning a degree in higher education. By age distribution Yuma is much younger than Las Vegas, with Yuma holding larger percentages of its population in age groups under 35. While seemingly different, stakeholders identified Las Vegas as an area that competes with Yuma, on a number of different items. One in particular is population growth, as Las Vegas has seen an influx of people, development, and business in the past decade.

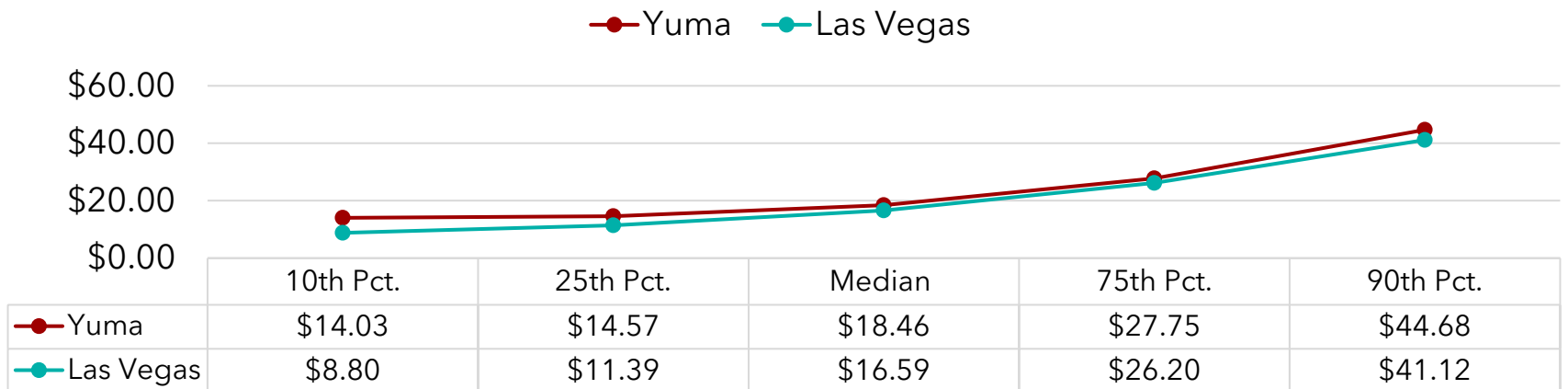
Las Vegas		Yuma
Population		
2.4M		106,629
Total Regional Employment		
1.0M		61,017
Median Household Income		
\$59,340		\$45,243
Cost of Living		
109.5		85.8
Median Earnings		
\$18.17		\$15.84



Compensation

Hourly compensation comparisons adjusted for cost of living between the City of Yuma and Las Vegas are shown below. As seen, Las Vegas provides slightly lower hourly wages than Yuma when adjusting for cost of living. Cost of living valuations can be seen on the page before.

