
ARVADA ECONOMIC DEVELOPMENT

Arvada, Colorado, Fall 2017

HOMETOWN COLORADO INITIATIVE

A Collaboration between the City of Arvada and the University of Colorado Denver



PROJECT PARTNERS



THE CITY OF ARVADA was founded in 1870 and incorporated in 1904. They are proud of their rich past and strive to enhance their community. The City of Arvada has willingly allowed University of Colorado Denver students to participate in enriching the lives of the residents of Arvada.



UNIVERSITY OF COLORADO DENVER is one of the nation’s top public urban research universities, offering more than 100 academic degrees and programs. The university boasts a diverse teaching and learning community that creates, discovers and applies knowledge to improve the lives of Coloradans and people around the world.



HOMETOWN COLORADO INITIATIVE is a cross-disciplinary initiative led by the University of Colorado Denver that channels higher education resources toward the public good. Faculty and students work directly on topics developed jointly by faculty and city staff. The city benefits from 20,000 to 40,000 student hours to advance livability goals. Students and faculty benefit from opportunities to work with a client on real world projects.

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PROJECT OVERVIEW

INTRODUCTION

This project is driven by the City Council’s 2019 goal to develop 800 new non-retail jobs from businesses within the following targeted industries:

- 1. Medical
- 2. Manufacturing
- 3. Research and development
- 4. Bio-medical
- 5. Energy
- 6. Enabling technology (primarily alpine ski equipment for people with disabilities)
- 7. Professional services.

The project has two main parts: 1) A workforce analysis, and 2) a Primary job industry market analysis. The goal of the first part is to **assess to different segments of the workforce i.e. Career and Technical Services, Health Care; Engineers, etc.** This part of the project is a basic workforce study that looks at the supply of workers by workforce segments and compares the supply in those segments to the demand in the area. The workforce analysis process included:

- 1. Identify Arvada-area labor force segments: workers by occupation, education levels, incomes, and employment status
- 2. Compare Arvada’s workforce segments to Arvada’s Businesses’ workforce segment needs
- 3. Compare the occupations and number of workers in Arvada

by workforce segment to the regional demand for workers in those occupations region

By understanding this information, the City of Arvada can better understand which businesses it can attract or retain, and which businesses it is at risk of losing.

The primary job industry market analysis focused on outlining what type of industry the City can reasonably attract. Similar to the workforce analysis, this study looked at all of the aspects that businesses may consider when locating in Arvada. What are the City of Arvada’s strengths to attract certain types of businesses, and what are the City of Arvada’s challenges? How does the City of Arvada then use this information to make strategic decisions on whether or not to change those strengths and weaknesses?

The Primary job industry market analysis process included:

- 1. Match the 7 identified industry clusters to NAICS codes to identify the number of firms in these industries in Arvada and the rest of the region
- 2. Identify the location of firm clusters in the region and how Arvada may fit within those clusters
- 3. Compare Arvada’s industrial land and infrastructure to other locations in the region that house desired firms in targeted industries
- 4. Identify the occupations for the desired firm types and compare to the occupations of Arvada’s workforce
- 5. Study industry reports on desired firm types to identify their infrastructure needs

The goal of this two-part project is to identify the supply and demand for labor and the business environment for certain types of firms on Arvada's available industrial land.

We conclude with a comparison in the growth of wages, household incomes, housing units, population, housing values and rents in Arvada from 1990 to 2017. The comparison shows that increases in wages and housing units are not keeping up with the growth in housing values, rents, and population. To attract more employers and to keep the existing workforce in Arvada, Arvada needs to invest in more affordable housing that is affordable to industrial workers.

PRIMARY JOB INDUSTRY MARKET ANALYSIS

SELECTION PROCESS AND METHODS

The following process was used to identify different businesses that can City of Arvada attract or retain:

Step 1: Examined Arvada Industrial parcels as opportunity sites

Three sites: Tower Place, Parkway Center, and a section of Candelas were analyzed according to:

- 1. Acreage,
- 2. Number of parcels,
- 3. Total actual value, total actual value/acre,
- 4. Utilities,
- 5. Surrounding area characteristics, and
- 6. Nearby arterials/freeways.

Step 2: Identified small and mid-size industries that require industrial land and might be attracted to the site in Arvada

Within the NAICS industries that matched the seven general industrial categories Identified types of industries that proidentified by City Council, we looked for industries that produce, manufacture, and distribute, goods, and therefor may require industrial land similar to the industrial sites in Arvada. Within these industries we analyzed the specific firms in the region with 100 or fewer employees that provide relatively high wages and employ workers with education levels and occupations similar to Arvada’s workers. We limited the size of firms based on the size of the industrial lot. Firms with more than 100 employee would likely needs larger parcels. As a result: we identified 2,465 businesses in the region categorized within 11 NAICS 2-digit industry categories and 46 NAICS 4-digit industry categories.

The NAICS 2-digit categories are listed in table 1. These businesses were exemplary of industries Arvada may try to attract. The purpose was not to attract these specific firms to Arvada.

Table 1: The NAICS 2-digit categories identified in the region

NAICS 2-Digit Code	2-Digit NAICS Description	# of Firms
21	Mining, quarrying, and oil and gas extraction	44
23	Construction	106
31	Manufacturing	94
32	Manufacturing	76
33	Manufacturing	672
42	Wholesale Trade	676
48	Transportation & Warehousing	46
51	Information	454
54	Professional, scientific, & technical services	147
62	Health Care & Social Assistance	105
81	Other services (except public admin.)	44
TOTAL		2,465

PRIMARY JOB INDUSTRY MARKET ANALYSIS

SELECTION PROCESS AND METHODS

Table 2: The NAICS 4-digit categories identified in the region

NAICS 2-Digit Industry	NAICS 4-digit Description	Number of Firms
21	Support Activities for Mining	44
23	Utility System Construction	106
31	Beverage Manufacturing	50
31	Cut and Sew Apparel Manufacturing	23
31	Dairy Product Manufacturing	1
31	Fruit and Vegetable Preserving and Specialty Food Manufacturing	3
31	Other Food Manufacturing	14
31	Other Textile Product Mills	1
31	Textile Furnishings Mills	2
32	Basic Chemical Manufacturing	5
32	Petroleum and Coal Products Manufacturing	49
32	Pharmaceutical and Medicine Manufacturing	22
33	Aerospace Product and Parts Manufacturing	11
33	Agriculture, Construction, and Mining Machinery Manufacturing	6
33	Architectural and Structural Metals Manufacturing	61
33	Coating, Engraving, Heat Treating, and Allied Activities	18
33	Commercial and Service Industry Machinery Manufacturing	40
33	Communications Equipment Manufacturing	32
33	Electrical Equipment Manufacturing	8

PRIMARY JOB INDUSTRY MARKET ANALYSIS

SELECTION PROCESS AND METHODS

Table 2: The NAICS 4-digit categories identified in the region (Continued))

NAICS 2-Digit Industry	NAICS 4-digit Description	Number of Firms
33	Engine, Turbine, and Power Transmission Equipment Manufacturing	3
33	Hardware Manufacturing	7
33	Industrial Machinery Manufacturing	4
33	Manufacturing and Reproducing Magnetic and Optical Media	8
33	Medical Equipment and Supplies Manufacturing	193
33	Motor Vehicle Manufacturing	9
33	Motor Vehicle Parts Manufacturing	21
33	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	109
33	Other Electrical Equipment and Component Manufacturing	28
33	Other Fabricated Metal Product Manufacturing	47
33	Other Miscellaneous Manufacturing	27
33	Other Transportation Equipment Manufacturing	7
33	Semiconductor and Other Electronic Component Manufacturing	22
33	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	11
42	Apparel, Piece Goods, and Notions Merchant Wholesalers	4
42	Drugs and Druggists' Sundries Merchant Wholesalers	44
42	Grocery and Related Product Merchant Wholesalers	82

PRIMARY JOB INDUSTRY MARKET ANALYSIS

SELECTION PROCESS AND METHODS

Table 2: The NAICS 4-digit categories identified in the region (Continued)

NAICS 2-Digit Industry	NAICS 4-digit Description	Number of Firms
42	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	127
42	Machinery, Equipment, and Supplies Merchant Wholesalers	26
42	Miscellaneous Durable Goods Merchant Wholesalers	60
42	Petroleum and Petroleum Products Merchant Wholesalers	115
42	Professional and Commercial Equipment and Supplies Merchant Wholesalers	218
48	Support Activities for Air Transportation	46
51	Data Processing, Hosting, and Related Services	454
54	Architectural, Engineering, and Related Services	147
62	Medical and Diagnostic Laboratories	105
81	Electronic and Precision Equipment Repair and Maintenance	44

PRIMARY JOB INDUSTRY MARKET ANALYSIS

SELECTION PROCESS AND METHODS

Step 3: Identify firms that could occupy Arvada’s opportunity sites

Step 4: Refined list of businesses according to occupation growth & wages.

Step 5: Created Industry Profiles based on:

We filtered 2,465 businesses according to Arvada’s opportunity site characteristics (small industrial areas, close to non-industrial land-uses, near arterials and highways). As a result: we identified 99 sample businesses in the region, categorized according to 32 NAICS 6-digit industries.

The previous list of 32 NAICS industries, was reduced to 15 industries, resulting in 12 industry profiles.

a. National and regional specific data and trends
b. Regional Distribution of Industry by county and address
c. Firm Examples, with locations, potential challenges, site characteristics
d. Suitability for Arvada’s industrial sites
e. Comparison of Regional Workforce and Existing Arvada Workforce by occupation, wages, and education level.

Table 3: The NAICS 6-digit refined list of businesses according to occupation growth & wages.

Profile	NAICS 6-Digit	NAICS 6-digit Description	Primary Occupation Category	# of Business Prospects	Min. Acres	Max. Acres	Avg. Acres	Avg. Employees
1	312111	Soft drink manufacturing	Beverage manufacturing	1	3.93	4	3.9	36
2	325412	Pharmaceutical preparation manufacturing	Pharmaceutical and medicine manufacturing	4	0.35	3	1.4	26
3	325414	Other biological product manufacturing	Pharmaceutical and medicine manufacturing	2	12.30	5	8.4	65
4	332312	Fabricated structural metal manufacturing	Architectural and structural metals manufacturing	13	0.28	6	3.3	35
5	332813	Electroplating, anodizing, and coloring metal	Coating, engraving, heat treating, and allied activities	3	0.33	3	1.9	35
6	332999	Miscellaneous fabricated metal product mfg.	Other fabricated metal product manufacturing	8	0.51	9	3.4	35
7	333132	Oil and gas field machinery and equipment	Agriculture, construction, and mining machinery manufacturing	1	2.10	2	2.1	60
8	334511	Search, detection, and navigation instruments	Navigational, measuring, electromedical, and control instruments manufacturing	4	1.19	8	15.4	39
9	334512	Automatic environmental control manufacturing	Navigational, measuring, electromedical, and control instruments manufacturing	2	0.83	2	1.5	21
9	334515	Electricity and signal testing instruments	Navigational, measuring, electromedical, and control instruments manufacturing	3	2.52	9	5.3	30
10	334516	Analytical laboratory instrument mfg.	Navigational, measuring, electromedical, and control instruments manufacturing	3	3.95	9	7.6	34
10	334519	Other measuring and controlling device mfg.	Navigational, measuring, electromedical, and control instruments manufacturing	6	0.65	3	1.8	33
11	339112	Surgical and medical instrument manufacturing	Medical equipment and supplies manufacturing	11	1.04	10	6.9	47
12	339114	Dental equipment and supplies manufacturing	Medical equipment and supplies manufacturing	1	0.96	1	1.0	75
12	339116	Dental laboratories	Medical equipment and supplies manufacturing	3	0.81	2	1.1	49

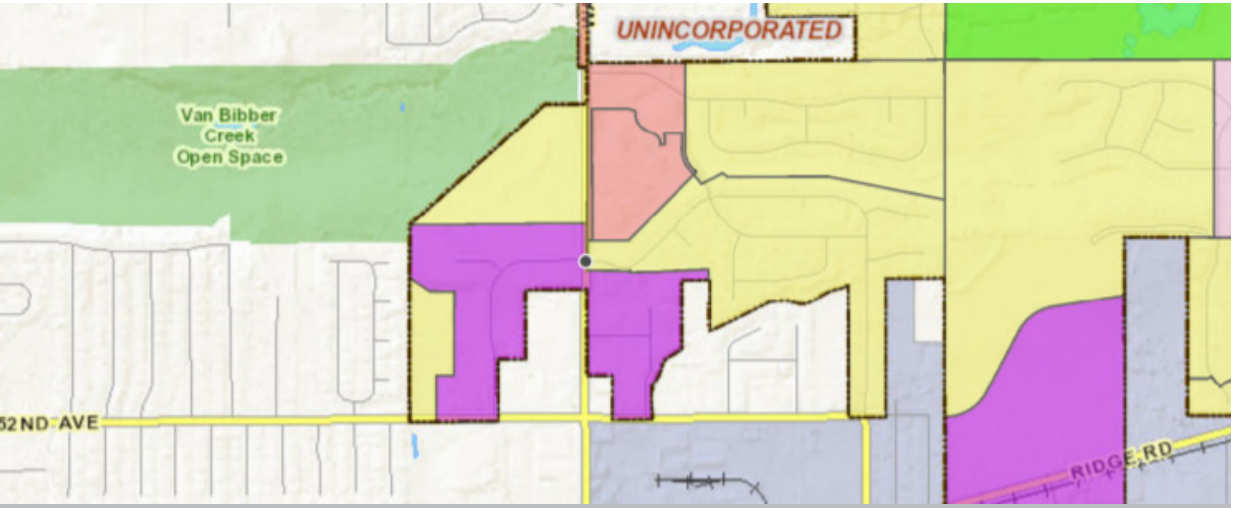
PROFILE OF TARGETED INDUSTRIAL SITES



Tower Place

TOWER PLACE

Located on vacant land with outstanding views of Colorado Front Range including the Peaks Pike, Evans and Longs. Subdivision has all utilities adjacent to each lot. Acceptable uses are: manufacturing, assembly, and office. The site has 11 parcels with total acreage: 12.52 Acres.