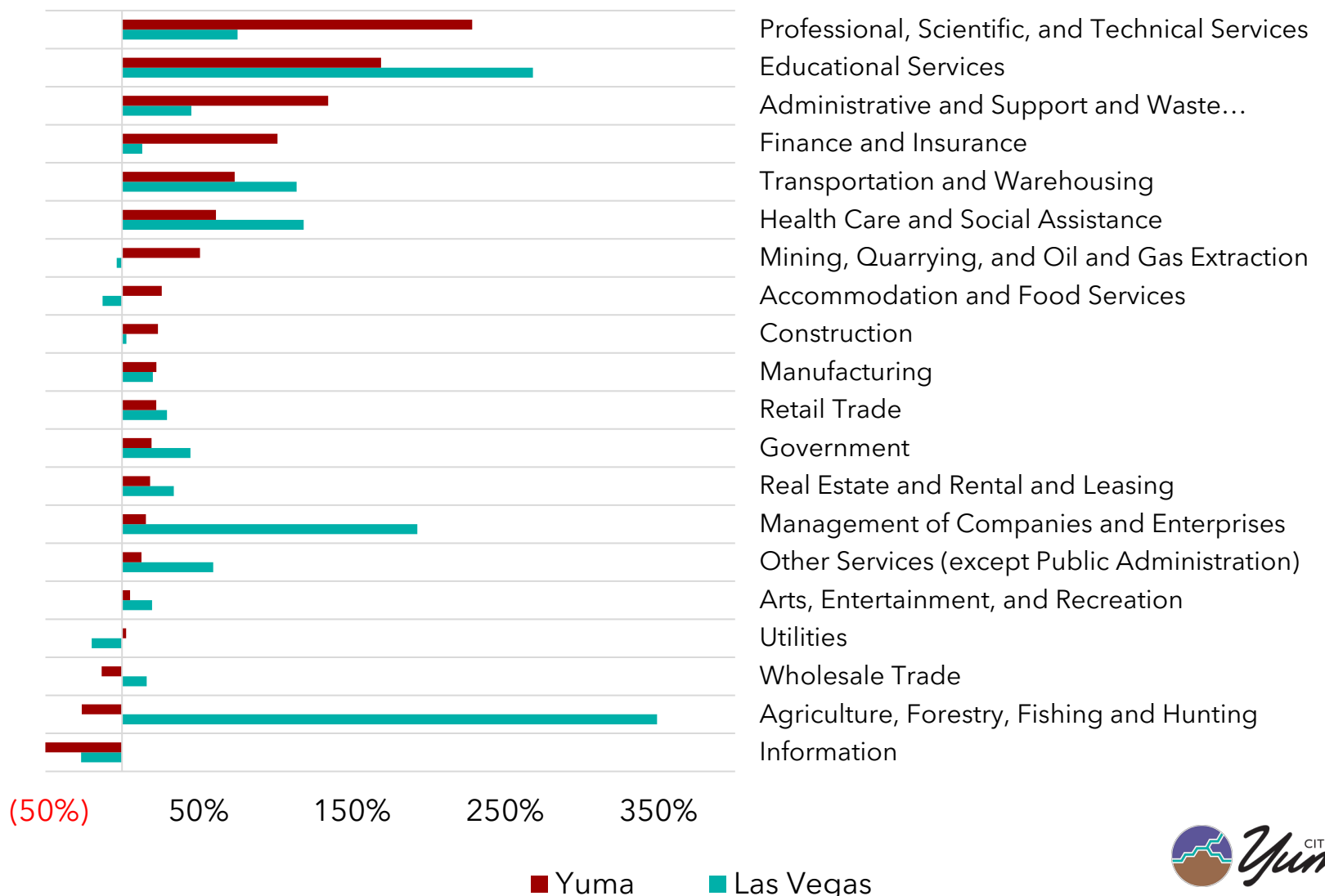
Hourly Compensation Adjusted for COL



Industry



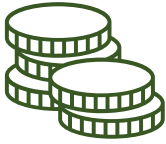


An industry growth comparison is shown below between the City of Yuma and Las Vegas. As seen, Yuma outperformed Las Vegas in a number of different industries in terms of employment growth percentage in the past 20 years. That said, the Educational Services, Transportation and Warehousing, and Health Care and Social Assistance are top growing industries for Yuma that were outperformed by Las Vegas. Las Vegas has also seen an influx of new jobs in the Management of Companies and Enterprises, as well as Agriculture, Forestry, Fishing, and Hunting industries.

Industry Comparison

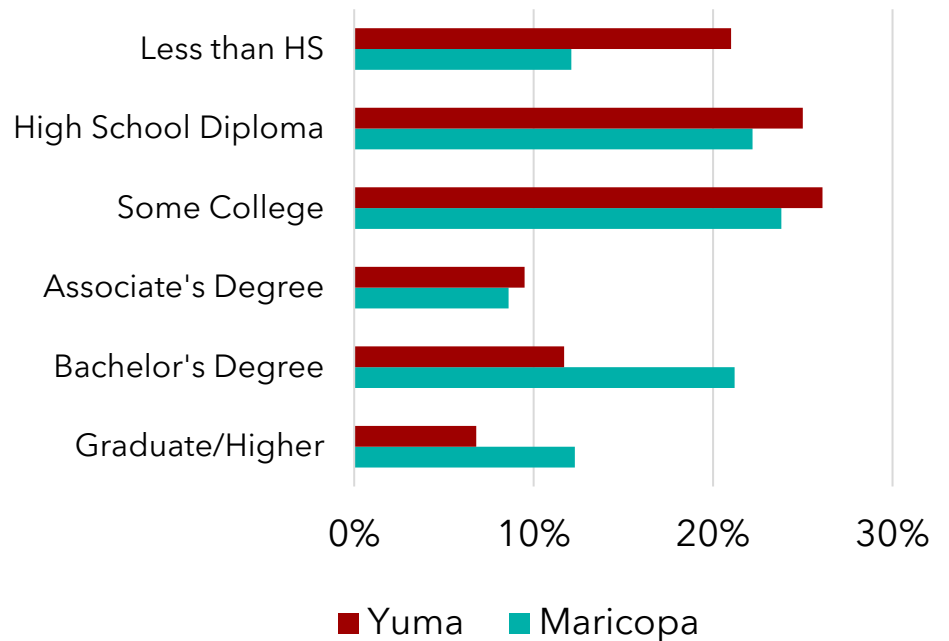


Maricopa County vs. Yuma

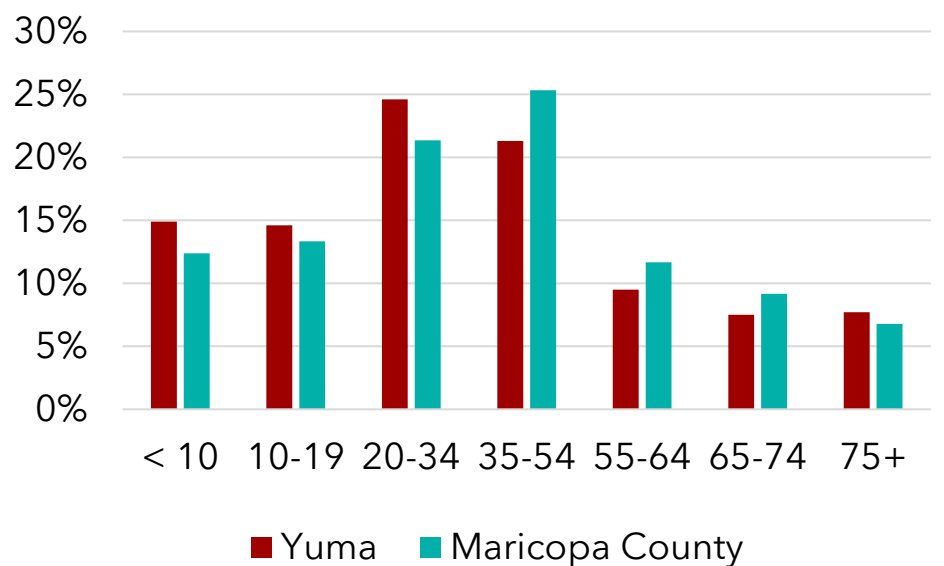
Maricopa County, most notably consisting of the City of Phoenix, is over 4.6M people, with over 2M jobs in the county, both numbers being significantly larger than the City of Yuma. That said, while larger in population, comparisons between regions are still meaningful to provide. Overall, the median household income in Maricopa County is close to \$20,000 more than Yuma, although the cost of living is significantly higher. Median earnings per job in Maricopa County are \$19.92, approx. \$4.00 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma lags behind Maricopa County for percent of population earning a degree in higher education. While over 33% of Maricopa's population has a bachelor's degree or higher, this number is roughly 19% for the City of Yuma. By age distribution Yuma is much younger than Maricopa County, with Yuma holding a much larger percentage of the population under 35. While seemingly different, the regions have competed for similar businesses, labor, and attraction efforts and will continue to do so moving into the future.

Maricopa County		Yuma
Population		
4.66M		106,629
Total Regional Employment		
2.3M		61,017
Median Household Income		
\$64,468		\$45,243
Cost of Living		
115.9		85.8
Median Earnings		
\$19.92		\$15.84

Educational Attainment



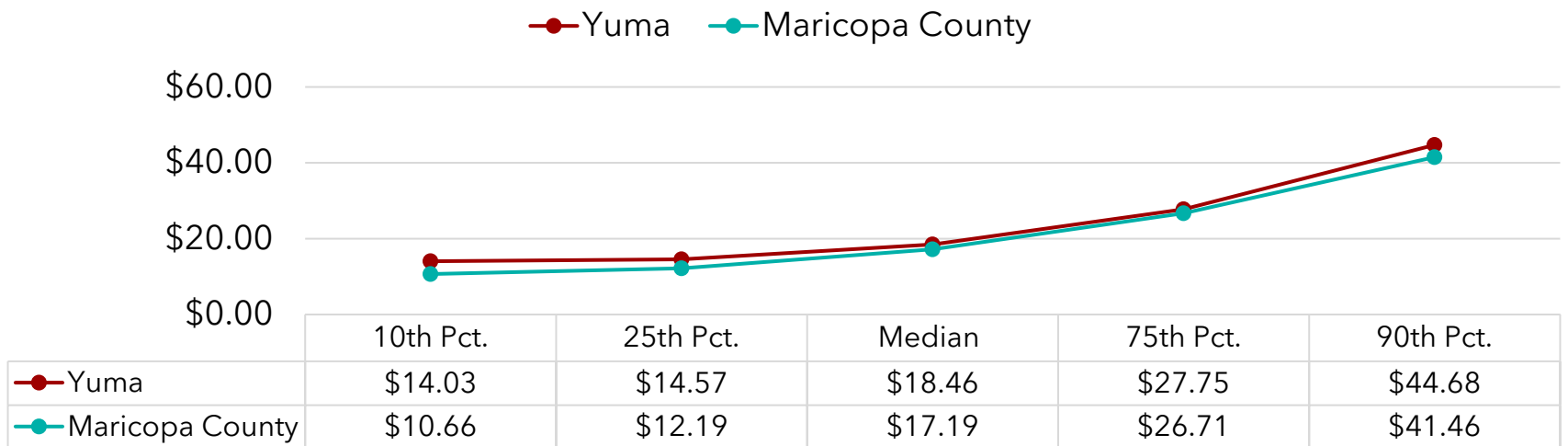
Age Distribution



Compensation

Hourly compensation adjusted for Cost of Living (COL) between the City of Yuma and Maricopa County are shown below. As seen, when adjusting for COL, Yuma provides competitive wages at each percentile. COL valuation for Maricopa County and Yuma can be seen on the page before.