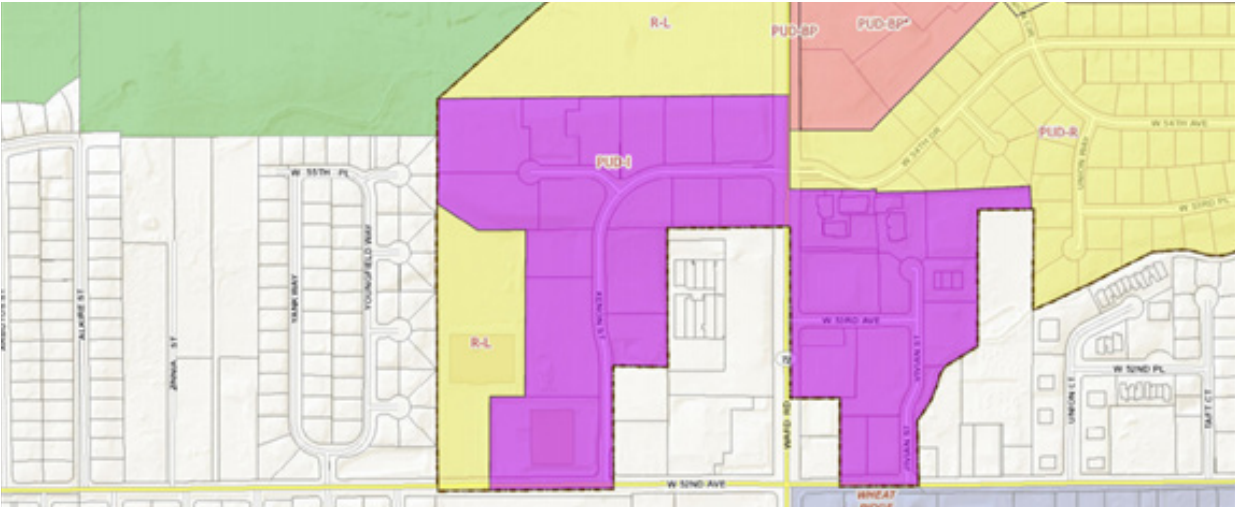
Zoning

Zoning

All parcels in the Tower Place site are zoned as Light industrial.

- Zoning
- Agricultural
 - Conservation
 - Commercial
 - Low Density Residential
 - Medium-High Density Residential
 - Mixed Use
 - Heavy Industrial
 - Light Industrial

PROFILE OF TARGETED INDUSTRIAL SITES



Zoning



Surrounding Context

Zoning

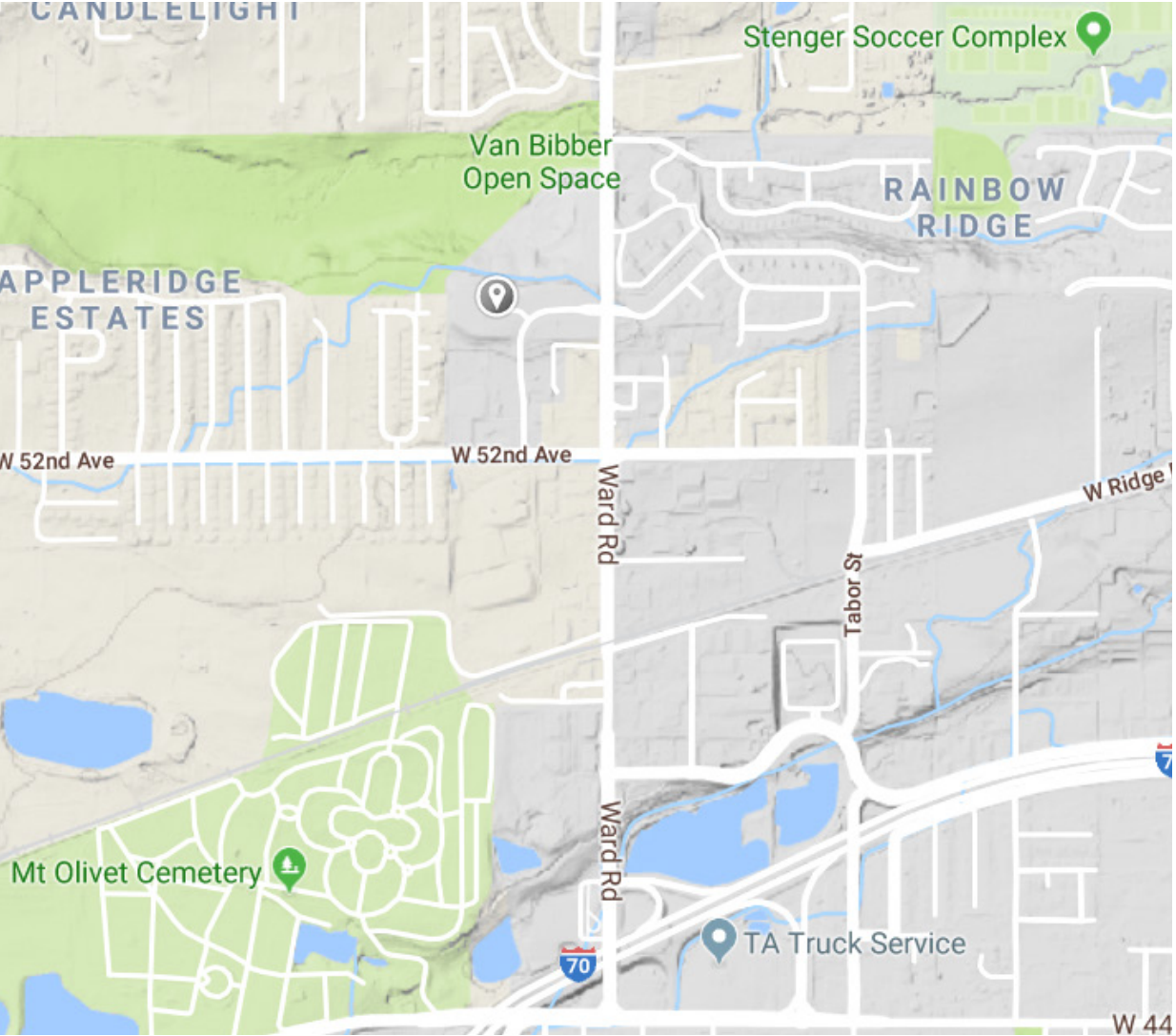
All parcels in the Tower Place site are zoned as Light industrial (PUD-I).

Zoning Codes	General Zoning
PUD-I	Light Industrial
R-L	Low Density Residential
PUD-BP	Commercial
PUD-R	Low Density Residential
B-2	Commercial
C-1	Conservation
PUD-BPR	Mixed Use

Surrounding Context

Tower Place site is surrounded by several different uses such as commercial, low density residential, open space, and light industrial.

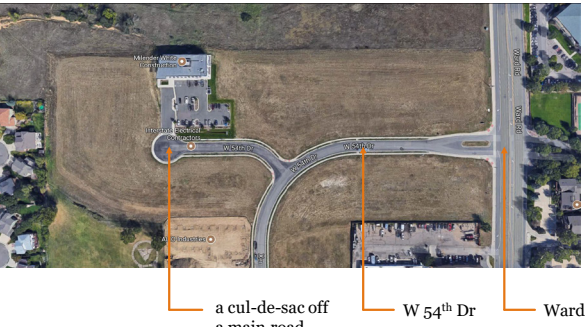
PROFILE OF TARGETED INDUSTRIAL SITES



Main Roads

Main Roads

Tower Place site is six blocks from I-70 on Ward Road in West Suburban Denver metro. It has easy access to the city (Denver) and mountains. There is a full access at 52nd Avenue.



a cul-de-sac off a main road W 54th Dr Ward

PROFILE OF TARGETED INDUSTRIAL SITES

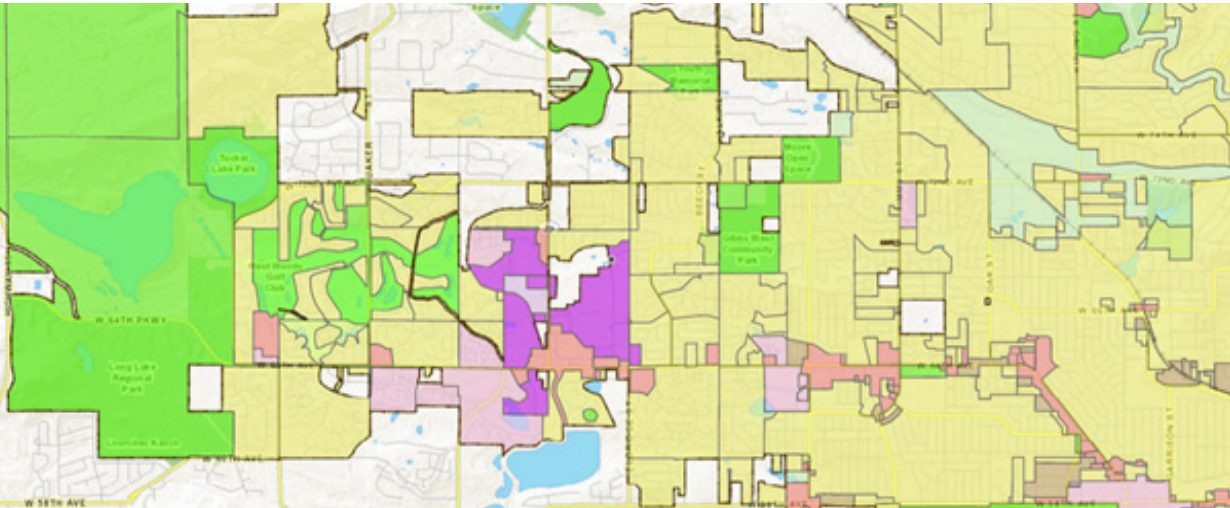
Table 4: Parcels Profile for Tower Place Industrial Site

Parcel ID	Parcel Size (sq. feet)	Actual Value	Assess Value	Parcel Owner	Type
3917202007	56,000	294,000	85,260	662 Meade LLC	Vacant
3917202059	43,560	1,947,000	564,630	MW Real Estate LLC	Commercial
3917202063	45,302	237,836	68,972	Carl D Nelson Living Trust	Vacant
3917202064	45,302	237,836	68,972	Phillips Thomas	Vacant
3917202065	45,302	237,836	68,972	Phillips Thomas	Vacant
3917202066	89,932	472,143	136,921	JMJC LLC	Vacant
3917202067	70,748	219,319	63,603	RGT #2 LLC	Vacant
3917202068	43,618	135,216	39,213	Linco Enterprices LLC	Vacant
3917203002	37,800	198,450	57,551	RGT #2 LLC	Vacant
3917203003	33,453	175,628	50,932	Stamped Concrete Designs Inc	Vacant
3917203004	34,500	181,125	52,526	Suman Properties LLC, Suman Gerald A	Vacant

PROFILE OF TARGETED INDUSTRIAL SITES



Parkway Center



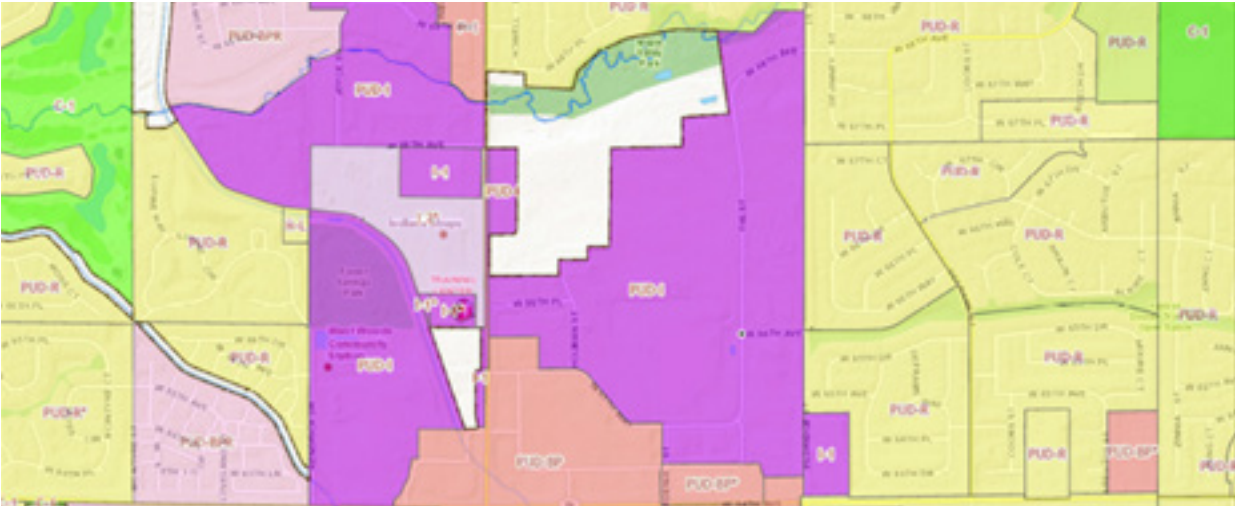
Zoning

PARKWAY CENTER

Zoning
All parcels in the Parkway Center site are zoned as Light industrial.

- Zoning
- Agricultural
 - Conservation
 - Commercial
 - Low Density Residential
 - Medium-High Density Residential
 - Mixed Use
 - Heavy Industrial
 - Light Industrial

PROFILE OF TARGETED INDUSTRIAL SITES



Zoning



Surrounding Context

Zoning

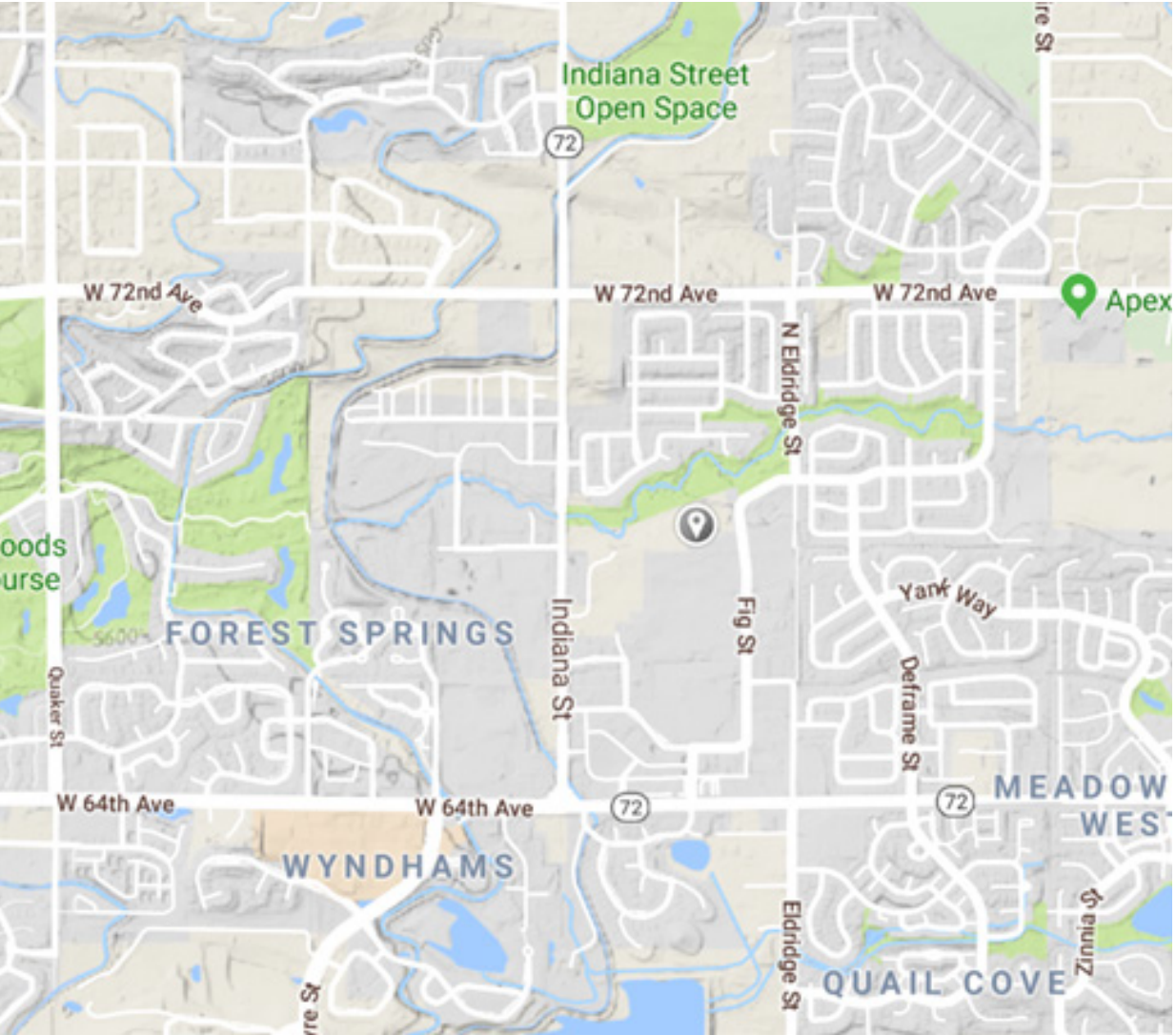
All parcels are in PUD-I, planned unit development industrial district surrounded by PUD-BP (business professional) to the South PUD-R to the East

Zoning Codes	General Zoning
PUD-I	Light Industrial
R-L	Low Density Residential
PUD-BP	Commercial
PUD-R	Low Density Residential
B-2	Commercial
C-1	Conservation
PUD-BPR	Mixed Use

Surrounding Context

Parkway Center site is surrounded by different uses such as commercial, low density residential, mixed use, and light industrial.

PROFILE OF TARGETED INDUSTRIAL SITES



Main Roads

Main Roads

Parkway Center is 0.6 miles to highway 72, 4 miles to I70, 5 miles to CO 58, and 4 miles to CO 93.

PROFILE OF TARGETED INDUSTRIAL SITES

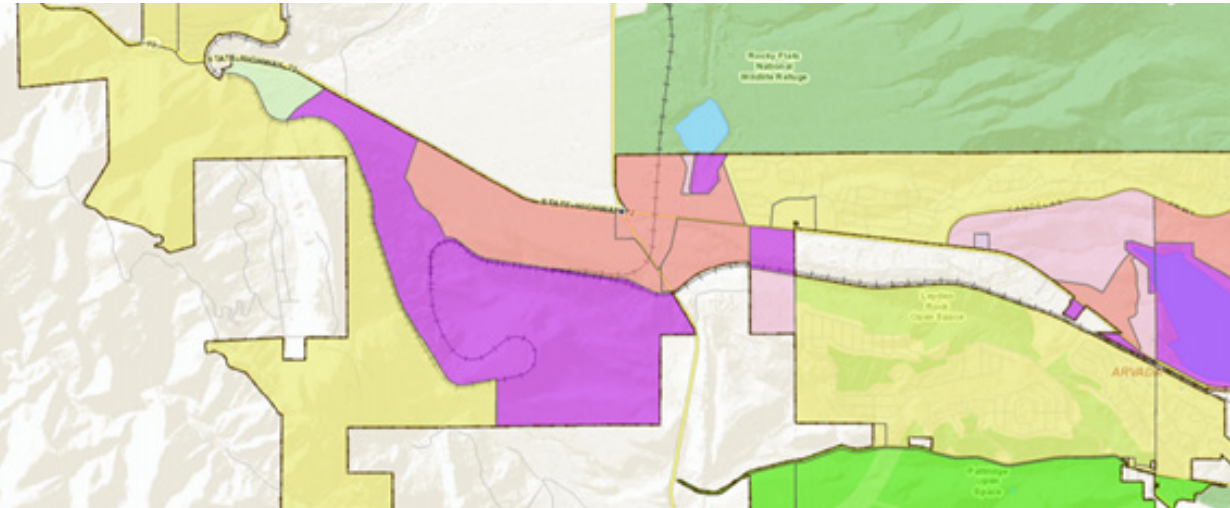
Table 5: Parcels Profile for Parkway Center Industrial Site

Parcel ID	Parcel Size (sq. feet)	Parcel Owner	Actual Value	Assess Value	Type
3906303005	50,530	Parkway Investment Co	40,704	11,804	Vacant
3906303004	50,530	Parkway Investment Co	29,081	8,433	Vacant
3906303003	71,438	Parkway Investment Co	57,544	16,688	Vacant
3906303002	85,813	Parkway Investment Co	69,124	20,046	Vacant
3906303001	84,942	Parkway Investment Co	68,426	19,844	Vacant
3906302004	63,162	Parkway Investment Co	50,880	14,755	Vacant
3906302003	64,904	Parkway Investment Co	52,281	15,161	Vacant
3906302002	65,776	Parkway Investment Co	52,986	15,366	Vacant
3906302002	63,598	Parkway Investment Co	51,231	14,857	Vacant
3906214001	83,200	Parkway Investment Co	67,022	19,436	Vacant
3906215001	60,548	Parkway Investment Co	48,772	14,144	Vacant
3906215002	63,162	Parkway Investment Co	50,880	14,755	Vacant
3906215003	121,097	Parkway Investment Co	97,550	28,290	Vacant
3906213001	63,598	Parkway Investment Co	51,231	14,857	Vacant
3906213001	72,310	Parkway Investment Co	58,249	16,892	Vacant
3906301001	91,476	Hamilton Brothers PropertiesLLC	73,689	21,370	Vacant
3906301002	84,942	Easter Properties LLC	339,768	98,533	Vacant

PROFILE OF TARGETED INDUSTRIAL SITES



Candelas



Zoning

Candelas

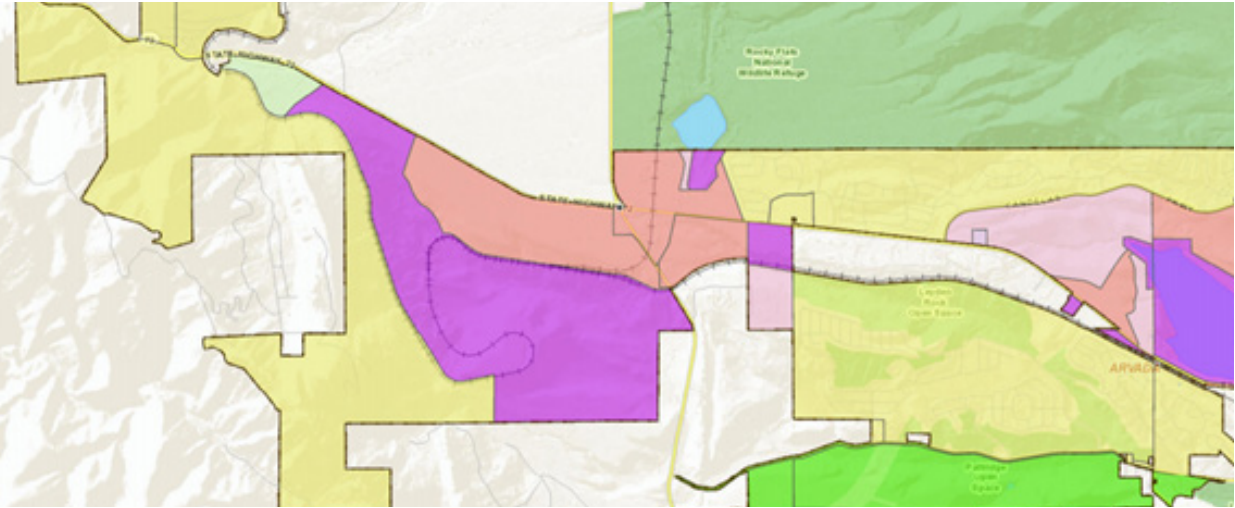
The West Candelas site is situated on the far west boarder of Arvada. The area is part of a new zone district created in the Cimarron and Vauxmont Special Districts which enabled the Candelas development. The site is bounded by low-density zones to the south and west and agriculture on the north-west side, none of which has been developed to date. The access point to the site is along the north side on State Highway 72 and is currently used as a rail road access road. The site is bifurcated by a railroad which goes north and east from the site.