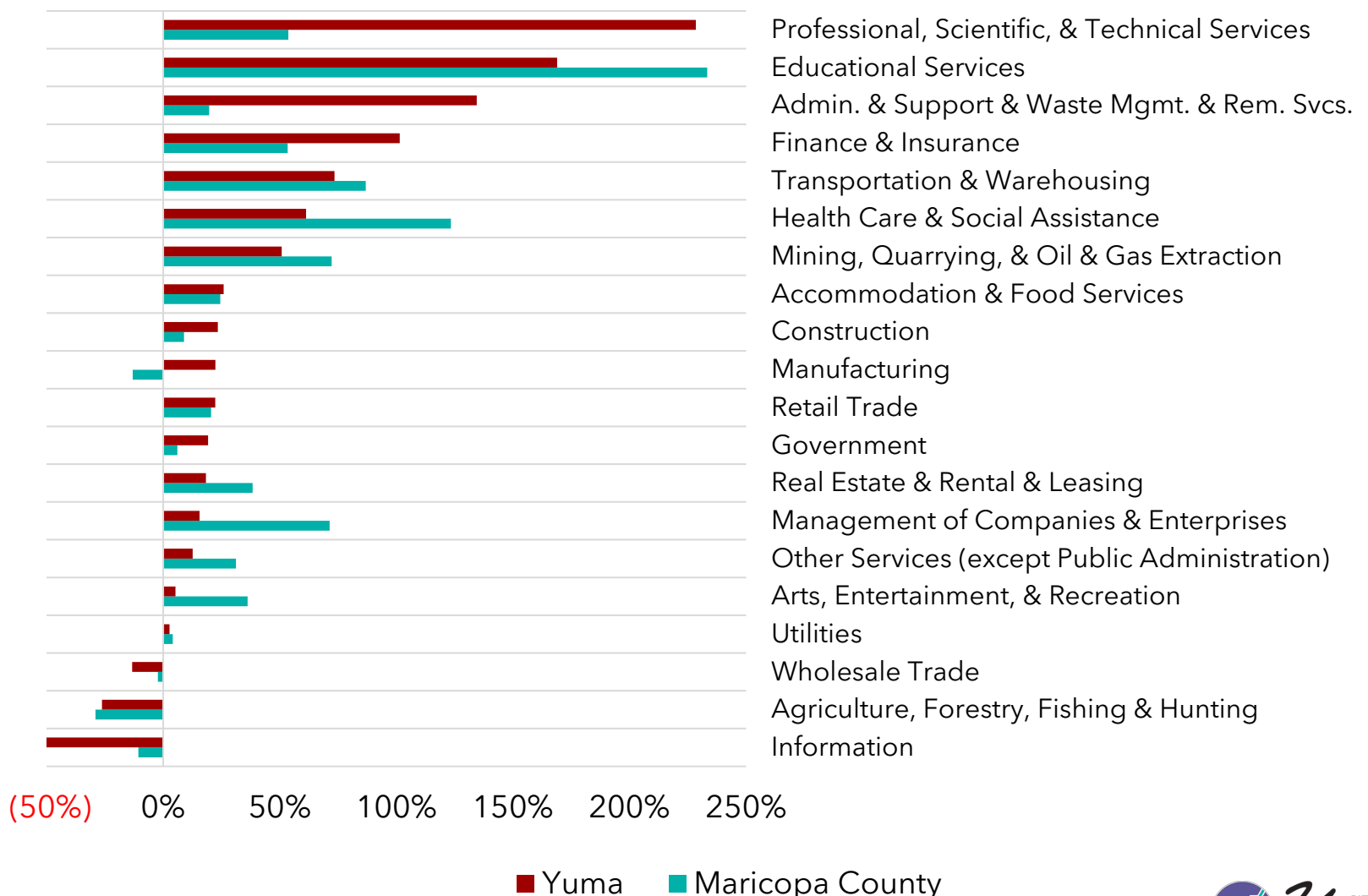
Hourly Compensation Adjusted for COL



Industry



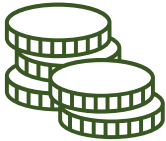


An industry growth comparison is shown below between the City of Yuma and Maricopa County. As seen, the Professional, Scientific, and Technical Services industry has expanding greatly in terms of employment in Yuma and more than any other industry the past 20 years. The City of Yuma has outperformed Maricopa County in several industries in terms of percent growth in employment that past 20 years as well. That said, several industries in both Yuma and Maricopa County have seen a negative decline in jobs.

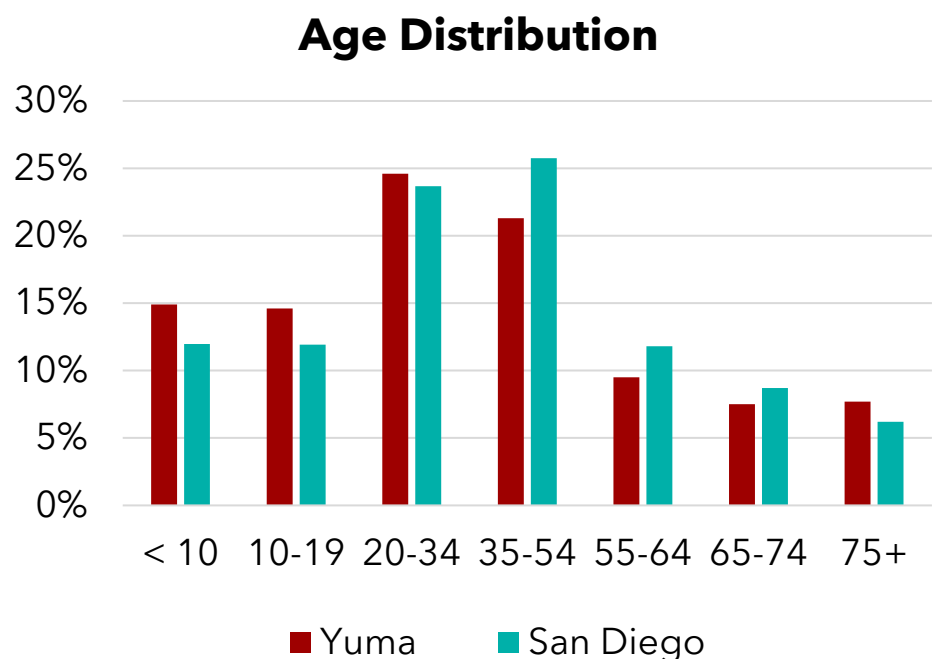
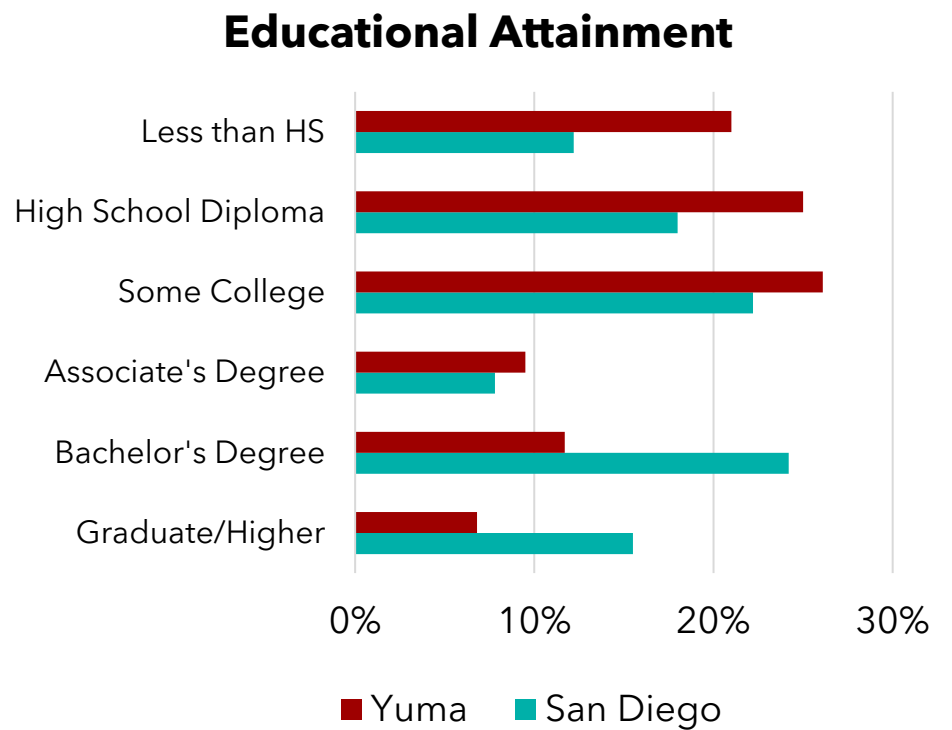
Industry Comparison