Zoning

8 parcels zoned industrial in adjacent areas, in or around Candelas.

- Zoning
- Agricultural
 - Conservation
 - Commercial
 - Low Density Residential
 - Medium-High Density Residential
 - Mixed Use
 - Heavy Industrial
 - Light Industrial

PROFILE OF TARGETED INDUSTRIAL SITES



Zoning



Surrounding Context

Zoning

All parcels of the site are zoned as NC-IOF: New Community Zoning District Industrial and Office District

Zoning Codes	General Zoning
PUD-I	Light Industrial
R-L	Low Density Residential
PUD-BP	Commercial
PUD-R	Low Density Residential
B-2	Commercial
C-1	Conservation
PUD-BPR	Mixed Use

Surrounding Context

The area around the site is mostly undeveloped: Low-density Single Family, agriculture, mixed-use commercial, Mixed-use office (to the North), and residential, rural, industrial, and low-density residential to the South.

PROFILE OF TARGETED INDUSTRIAL SITES



Main Roads

Main Roads

The parcel is directly adjacent to State Highway 72 (.8 mile) and State Highway 93 as the north/south arterial connecting to Boulder and Golden. State Highway 72 serves as the major east/west arterial which connects with Highway 36 between Boulder and Denver. The ease of access is a considerable asset. Candelas site located 1 mile from Candelas Parkway, and 7 miles from 64th and Quaker St.

PROFILE OF TARGETED INDUSTRIAL SITES

Table 6: Parcels Profile for Candelas Industrial Site

Parcel ID	Parcel Size	Actual Value	Assess Value	Parcel Owner	Type
2020100001	4,055,436	\$53,017,956	\$53,017,956	Denver Board of Water Commissioner	Vacant
2020100001	11,295,108	-	-	Denver Board of Water Commissioner*	Vacant
2020200001	8,067,312	\$2,533,830	\$2,533,830	County Of Jefferson	Vacant
2021300003	3,305,333	\$4,909,436	\$1,423,736	City and County of Denver	Vacant
2021300003	3,305,333	\$4,909,436	\$1,423,736	City and County of Denver	Vacant
2020100001	35,694,936	\$53,017,956	\$15,375,207	City and County of Denver	Vacant
2020100001	35,694,936	\$53,017,956	\$15,375,207	City and County of Denver	Vacant
2020100001	35,694,936	\$53,017,956	\$15,375,207	City and County of Denver	Vacant
2020100001	35,694,936	\$53,017,956	\$15,375,207	City and County of Denver	Vacant

PROFILES OF SELECTED INDUSTRIES

GLOBAL TRENDS ACROSS 15 PROFILED INDUSTRIES

Once we identified the 15 industries, we gathered additional information on their workforce needs, infrastructure or site needs, and regional and national performance. See Table 7.

In terms of site needs, these industries typically require less than 4 acres of land (based on current firm location characteristics), with some locating on sites as small as 1 acre and others requiring more than 7 acres.

The firms by industry averaged from 21 employees to 75. The average wages in the region varied from the national wages in these industries and ranged from \$45,436 to \$141,187.

The occupation structures within these 15 industries offer a broad range of occupations and many of the industries employed workers in the same occupations.

Most of the occupations required high school education for entry-level positions, but some may also need further technical training.; Some industries also offer a range of positions, including bachelor’s and graduate degrees.

Growth in these industries from 2013-2016 varies between the nation and the region. Growth in firms is greater at the national level for several of the industries, but growth in employment for several industries is greater regionally than nationally.

The following pages provide detailed profiles for each of the 15 industries.

PROFILES OF SELECTED INDUSTRIES

Table 7: Global Trends Across 15 Profiled industries

NAICS6-Digit	NAICS6-digit Description	Avg. Acres	Avg. Employees	National Number of Firms /2016	National Growth in Firm Number (2013/2016)	Regional Growth in Firm Number (2013/2016)	National Number of Employees / 2016	National Growth in Employee Number (2013/2016)	Regional Growth in Employee Number (2013/2016)	National Average Annual Wage /2016	Regional Average Annual Wage /2016
312111	Soft drink manufacturing	3.9	36	917	15.0%	-27%	80,180	10%	9%	\$55,012	\$54,232
325412	Pharmaceutical preparation manufacturing	1.4	26	2,327	17.0%	13%	201,665	-3%	157%	\$120,292	\$94,150
325414	Other biological product manufacturing	8.4	65	412	7.0%	0%	31,381	15%	-5%	\$103,457	\$68,868
332312	Fabricated structural metal manufacturing	3.3	35	3,363	1.0%	0%	88,047	3%	23%	\$55,636	\$61,282
332813	Electroplating, anodizing, and coloring metal	1.9	35	2,762	-6.0%	0%	59,989	-4%	75%	\$45,409	\$46,020
332999	Miscellaneous fabricated metal product mfg.	3.4	35	3,537	6.0%	-30%	76,899	2%	129%	\$53,216	\$47,684
333132	Oil and gas field machinery and equipment	2.1	60	1,343	1.5%	0%	55,315	-32%	-29%	\$93,067	\$61,611
334511	Search, detection, and navigation instruments	15.4	39	987	4.0%	-16%	120,578	-4%	3%	\$112,316	\$141,187
334512	Automatic environmental control manufacturing	1.5	21	778	5.0%	6%	27,592	-4%	43%	\$90,685	\$79,233
334515	Electricity and signal testing instruments	5.3	30	778	5.0%	6%	27,592	-4%	43%	\$90,685	\$79,233
334516	Analytical laboratory instrument mfg.	7.6	34	833	8.0%	n/a	34,906	4%	n/a	\$97,896	n/a
334519	Other measuring and controlling device mfg.	1.8	33	833	8.0%	n/a	34,906	4%	n/a	\$97,896	\$97,896
339112	Surgical and medical instrument manufacturing	6.9	47	2,129	17.0%	38%	120,352	2%	130%	\$81,984	\$75,100
339114	Dental equipment and supplies manufacturing	1	75	591	7.0%	-30%	15,326	-4%	n/a	\$62,027	\$45,436
339116	Dental laboratories	1.1	49	591	7.0%	-30%	15,326	-4%	n/a	\$62,027	\$45,436

INDUSTRY OVERVIEW



Industry Overview:
312111 - Soft Drink Manufacturing



Beverage manufacturing covers three different business types, non-alcoholic beverages, alcoholic beverages that require fermentation, and distilled alcoholic beverages.

Examples of products created by this industry include bottled water, ice, and may include businesses like breweries and wineries.

Source: • "Industries at a Glance," Bureau of Labor Statistics
• occupation, wage, educational attainment table



National Growth

National growth numbers show that firms have increased over the three year period by over 100 establishments. A positive percentage change of 15% demonstrates a growing and positively trending industry. The number of jobs change also shows a steady increase along with rising annual wages of approximately 7%. Additionally, the typical occupations and wages show a diverse range of possible jobs making up this industry. Overall the national industry numbers demonstrate steady and solid growth in just this three year period.

National Industry Change (2013 - 2016)

Year	# of Firms	# of Jobs	Average Annual Wage
2013	800	73,063	\$51,318
2016	917	80,180	\$55,012
Percentage Change	15%	10%	7%

Source: • "Quarterly Census of Employment and Wages," Bureau of Labor Statistics



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	11	1,213	\$52,000
2016	8	1,332	\$54,232
Percentage Change	-27%	9%	4%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics 2016 Distribution by County

Average Acres	3.9		# of Firms	# of Jobs
Average Employees	36	Adams	1	36
Average Employee Density (EE/Acre)	9	Arapahoe	1	51
Average Improvement Value/Land Value	6,011	Boulder	4	28
Average Sales Volume	22,449	Broomfield	n/a	n/a
		Denver	6	186
		Jefferson	n/a	46

Source: • "Combined Business Prospects" Table

Source: Regional Growth & Characteristics 2016 page 1



Regional Rationale

The Regional Growth and Characteristics table shows a slight decrease in the overall number of firms, however also demonstrate job growth of over 100 positions in the Denver metro area. Another positive regional growth characteristic is seen in the average annual wage numbers, increasing by 4%. Industry characteristics show moderate acre averages, a substantial amount of employees, as well as, a sizable average sales volume. The industry distribution is mostly balanced, with the largest concentration located in Denver County.

INDUSTRY OVERVIEW



Flow Tech Bottling
of Employees: 36
Street, City, County: 15820 W 6th Ave, Golden CO 80401
Distance to Nearest Arterial: .5 mi. to Indiana St.
Distance to Freeway: .25 mi to I-70
Land Value/Acre: \$1,259,898.21
Improvement Value: \$3,961,000.00
Growth (2013-2016): not available

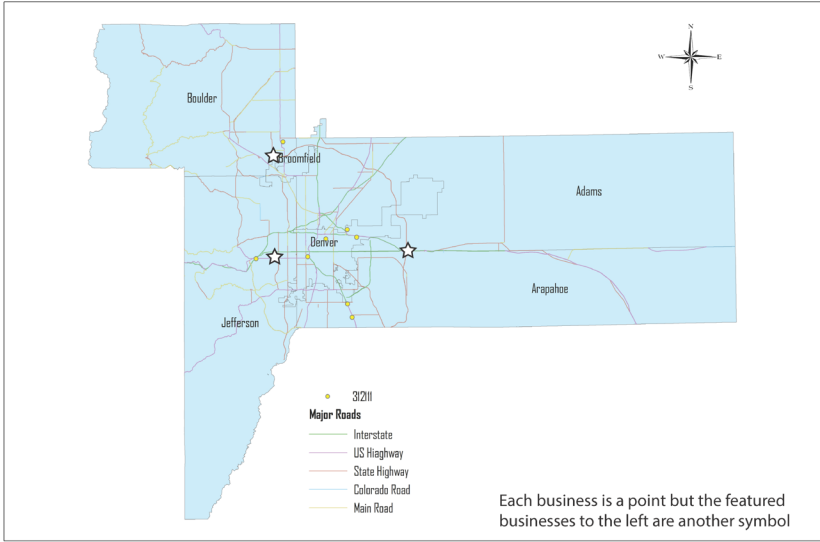


Niagara Bottling
of Employees: 36
Street, City, County: 1923 Gun Club Rd, Aurora, CO 80019
Distance to Nearest Arterial: .25 mi. to 19th Ave
Distance to Freeway: .5 mi. to I-70
Land Value/Acre: \$500
Improvement Value: \$0.00
Growth (2013-2016): not available



Pixie Mate
of Employees: 25
Street, City, County: 4720 Table Mesa Dr, Boulder, CO 80305
Distance to Nearest Arterial: .25 mi. to Table Mesa Dr.
Distance to Freeway: .5 mi. to US-36
Land Value/Acre: \$222,140
Improvement Value: \$1,164,778.00
Growth (2013-2016): not available

Location of Businesses in NAICS Code



Each business is a point but the featured businesses to the left are another symbol

• Would it be better at Tower, Parkway, or Candelas?
This type of business is an average of four acres, which means it could be a business in the Tower or Parkway sites in Arvada.

• Does it pollute or produce hazardous waste?
Soft drink and related beverage manufacturing can produce liquid waste, which should be disposed of in an environmentally responsible manner. Additionally, it can also require a substantial amount of water in the production process.

• Does it have a lot of truck traffic for supplies coming in and products going out?
It does require shipment of products which can generate frequent truck traffic.

• Would they operate the factory on a 24 hour schedule?
No

• Will it need to combine several parcels?
Sample businesses were an average of four acres, Tower and Parkway were a little under that average, ranging from one to three acres. Therefore more land may need to be purchased to accomdate these businesses.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

Is an issue

Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Data	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupational Title	Entry Level Education	Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Avg. Wage	Less than High School	High School	Some College	4 Year College	> College
Driver/Sales Workers	High School Diploma	\$25,953	0.3%	4,470	1.80%	1,117	\$42,395	0	182	230	134	215
First Line Supervisors	High School Diploma	\$67,433	0.3%	4,750	0.59%	365	\$47,863	0	193	135	48	27
Industrial Production Managers	Bachelor's Degree	\$118,170	0.0%	840	0.29%	179	\$79,134	0	76	15	83	13
Laborers, Stock, Material Movers	No Formal Education	\$28,983	1.5%	25,800	0.78%	481	\$29,085	87	498	111	53	0
Packaging & Filling Machine Operators	High School Diploma	\$34,250	0.2%	4,120	0.10%	62	\$29,032	0	69	25	0	0

Source:
• "Occupation Table on Page 3.xlsx"

Discussion

The soft drink manufacturing industry includes a diverse set of occupations, that range in education and wage levels. Some of these occupations can provide a career ladder if also paired with more vocational training and/or increased educational attainment. Having some form of additional vocational training may be especially important considering that three of the listed occupations make less than \$30,000 a year in the Denver metro area. However, when looking at the specific Arvada numbers, they show higher annual wages for some of these occupations. This is true for the Driver/Sales Worker occupation which is estimated to pay \$16,000 more in Arvada. Another notable difference when comparing the metro region to Arvada is seen in the decreased annual wages for the First Line Supervisors and Industrial Production Manager positions. Three of the listed occupations require a high school diploma as the entry level education necessary, one does not specify a required educational attainment, and lastly one occupation asks for a bachelor's degree. When looking at the Arvada education levels for these occupations, they are distributed across all education categories. High School Diplomas make up the largest concentration, followed by the Some College category.

312111

Soft Drink Manufacturing

INDUSTRY OVERVIEW



Industry Overview:
325412 - Bioscience, Pharmaceuticals and Biotech



The Pharmaceutical Preparation Manufacturing industry (NAICS code 325412) is involved in the manufacturing of a variety of pharmaceutical drugs that are internally and externally consumed in different forms. The industry is involved in the final stages of medicinal manufacturing - products include tablets, capsules, ointments, powders, and solutions among others. This industry is also engaged in activity with other industries involved in the process of manufacturing medicinal compounds and vaccines.



National Status

The number of firms in this industry has grown rapidly seeing a 17% increase from 2013-2016. The number of employees in the industry has not grown anywhere near the same rate seeing only 1% increase during this same time period suggesting that there is demand for the skilled labor needed in the industry. The average annual wage has increased slightly, however it is already far above the average median income for any of the six counties in the metro area at \$120,292.

National Industry Change 2013 - 2016			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	1,942	206,988	\$118,269
2016	2,327	201,665	\$120,292
Percentage Change	17%	-3%	2%

Source: "Quarterly Census of Employment and Wages," Bureau of Labor Statistics

Typical Occupations & National Average Annual Wage	
Chemical equipment operators	\$50,880
Chemical technicians	\$51,240
Chemists	\$79,420
Mixing and blending machine setters	\$38,450
Packaging and filling machine operators	\$32,230

Source: "Industries at a Glance," Bureau of Labor Statistics



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	30	327	\$117,126
2016	34	842	\$94,150
Percentage Change	13%	157%	-20%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County	
Average Acres	3.41		
Average Employees	20	Adams	1
Average Employee Density (EE/Acre)	29	Arapahoe	3
Average Improvement Value/Land Value	2.46	Boulder	11
Average Sales Volume	27,314	Broomfield	2
		Denver	17
		Jefferson	n/a
			2

Source: "Combined Business Prospects" Table

Source: Regional Growth & Characteristics 2016 page 1



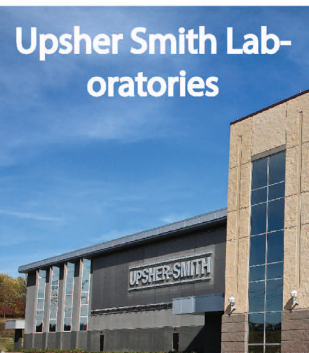
Regional Rationale

The firm growth of this industry in the metro region has been about equal with the national growth at 13%. Regionally, the number of jobs in the industry has increased dramatically by 157% between 2013-2016. This increase in the number of jobs has been accompanied by a decrease in average annual wage. Though the average wage has decreased, it remains high at \$94,150.

INDUSTRY OVERVIEW



Merck Sharp & Dohme Corp
of Employees: 60
Street, City, County: Central Ave, Boulder
Distance to Nearest Arterial: 0.25 mile to 93
Distance to Freeway, Name: 1 mile to I-36
Land Value: \$1,924,100 (1.66 acres)
Improvement Value: \$1,551,800
Growth (2013-2016): 288%

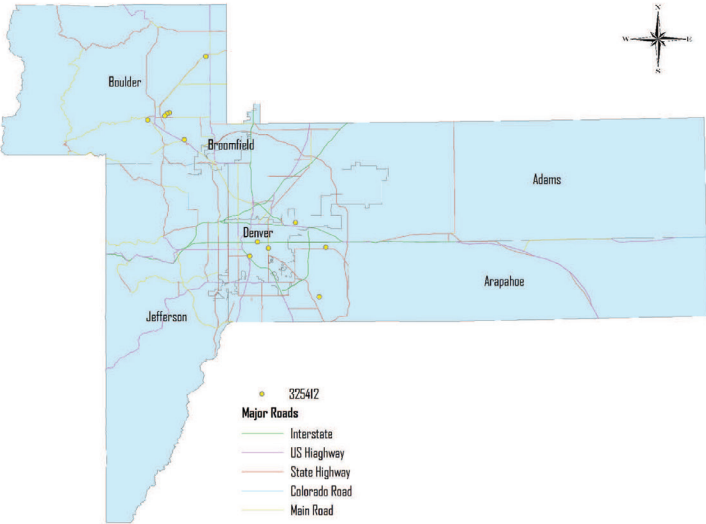


Upsher Smith Laboratories
of Employees: 60
Street, City, County: Ironton St, Denver, CO
Distance to Nearest Arterial: 0.1 mile to W Alameda Ave
Distance to Freeway, Name: 0.3 miles to I-25
Land Value: \$7,092,200 (4.39 acres)
Improvement Value: \$1,000,000
Growth (2013-2016): 0%



Pkom Ventures
of Employees: 43
Street, City, County: Range St, Boulder
Distance to Nearest Arterial: 0.3 miles to Arapahoe Ave
Distance to Freeway, Name: 2 miles to US-36
Land Value: \$1,019,100 (0.85 acres)
Improvement Value: \$326,800
Growth (2013-2016): N/A

Location of Businesses in NAICS Code



- **Would it be better at Tower, Parkway, or Candelas?**
This type of business is an average of 3.4 acres, which means it could be a good fit for either the Tower Place or Parkway Center sites.
- **Does it pollute or produce hazardous waste?**
The waste produced by pharmaceutical preparation manufacturing is an important factor to consider. Organic and chemical waste is produced during the manufacturing process and is disposed of through different methods.
- **Does it have a lot of truck traffic for supplies coming in and products going out?**
Businesses in this industry have shipments coming in and leaving the facility, however the products are small and thus require less space when shipped.
- **Would they operate the factory on a 24 hour schedule?**
No
- **Will it need to combine several parcels?**
The average acreage needed to operate a business in this industry is 3.4 acres. The Tower Place and Parkway Center sites have single lots that could accommodate smaller businesses, but it is likely that two parcels may need to be combined.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

Is an issue
Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Chemical equipment operator	High School Diploma	\$37,190	0%	650	0.13%	79	N/A	0	43	36	0	0
Chemical technician	Associate's Degree	\$57,090	0%	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chemist	Bachelor's Degree	\$77,480	0.1%	1,640	0.03%	73	\$87,054	0	0	0	59	14
Mixing and blending machine setter	High School Diploma	\$34,983	0%	660	0.04%	25	N/A	0	25	0	8	0
Packaging and filling machine operators	High School Diploma	\$34,250	0.2%	4,120	0.1%	62	\$29,032	0	69	25	0	0

The jobs in this industry require a range of educational qualifications. Though there are common occupations only requiring a high school dimploma, others require an associate or bachelor's degree. Though data for the annual wages in Arvada is unavailable for a few occupa-tions, from the regional data it is evident that common occupations in this industry would allow an employee to earn a living wage. Arvada does not currently have a large portion of it's workforce involved in this industry, however given the relatively low educaitonal barriers for entry, it is reasonable to believe Arvada could provide the needed workers for new business should they choose to locate in Arvada.

325412
Bioscience, Pharmaceuticals and Biotech

INDUSTRY OVERVIEW



Industry Overview:
325414 - Biological Product Manufacturing



Biological product manufacturing is categorized as a chemical manufacturing industry cluster. It is described as the transformation of organic and inorganic raw material through a chemical process.

Examples of products created by this industry include pharmaceutical and medicinal goods.

Source: •"Industries at a Glance," Bureau of Labor Statistics
• occupation, wage, educational attainment table



National Growth

National growth numbers show that firms have increased slightly over the three year period by approximately 30 establishments. The number of jobs increase was more substantial, increasing by close to 4,000 jobs. Relatedly, there was also a rise in annual wages, by more than \$7,000. The three categories of percentage change all show positive growth, demonstrating a positive growth industry across all categories.

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	384	27,322	\$96,254
2016	412	31,381	\$103,457
Percentage Change	7%	15%	7%

Source: •"Quarterly Census of Employment and Wages," Bureau of Labor Statistics



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	6	128	\$60,920
2016	6	122	\$68,868
Percentage Change	0%	-5%	13%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County		
Average Acres	8.4		#of Firms	# of Jobs
Average Employees	65	Adams	n/a	n/a
Average Employee Density (EE/Acre)	7.7	Arapahoe	2	n/a
Average Improvement Value/Land Value	1.90	Boulder	1	30
Average Sales Volume	5,966	Broomfield	n/a	n/a
		Denver	2	100
		Jefferson	n/a	2

Source: •"Combined Business Prospects" Table

Source: Regional Growth & Characteristics 2016 page 1



Regional Rationale

The Regional Growth and Characteristics table shows no firm growth in the three year period and some job loss. However, there was a 13% increase in average annual wages, rising by approximately \$8,000. Another positive charcteristic is seen in higher wages offered for occupations in the industry.

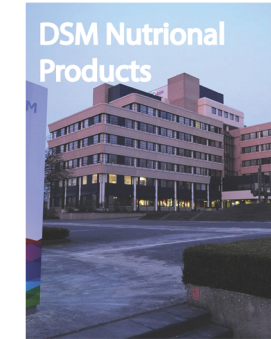
Biological product manufacturing requires just over 8 acres of space, and has an average of 65 employees. The distribution information is not available for most of the counties, particularly for such specific counts.

325414
Biological Product Manufacturing

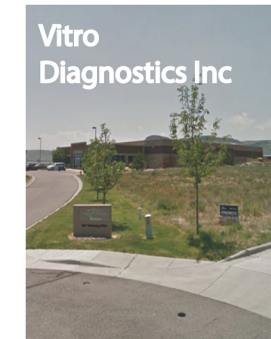
INDUSTRY OVERVIEW



Colorado Serum Company
of Employees: 100
Street, City, County: 4950 York St, Denver, CO 80216
Distance to Nearest Arterial: .25 mi. to Brighton Blvd.
Distance to Freeway: .5 mi. to I-70
Land Value/Acre: \$181,146
Improvement Value: \$3,139,900.00
Growth (2013-2016): not available

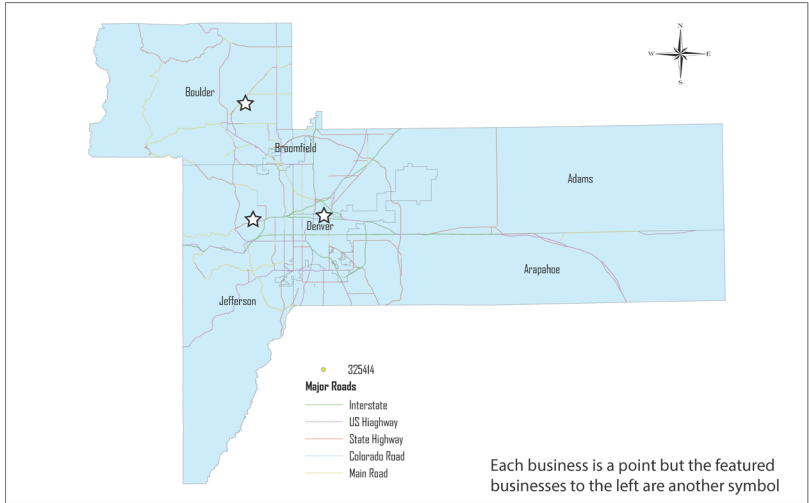


DSM Nutritional Products
of Employees: 30
Street, City, County: 4909 Nautilus Ct, Boulder, CO 80301
Distance to Nearest Arterial: .25 mi to 63rd St.
Distance to Freeway: .5 mi. to CO-119
Land Value/Acre: \$200,224
Improvement Value: \$5,686,831.00
Growth (2013-2016): not available



Vitro Diagnostics Inc
of Employees: 2
Street, City, County: 4621 Technology Dr Golden, CO 80403
Distance to Nearest Arterial: .25 mi to McIntyre St.
Distance to Freeway: 2 mi to I-70
Land Value/Acre: \$104,938
Improvement Value: \$1,351,000.00
Growth (2013-2016): not available

Location of Businesses in NAICS Code



• Would It be better at Tower, Parkway, or Candelas?