San Diego MSA vs. Yuma

San Diego, California, is close to 3.3M people and holds more than 1.6M jobs. San Diego is the largest competitor city identified by stakeholders and compared in this report. Overall, the median household income in San Diego is close to \$35,000 more than Yuma, although the cost of living is significantly higher. Median earnings per job in San Diego are \$26.63, approx. \$11.00 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma lags behind San Diego for percent of population earning a degree in higher education. While nearly 40% of San Diego population has a bachelor's degree or higher, this number is roughly 19% for the City of Yuma. By age distribution Yuma is relatively similar to San Diego, with San Diego holding slightly larger percentages of the population in older subgroups of 55+.

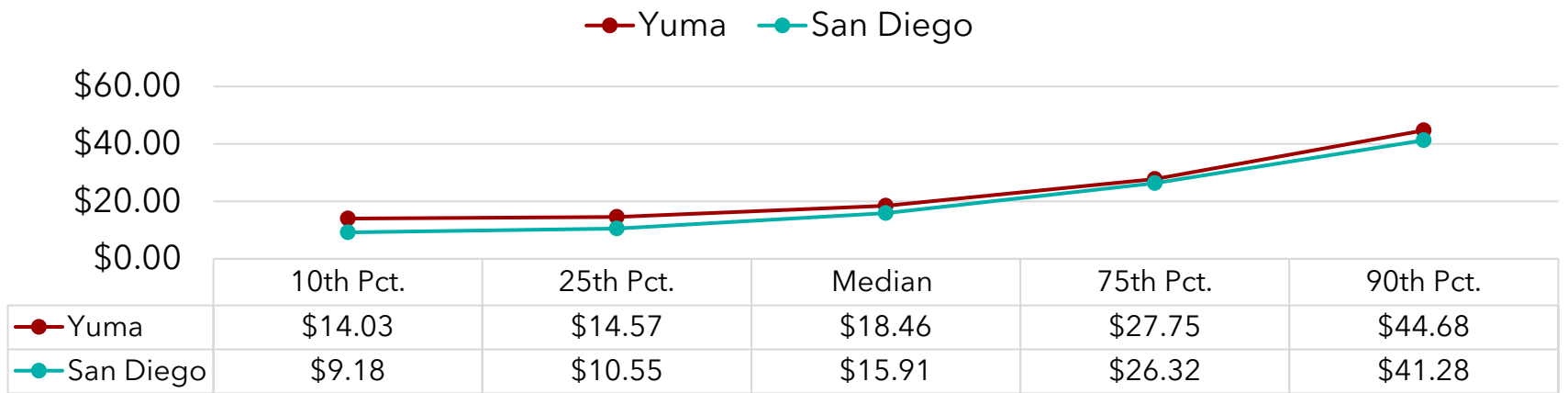
San Diego	Yuma
Population	
3.3M 	106,629
Total Regional Employment	
1.6M 	61,017
Median Household Income	
\$78,980 	\$45,243
Cost of Living	
142.2 	85.8
Median Earnings	
\$26.63 	\$15.84



Compensation

Hourly compensation comparisons adjusted for cost of living between the City of Yuma and San Diego are shown below. As seen, Yuma provides slightly higher hourly wages than San Diego after adjusting for cost of living. San Diego is one of the most expensive places to live in the United States, with its cost of living index at 142.2 as shown in the page before.