This type of business is on average a little more than eight acres, which means it could be a business in the Candelas site or a similar location in Arvada.

• Does It pollute or produce hazardous waste?

Biological product manufacturing can produce some hazardous waste which should be disposed of in an environmentally responsible manner.

• Does It have a lot of truck traffic for supplies coming in and products going out?

Moderate truck traffic, depending on size of establishment

• Would they operate the factory on a 24 hour schedule?

No

• Will It need to combine several parcels?

It may need the combination of several parcels to accomdate for the eight acre size required.

Other Issues:

Noise



Traffic



Pollution



Property Values



Trash



Lights



Smells



○ Is an issue
○ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Data	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupational Title	Entry Level Education	Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Avg. Wage	Less than High School	High School	Some College	4 Year College	> College
Chemical Equipment Operators	High School Diploma	\$37,190	0.0%	650	0.13%	79	\$35,690	0	43	36	0	0
Chemical Technicians	Associate's Degree	\$44,757	0.0%	780	0.24%	148	\$37,466	0	33	55	47	51
Chemists	Bachelor's Degree	\$77,480	0.1%	1,640	0.12%	73	\$87,055	0	0	0	59	14
Mixing & Blending Machine Setters	High School Diploma	\$34,983	0.0%	660	0.04%	25	\$65,000	0	25	0	0	0
Packaging & Filling Machine Operators	High School Diploma	\$34,250	0.2%	4,120	0.10%	62	\$29,032	0	69	25	0	0

Source:
•"Occupation Table on Page 3.xlsx"

Discussion

Biological product manufacturing occupations demonstrate a mix of entry level education requirements. The industry also has a concentration of middle to low income wage groupings. There may also be some opportunities for career upward mobility, specifically for the more production and operations occupations if paired with some vocational training. And as seen with many of the occupations, if they require more for entry level education qualifications, they also tend to have higher annual wages, as seen with the chemists in the national and metro Denver data. Importantly, this pattern does not prove true for chemical equipment operators and mixing, blending machine setters specifically for Arvada. This could be attributed to more people in this category having some college education in Arvada, as opposed to people having just a high school diploma as seen in the national data.

325414
Biological Product Manufacturing

INDUSTRY OVERVIEW



Industry Overview:
332312 - Fabricated structural metal manufacturing



Industries in the Fabricated Metal Product Manufacturing sub-sector transform metal into intermediate or end products, other than machinery, computers and electronics, and metal furniture, or treat metals and metal formed products fabricated elsewhere. Important fabricated metal processes are forging, stamping, bending, forming, and machining, used to shape individual pieces of metal; and other processes, such as welding and assembling, used to join separate parts together. Establishments in this sub-sector may use one of these processes or a combination of these processes. Example products by this industry include Barge sections, prefabricated metal, Bars, concrete reinforcing, and many other manufacturing.

Source: <https://www.bls.gov/iag/tgs/iag332.htm>



National Growth

National growth numbers show that firms have increased over the three year period by 32 establishments. A positive percentage change of 1% demonstrates a growing and positively trending industry. The number of jobs change shows a positive percentage change of 3% . And the average annual wage from 2013 to 2016 demonstrates positive percentage change of 7% .

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	3,331	85,214	\$51,339
2016	3,363	88,047	\$55,636
Percentage Change	1%	3%	7%

Source: Quarterly Census of Employment and Wages," Bureau of Labor Statistics https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables



Typical Occupations & National Average Annual Wage	
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	\$34,570
First-line supervisors/managers of production and operating workers	\$61,130
Machinists	\$41,700
Team assemblers	\$32,110
Welders, cutters, solderers, and brazers	\$39,360

Source: "Industries at a Glance," Bureau of Labor Statistics <https://www.bls.gov/iag/tgs/iag332.htm>

Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	19	233	\$56,262
2016	19	286	\$61,282
Percentage Change	0%	23%	9%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County	
Average Acres	3.3	# of Firms	# of Jobs
Average Employees	35	Adams	6
Average Employee Density (EE/Acre)	11	Arapahoe	2
Average Improvement Value/Land Value	2.9	Boulder	1
Average Sales Volume	\$9,160	Broomfield	N/A
		Denver	5
		Jefferson	5

Source: "Combined Business Prospects" Table

Source: Regional Growth & Characteristics 2016 page 1

Regional Rationale

The Regional Growth and Characteristics table shows no firm growth in the last three years. However the number of jobs increased by 23% and and the average annual wage increased by 9%.

Fabricated structural metal manufacturing requires 3.3 acres of space on average, and has an average of 35 employees. The industry distribution Across the metro area shows various types of firm sizes located in almost All of the six county study area, with the highest number of firms and total Jobs in Denver County. Some of the occupational data on average wages

332312
Fabricated structural metal manufacturing

INDUSTRY OVERVIEW

Aero Solutions LLC



Aero Solutions LLC
of Employees: 20
Street, City, County: 5555 Central Ave , Boulder, Boulder
Distance to Nearest Arterial: 0.6 mi. to Arapahoe Avenue.
Distance to Freeway: 2 mi to Colorado-36
Land Value/Acre: \$573,821
Improvement Value: \$3,011,600
Growth (2013-2016): not available

Drake Williams Steel



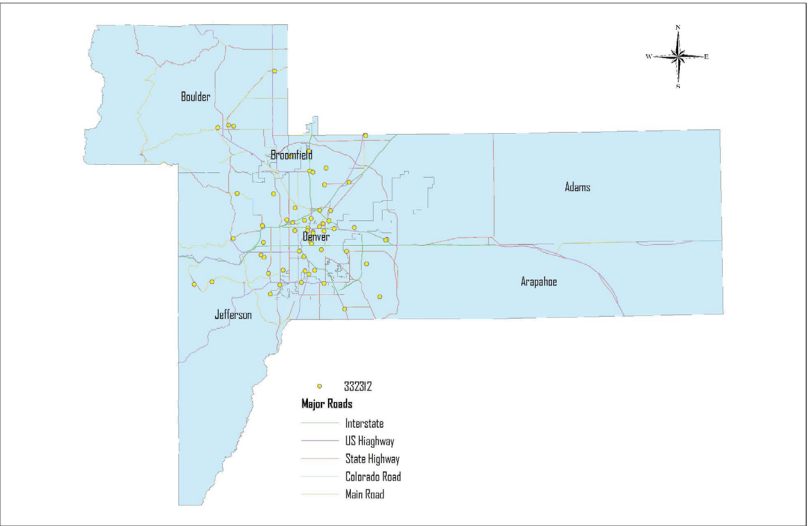
Drake Williams Steel
of Employees: 50
Street, City, County: 1923 Gun Club Rd, Aurora, Adams
Distance to Nearest Arterial: 0.13 mi. to 1Smith Road
Distance to Freeway: 0.2mi. to I-70
Land Value/Acre: \$102,366
Improvement Value: \$1,571,608
Growth (2013-2016): not available

Eaton Metal Products Co



Eaton Metal Products Co
of Employees: 100
Street, City, County: 4800 York St, Denver, Denver
Distance to Nearest Arterial: on York Street
Distance to Freeway: 0.3 mi. to I-70
Land Value/Acre: \$194,180
Improvement Value: \$1,836,700
Growth (2013-2016): not available

Location of Businesses in NAICS Code



• Would It be better at Tower, Parkway, or Candelas?

This type of business is an average of three acres, which means it could be a business in the Tower or Parkway sites in Arvada.

• Does It pollute or produce hazardous waste?

There are five general production operations common to the metal fabrication and finishing source categories that can emit MFHAP. These five production operations are: Dry abrasive blasting; (2) dry grinding and dry polishing with machines; (3) machining; (4) spray painting; and (5) welding.

• Does it have a lot of truck traffic for supplies coming in and products going out?

It does require shipment of products which can generate frequent truck traffic.

• Would they operate the factory on a 24 hour schedule?

No

• Will It need to combine several parcels?

Sample businesses were an average of three acres, Tower and Parkway have parcels that rang from one to three acres. Therefore they can accommodate these businesses.

Other Issues:

Noise



Traffic



Pollution



Property Values



Trash



Lights



Smells



Is an issue
Is not an issue

332312
Fabricated structural metal manufacturing

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	High school diploma	\$36,395	0.1%	940	0.04%	25	25	0	0	9	0	0
First-line supervisors of production and operating workers	High school diploma	\$67,433	0.3%	4,750	0.6%	365	\$47,863	0	193	135	48	27
Machinists	High school diploma	\$47,228	0.2%	3,260	3%	179	\$55,418	0	105	124	15	0
Team assemblers	High school diploma	\$34,798	0.2%	3,190	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welders, cutters, solderers, and brazers	High school diploma	\$46,638	0.2%	3,450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source:
• "Occupation Table on Page 3.xlsx"

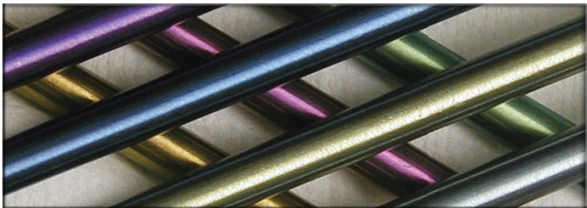
Fabricated structural metal manufacturing requires high school or bachelor's degree depending on the specific occupation. The Average annual wage range from \$15,000 to \$108,540. The highest share of the industry is the occupation is Metal workers and plastic workers (28.5% of the total industry) with an annual wage of \$58,269. Most of the occupations does not require high level of education which correspond with the average wages levels.

332312
Fabricated structural metal manufacturing

INDUSTRY OVERVIEW



Industry Overview:
332813 - Electroplating, anodizing, and coloring metal



Establishments primarily engaged in all types of electroplating, plating, anodizing, coloring, and finishing of metals and formed products for the trade. Also included in this industry are establishments which perform these types of activities, on their own account, on purchased metals or formed products. Establishments that both manufacture and finish products are classified according to the products.

Source: https://www.osha.gov/pls/irmis/sic_manual.display?id=737&tab=description



National Growth

National growth numbers show that firms have decreased over the three year period by 161 establishments. A negative percentage change of 6% demonstrates a declining trending of the industry. The number of jobs change shows a negative percentage change of 4% . And the average annual wage from 2013 to 2016 demonstrates positive percentage change of 5% .

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	2,923	62,200	\$43,090
2016	2,762	59,989	\$45,409
Percentage Change	-6%	-4%	5%

Source: Source: • "Quarterly Census of Employment and Wages," Bureau of Labor Statistics
https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	16	89	\$39,780
2016	16	156	\$46,020
Percentage Change	0%	75%	17%

Source: Master Cluster NAICS6 County_2013

Industry Characteristics		2016 Distribution by County		
Average Acres	1.9	Adams	# of Firms	# of Jobs
Average Employees	35	Arapahoe	5	N/A
Average Employee Density (EE/Acre)	18	Boulder	N/A	N/A
Average Improvement Value/Land Value	2.48	Broomfield	2	N/A
Average Sales Volume	\$8,579	Denver	1	N/A
		Jefferson	4	65
			4	91

Source:
• "Combined Business Prospects" Table

Source:
Regional Growth & Characteristics 2016 page 1



Regional Rationale

The Regional Growth and Characteristics table shows no firm growth in the last three years. However the number of jobs increased by 75% and the average annual wage increased by 17%.

Electroplating, anodizing, and coloring metal requires 1.9 acres of space on average, and has an average of 35 employees. The industry distribution Across the metro area shows various types of firm sizes located in almost All of the six county study area, with the highest number of firms and total Jobs in Jefferson County. Some of the occupational data on average wages also show that the industry does provide jobs with livable wages.

332813

Electroplating, anodizing, and coloring metal

INDUSTRY OVERVIEW



Accurate Industries
of Employees: 28
Street, City, County: 4941 Allison St #9, Arvada, Jefferson
Distance to Nearest Arterial: 0.3 mi. to Wadsworth Boulevard.
Distance to Freeway: 0.13 mi to I-70
Land Value/Acre: \$227,593
Improvement Value: \$2,194,000
Growth (2013-2016): not available

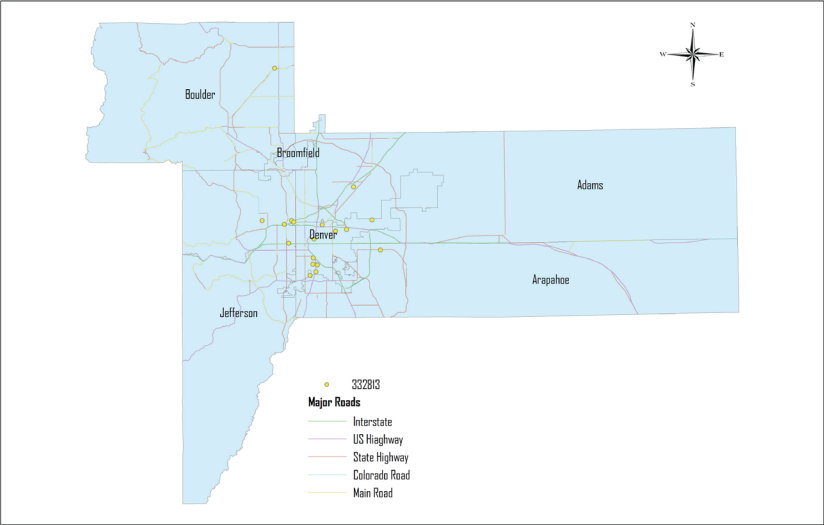


Advanced Surface Technologies
of Employees: 50
Street, City, County: 6155 W 54th Ave, Arvada, Jefferson
Distance to Nearest Arterial: 0.6 mi. to Sheridan Boulevard
Distance to Freeway: 0.7 mi. to I-76
Land Value/Acre: \$137,346
Improvement Value: \$1,697,600
Growth (2013-2016): not available



Advanced Surface Technology
of Employees: 28
Street, City, County: 6155 W 54th Ave, Arvada, Jefferson
Distance to Nearest Arterial: 0.6 mi. to Sheridan Boulevard
Distance to Freeway: 0.7 mi. to I-76
Land Value/Acre: \$266,273
Improvement Value: \$325,100
Growth (2013-2016): not available

Location of Businesses in NAICS Code



- **Would It be better at Tower, Parkway, or Candelas?**
This type of business is an average of two acres, which means it could be a business in the Tower or Parkway sites in Arvada.
- **Does It pollute or produce hazardous waste?**
Metal finishing rely heavily on chemical suppliers to optimize existing processes and to investigate new solutions. Chemical and electrochemical conversion processes include phosphating, chromating, anodizing, passivation, and metal coloring.
- **Does it have a lot of truck traffic for supplies coming in and products going out?**
It does require shipment of products which can generate frequent truck traffic.
- **Would they operate the factory on a 24 hour schedule?**
No
- **Will It need to combine several parcels?**
Sample businesses were on average of two acres, Tower and Parkway have parcels that rang from one to three acres. Therefore they can accommodate these businesses.

Other Issues:

Noise



Traffic



Pollution



Property Values



Trash



Lights



Smells



○ Is an issue
○ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	High school diploma	\$36,395	0.1%	940	0.04%	25	25	0	0	9	0	0
First-line supervisors of production and operating workers	High school diploma	\$67,433	0.3%	4,750	0.6%	365	\$47,863	0	193	135	48	27
Machinists	High school diploma	\$47,228	0.2%	3,260	3%	179	\$55,418	0	105	124	15	0
Team assemblers	High school diploma	\$34,798	0.2%	3,190	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welders, cutters, solderers, and brazers	High school diploma	\$46,638	0.2%	3,450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source:
• "Occupation Table on Page 3.xlsx"

Electroplating, anodizing, and coloring metal requires high school, associates, or bachelor’ degree depending on the specific occupation. The Average annual wage range from \$27,790 (Building and grounds cleaning and maintenance occupations) to \$113,340 (Administrative Service Managers). The highest share of the industry is the occupation is Metal workers and plastic workers (29 % of the total industry) with an annual wage of \$58,269. Most of the occupations does not require high level of education which correspond with the average wages levels.

332813
Electroplating, anodizing, and coloring metal

332813
Electroplating, anodizing, and coloring metal

INDUSTRY OVERVIEW



Industry Overview:
332999 - Miscellaneous fabricated metal product mfg.



This U.S. industry comprises establishments primarily engaged in manufacturing fabricated metal products (except forgings and stampings, cutlery and hand-tools, architectural and structural metals, boilers, tanks, shipping containers, hardware, spring and wire products, machine shop products, turned products, screws, nuts and bolts, metal valves, ball and roller bearings, ammunition, small arms and other ordnances and accessories, and fabricated pipes and pipe fittings).

Source: <https://siccode.com/en/naicscodes/332999/all-other-miscellaneous-fabricated-metal-product-manufacturing>



National Growth

National growth numbers show that firms have increased over the three year period by 211 establishments. A positive percentage change of 6% demonstrates a declining trending of the industry. The number of jobs change shows a positive percentage change of 2% . And the average annual wage from 2013 to 2016 demonstrates positive percentage change of 7% .

National Industry Change (2013 - 2016)

Year	# of Firms	# of Jobs	Average Annual Wage
2013	3,326	75,761	\$48,999
2016	3,537	76,899	\$53,216
Percentage Change	6%	2%	7%

Source: • "Quarterly Census of Employment and Wages" Bureau of Labor Statistics https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables



Typical Occupations & National Average Annual Wage

Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	\$34,570
First-line supervisors/managers of production and operating workers	\$61,130
Machinists	\$41,700
Team assemblers	\$32,110
Welders, cutters, solderers, and brazers	\$39,360

Source: • "Industries at a Glance," Bureau of Labor Statistics <https://www.bls.gov/iag/tgs/iag332.htm>

Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	25	93	\$44,165
2016	17	213	\$47,684
Percentage Change	-30%	129%	8%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics 2016 Distribution by County

Average Acres	3.4			
Average Employees	35	Adams	# of Firms	# of Jobs
Average Employee Density (EE/Acre)	10	Arapahoe	8	179
Average Improvement Value/Land Value	3.02	Boulder	N/A	N/A
Average Sales Volume	\$9,254	Broomfield	1	N/A
		Denver	N/A	N/A
		Jefferson	3	N/A
			5	34

Source: • "Combined Business Prospects" Table
Source: Regional Growth & Characteristics 2016 page 1

Regional Rationale

The Regional Growth and Characteristics table shows negative change in firm growth in the last three years. However the number of jobs increased by 129% and the average annual wage increased by 8%.

Miscellaneous fabricated metal product manufacturing requires 1.9 acres of space on average, and has an average of 35 employees. The industry distribution across the metro area shows various types of firm sizes located in almost All of the six county study area, with the highest number of firms and total Jobs in Jefferson County. Some of the occupational data on average wages also show that the industry does provide jobs with livable wages.

332999
Miscellaneous fabricated metal product manufacturing

INDUSTRY OVERVIEW

Applied Magnesium USA



Applied Magnesium USA
of Employees: 83
Street, City, County: 3595 Moline St., Aurora, Adams
Distance to Nearest Arterial: 0.4 mi. to Peoria Street.
Distance to Freeway: 0.5 mi to I-70
Land Value/Acre: \$28,575
Improvement Value: \$1,649,316
Growth (2013-2016): not available

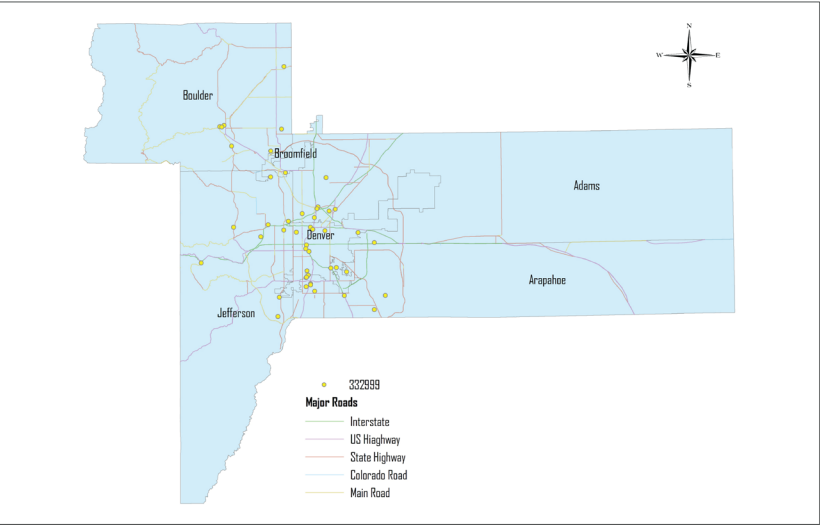


Cemco
of Employees: 40
Street, City, County: 490 Osage St, Denver, Denver
Distance to Nearest Arterial: 0.15 mi. to the Colorado-6
Distance to Freeway: 0.27 mi. to I-25
Land Value/Acre: \$438,320
Improvement Value: \$1,292,900
Growth (2013-2016): not available



American Stainless Steel Corporation
of Employees: 33
Street, City, County: 1600 W Yale Ave, Englewood, Arabahoe
Distance to Nearest Arterial: 0.9 mi. to Hampden Avenue
Distance to Freeway: 0.6 mi. to Colorado-85
Land Value/Acre: \$266,273
Improvement Value: \$425,250
Growth (2013-2016): not available

Location of Businesses in NAICS Code



- **Would it be better at Tower, Parkway, or Candelas?**
This type of business is an average of Four acres, but could also occupy just one acres. The flexibility allowed of the business means it be located in any of the Tower, Parkway, and Candelas sites.
- **Does it pollute or produce hazardous waste?**
Fabricated metal processes generate various hazardous waste streams, including oily wastes from machining operations, heavy metal-bearing streams from surface treatment and plating operations, and solvents, alkaline and acid solutions from metal cleaning and stripping operations, and additional wastes related to paint application.
- **Does it have a lot of truck traffic for supplies coming in and products going out?**
It does require shipment of products which can generate frequent truck traffic.
- **Would they operate the factory on a 24 hour schedule?**
No
- **Will it need to combine several parcels?**
Sample businesses were on average of two acres, Tower and Parkway have parcels that rang from one to three acres. Therefore they can accommodate these businesses.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

☐ Is an issue

☐ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	High school diploma	\$36,395	0.1%	940	0.04%	25	25	0	0	9	0	0
First-line supervisors of production and operating workers	High school diploma	\$67,433	0.3%	4,750	0.6%	365	\$47,863	0	193	135	48	27
Machinists	High school diploma	\$47,228	0.2%	3,260	3%	179	\$55,418	0	105	124	15	0
Team assemblers	High school diploma	\$34,798	0.2%	3,190	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welders, cutters, solderers, and brazers	High school diploma	\$46,638	0.2%	3,450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source:
•"Occupation Table on Page 3.xlsx"

Miscellaneous fabricated metal product manufacturing requires high school, associates, or bachelor’ degree depending on the specific occupation. The Average annual wage range from \$27,790 (Building and grounds cleaning and maintenance occupations) to \$113,340 (Administrative Service Managers). The highest share of the industry is the occupation is Metal workers and plastic workers (29.9 % of the total industry) with an annual wage of \$58,269. Most of the occupations does not require high level of education which correspond with the average wages levels.

332999 Miscellaneous fabricated metal product manufacturing

INDUSTRY OVERVIEW



Industry Overview:
333132-Oil and Gas Field Machinery and Equipment



The Oil and Gas Field Machinery Industry is a subsector of the Machinery Manufacturing subsector that creates end products that apply mechanical force, for example, the application of gears and levers, to perform work. Machinery manufacturing typically employs multiple metal forming processes in manufacturing the various parts of the machine. Moreover, complex assembly operations are an inherent part of the production process.