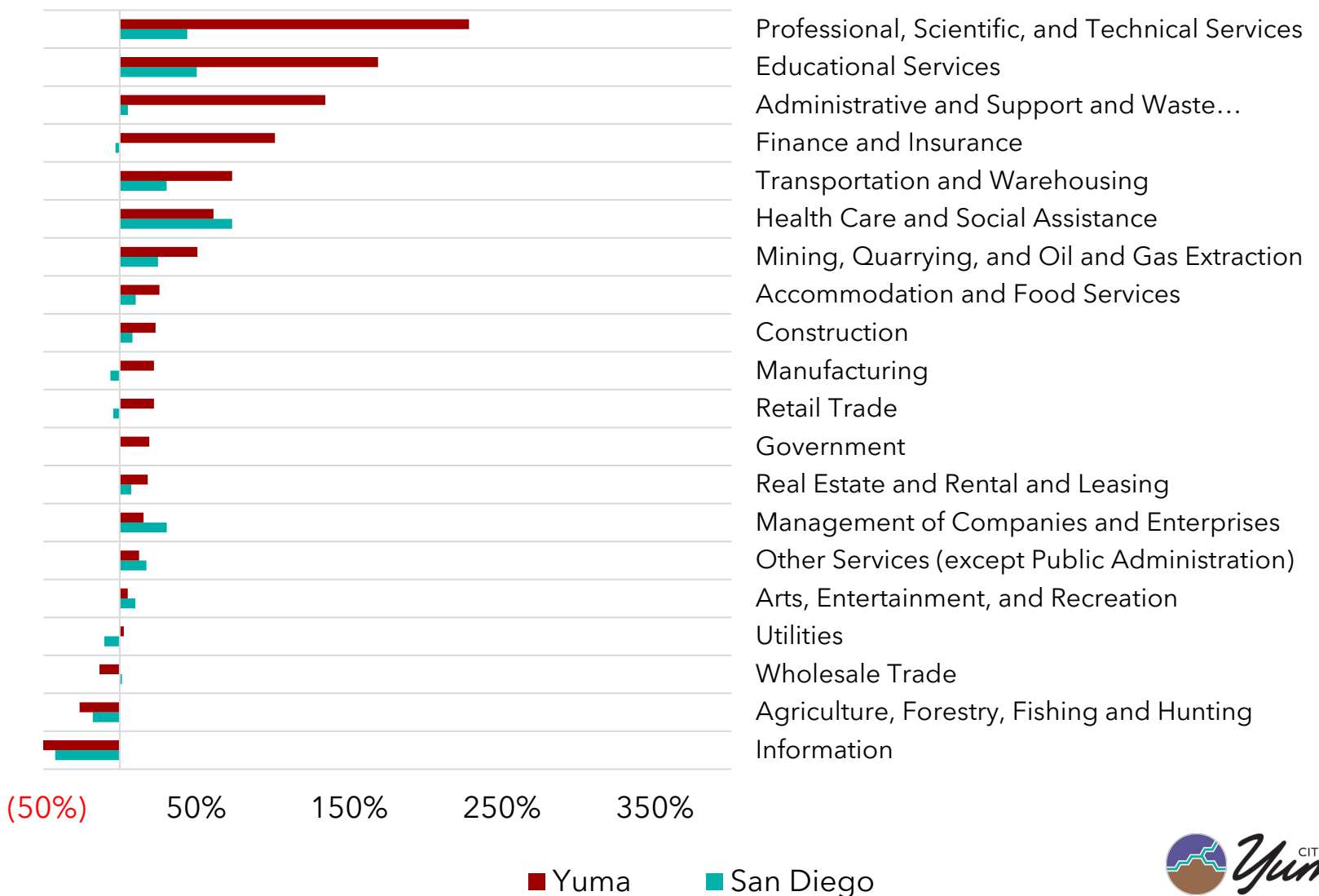
Hourly Compensation Adjusted for COL



Industry



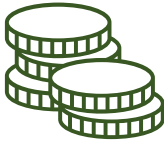


An industry growth comparison is shown below between the City of Yuma and San Diego. As seen, Yuma has seen much higher percent growth in a number of different industries in terms of employment compared to San Diego. That said, San Diego holds much higher numbers of employment per industry compared to Yuma, somewhat limiting the percent growth possible for each industry. Overall, industries in both cities have tended to move in similar directions in terms of job growth and decline the past 20 years.

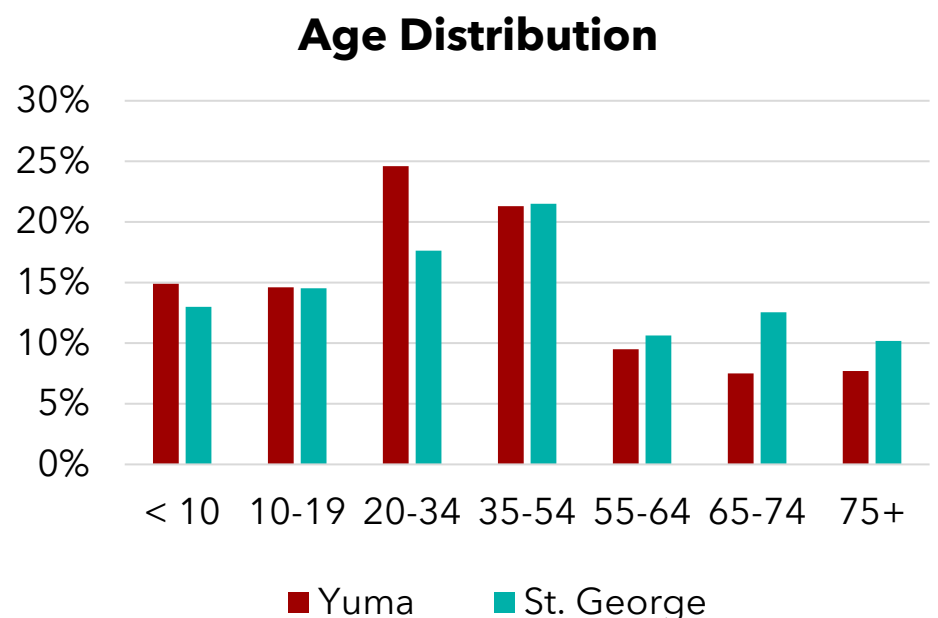
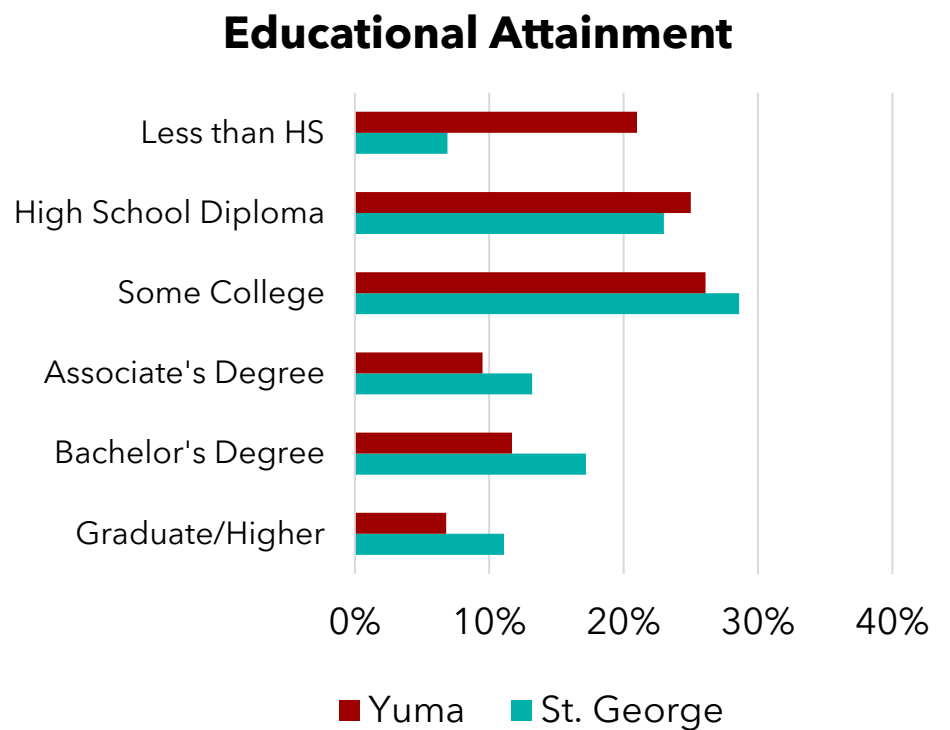
Industry Comparison



St. George MSA vs. Yuma

St. George, Utah, is close to 200K people and holds more than 80K jobs. The city is both closely sized in terms of population and employment to the City of Yuma. Overall, the median household income in St. George is close to \$15,000 more than Yuma, although the cost of living is slightly higher. Median earnings per job in St. George are \$16.76, approx. \$1.00 higher than that of Yuma (\$15.84). In terms of educational attainment, Yuma lags behind St. George for percent of population earning a degree in higher education, including those holding an Associate's Bachelor's, or Graduate degree or higher. By age distribution Yuma is relatively similar to St. George, with St. George holding a larger percentage of the population in older subgroups including those 65+. While not an instate competitor, St. George competes with Yuma based on its location and access to major cities, as well as quality of life and cost of living.

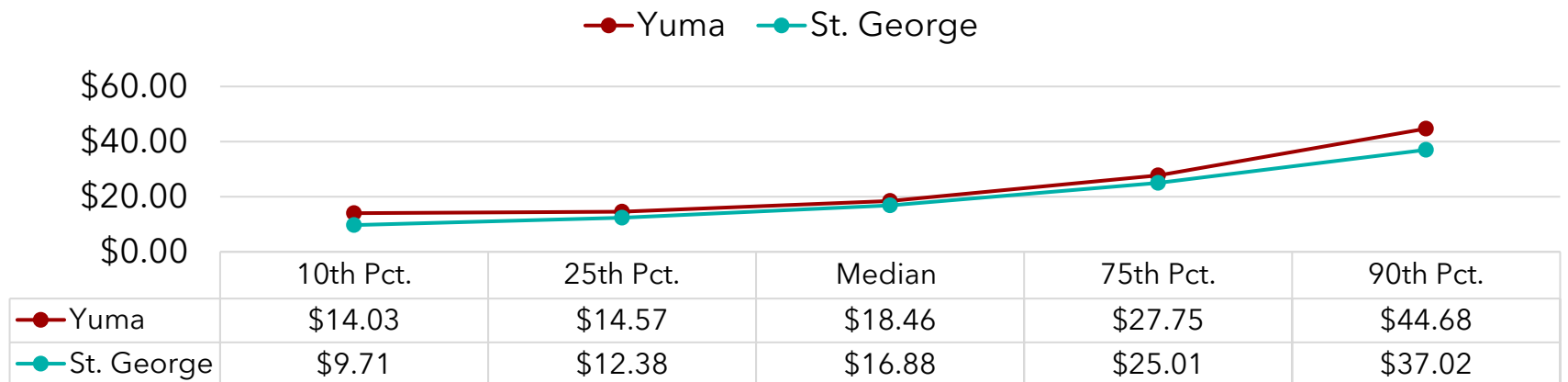
St. George		Yuma
Population		
190,617		106,629
Total Regional Employment		
81,730		61,017
Median Household Income		
\$59,893		\$45,243
Cost of Living		
99.3		85.8
Median Earnings		
\$16.76		\$15.84



Compensation

Hourly compensation comparisons adjusted for cost of living between the City of Yuma and St. George are shown below. As seen, St. George provides very similar hourly wages than Yuma, while higher paying jobs are more compensated in Yuma after COL adjustments.

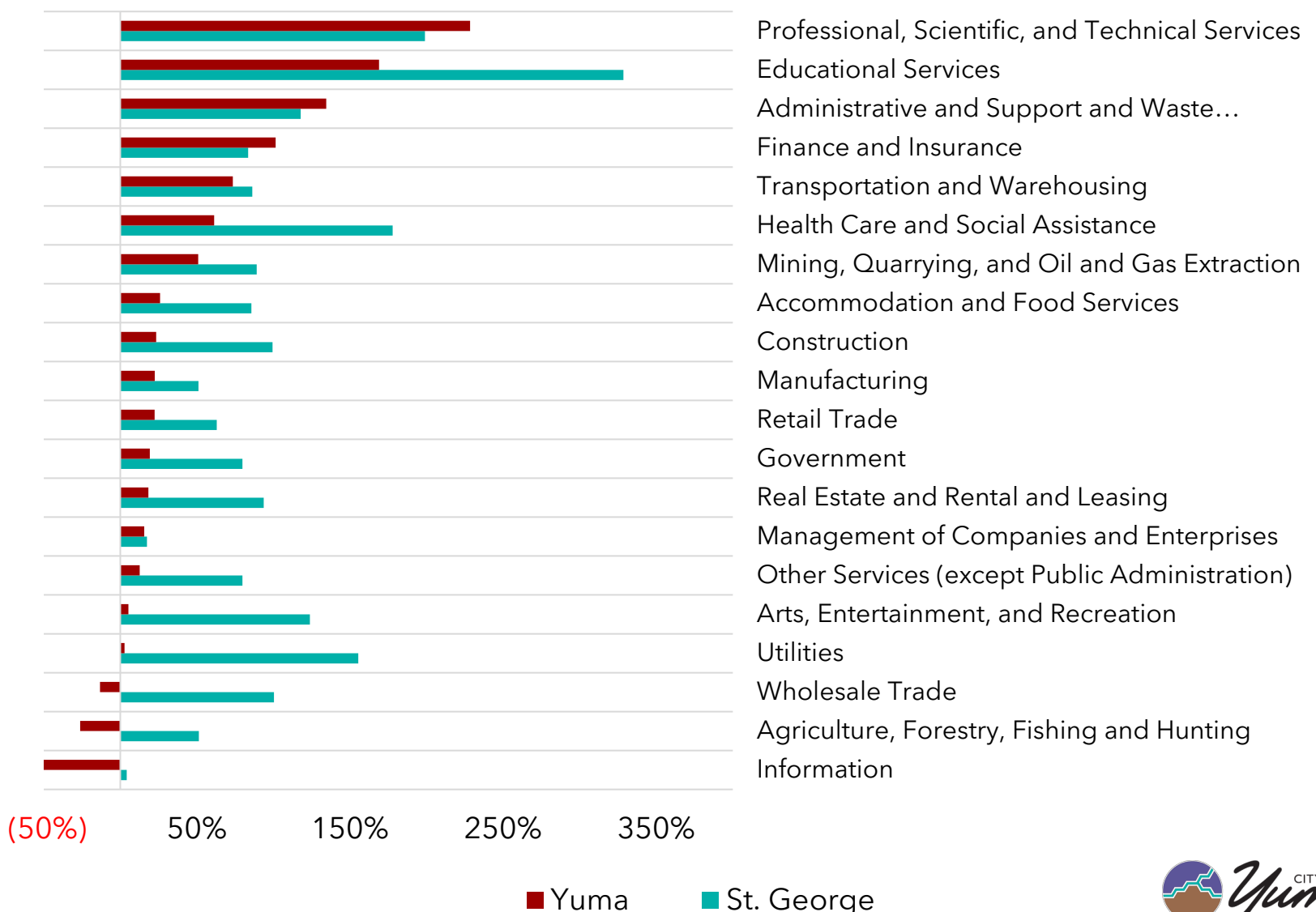
Hourly Compensation Adjusted for COL



Industry

An industry growth comparison is shown below between the City of Yuma and St. George. In the past 20 years, St. George has seen an explosion of new job and employment opportunities based on percent growth in almost every industry, with no industry having a percent decline in jobs. That said, Yuma has competed with this growth in terms of percent growth in many of its fastest growing industries.

Industry Comparison





City of Yuma