Source: : - occupation, wage, educational attainment table
<https://www.bls.gov/iag/tgs/iag333.htm#about>



National Growth

The national number of firms has remained stable with minimal growth. The total number of jobs, however, has declined since 2013. Some of the consolidation can be attributed to the depressed price of oil and gas which has impacted extraction operations .While the total number of jobs has decreased, the average annual wage has grown.

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	1,322	81,246	\$83,662
2016	1,343	55,315	\$93,067
Percentage Change	1.5%	-32%	11%

Source:: Quarterly Census of Employment and Wages," Bureau of Labor Statistics
[https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables'](https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables)



Colorado Growth & Characteristics*

Year	# of Firms	# of Jobs	Average Annual Wage
2013	9	334	\$69,620
2016	9	238	\$61,611
Percentage Change	0%	-29%	12%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County		
Average Acres	2.1		% of Firms	% of Jobs
Average Employees	22	Adams	n/a	0%
Average Employee Density (EE/Acre)	8	Arapahoe	1	0%
Average Improvement Value/Land Value	7.7	Boulder	n/a	0%
		Broomfield	n/a	13%
		Denver	1	8%
Average Sales Volume	\$8,163,000	Jefferson	2	5%

Source:
•"Combined Business Prospects" Table

Source:
Regional Growth & Characteristics 2016 page 1



Regional Rationale

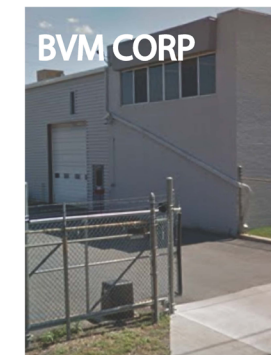
The average wage has increased in this industry which makes it a more ideal candidate for Arvada. While jobs have decreased in this industry since 2013, a raise in extraction would potentially increase the number of firms and jobs.

333132 Oil and Gas Field Machinery and Equipment

INDUSTRY OVERVIEW

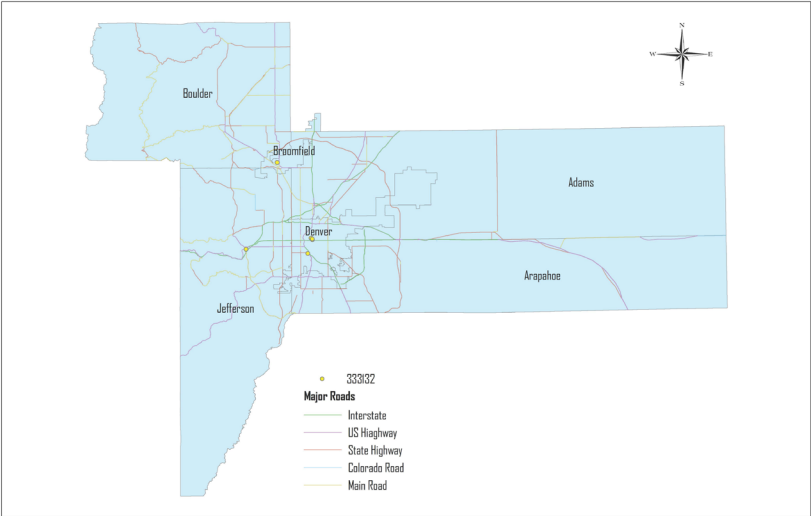


TIME PRODUCTS INC
of Employees: 20-30
Street, City, County: 2150 W 6th Ave, Broomfield, CO 80020
Distance to Nearest Arterial: .25 Miles
Distance to Freeway: 1 mi to Highway 36
Land Value/Acre: \$151,536
Improvement Value: \$3,020,400
Growth (2013-2016): not available



BVM CORP
of Employees: 60-80
Street, City, County: 430 S Navajo St, Denver, CO 80223
Distance to Nearest Arterial: .1 Miles
Distance to Freeway: .25 mi to I-25
Land Value/Acre: \$526,546
Improvement Value: \$1,013,000
Growth (2013-2016): not available

Location of Businesses in NAICS Code



• Would it be better at Tower, Parkway, or Candelas?
This type of business is an average of three acres, which means it could be a business in the Tower or Parkway sites in Arvada.

• Does it pollute or produce hazardous waste?
The Oil and Gas Machinery industry produces some waste that is comparable with other manufacturing operations. Impact on property values and smells is minimal.

• Does It have a lot of truck traffic for supplies coming in and products going out?
It does require shipment of products which can necessitate some truck traffic.

• Would they operate the factory on a 24 hour schedule?
No

• Will it need to combine several parcels?
Sample businesses were an average of three acres, Tower and Parkway were a little under that average, therefore more land might need to be purchased

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

Is an issue

Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
Occupation Title	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Computer-controlled machine tool operators, metal and plastic	High School Diploma	\$42,010	0.01%	640	0.00%	0	N/A	N/A	N/A	N/A	N/A	N/A
Machinists	High School Diploma	\$47,228	0.2%	3,260	0.29%	244	\$55,419	0	105	88	36	15
Mechanical engineers	Bachelor's Degree	\$94,693	0.3%	4,800	0.25%	171	\$83,598	0	27	54	71	19
Team assemblers	High School Diploma	\$34,798	0.2%	3,190	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Welders, cutters, solderers, and brazers	High School Diploma	\$46,638	0.2%	3,450	0.29%	194	\$51,685	0	26	104	64	0

Source:
• "Occupation Table on Page 3.xlsx"

This industry does offers a range of livable wages with only one occupation earning below \$40,000 per year. The mechanical engineering field requires the highest education levels. However the other occupations are attainable with High School degrees and some college. There is the opportunity for advancement from trades within the industry. The industry will likely resume former employment levels when prices for natural resource extraction increase.

333132

Oil and Gas Field Machinery and Equipment

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Computer-controlled machine tool operators, metal and plastic	High School Diploma	\$42,010	0.01%	640	0.00%	0	N/A	N/A	N/A	N/A	N/A	N/A
Machinists	High School Diploma	\$47,228	0.2%	3,260	0.29%	244	\$55,419	0	105	88	36	15
Mechanical engineers	Bachelor's Degree	\$94,693	0.3%	4,800	0.25%	171	\$83,598	0	27	54	71	19
Team assemblers	High School Diploma	\$34,798	0.2%	3,190	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Welders, cutters, solderers, and brazers	High School Diploma	\$46,638	0.2%	3,450	0.29%	194	\$51,685	0	26	104	64	0

Source:
• "Occupation Table on Page 3.xlsx"

This industry does offers a range of livable wages with only one occupation earning below \$40,000 per year. The mechanical engineering field requires the highest education levels. However the other occupations are attainable with High School degrees and some college. There is the opportunity for advancement from trades within the industry. The industry will likely resume former employment levels when prices for natural resource extraction increase.

INDUSTRY OVERVIEW



Industry Overview:
334511-Search, detection, and navigation instruments



Industries in the Computer and Electronic Product Manufacturing subsector group establishments that manufacture computers, computer peripherals, communications equipment, and similar electronic products, and establishments that manufacture components for such products.

The design and use of integrated circuits and the application of highly specialized miniaturization technologies are common elements in the production technologies of the computer and electronic subsector.

Source: Occupation Table on Page 3.xlsx" • <https://www.bls.gov/iag/tgs/iag334htm#about>
Occupation, wage, educational attainment table

National Growth

National growth numbers show that firms have increased slightly over the three year period by 4%. The minor decrease in number of jobs is matched with an increase in average annual wage. The navigation instrument industry remains stable .

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	945	127,527	\$105,637
2016	987	120,578	\$112,316
Percentage Change	4%	-4%	6%

Source: Quarterly Census of Employment and Wages;" Bureau of Labor Statistics
[https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables'](https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables)



Regional Growth & Characteristics*

Year	# of Firms	# of Jobs	Average Annual Wage
2013	12	2,616	\$136,042
2016	10	2,688	\$141,187
Percentage Change	-16%	3%	4%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County		
Average Acres	7.9		% of Firms	% of Jobs
Average Employees	6.3	Adams	1	%0
Average Employee Density (EE/Acre)	.79	Arapahoe	3	0%
Average Improvement Value/Land Value	.88	Boulder	2	30%
		Broomfield	1	37%
		Denver	n/a	9%
Average Sales Volume	\$2,094,000	Jefferson	2	25%

Source:
• "Combined Business Prospects" Table

Source:
Regional Growth & Characteristics 2016 page 1



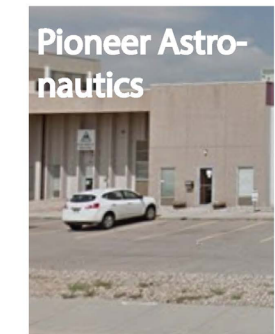
Regional Rationale

While the number of firms has slightly decreased in Colorado, the number of jobs and average annual wage have increased since 2013. Further, the firms in this industry are concentrated in northern counties such as Boulder and Broomfield which are closer in proximity to Arvada.

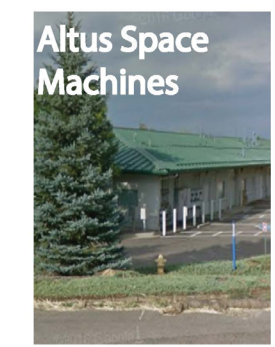
INDUSTRY OVERVIEW



BALL AERO-SPACE & TECHNOLOGIES
of Employees: 10-20
Street, City, County: 10055 Westmoor Dr, Westminster, CO 80021
Distance to Nearest Arterial: .01 Miles
Distance to Freeway: 2 mi to Highway 36
Land Value/Acre: .88
Improvement Value: \$5,272,200
Growth (2013-2016): not available

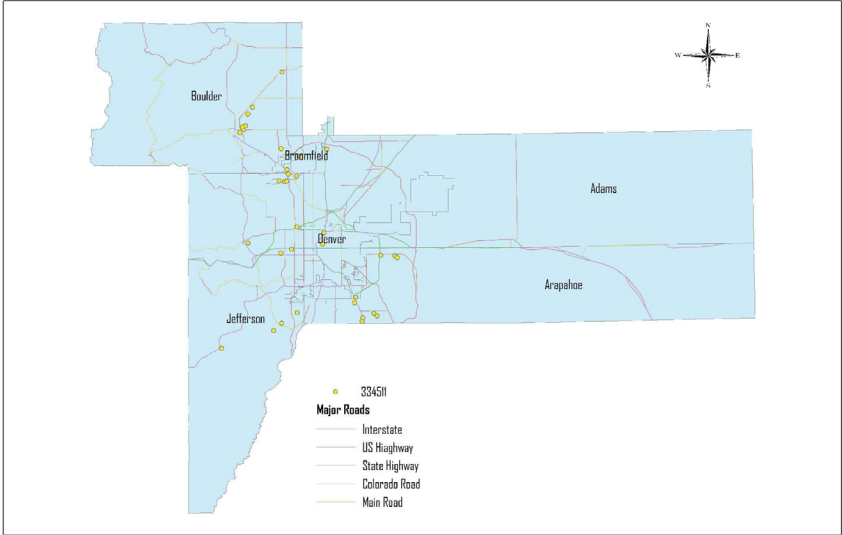


PIONEER ASTRONAUTICS
of Employees: 20-49
Street, City, County: 11111 W 8th Ave A, Lakewood, CO 80215
Distance to Nearest Arterial: .5 Miles
Distance to Freeway: 3.4 mi to I-70
Land Value/Acre: 0
Improvement Value: \$454,100
Growth (2013-2016): not available



ALTUS SPACE MACHINES
of Employees: 5-10
Street, City, County: 3001 Industrial Ln, Broomfield, CO 80020
Distance to Nearest Arterial: .1
Distance to Freeway: 1 mi to Highway 36
Land Value/Acre: \$135,885
Improvement Value: \$1,259,230
Growth (2013-2016): not available

Location of Businesses in NAICS Code



- **Would it be better at Tower, Parkway, or Candelas?**
This type of business averages of eight acres, which means it could be a business in the Candelas, Tower or Parkway sites in Arvada.
- **Does it pollute or produce hazardous waste?**
This industry does not pollute. It does produce heavy metals which must be disposed of properly to remain out of general land fills.
- **Does it have a lot of truck traffic for supplies coming in and products going out?**
This industry does not require shipment of products which can necessitate frequent truck traffic.
- **Would they operate the factory on a 24 hour schedule?**
No
- **Will it need to combine several parcels?**
Sample businesses had a range of acreages which makes this industry stuitable for single parcel or multi-parcel configurations.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells















☒ Is an issue

☐ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
Occupation Title	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Coputer hardware engineer	Bachelor's Degree	\$118,795	0.1%	1,400	0.04%	25	\$100,000	0	0	0	25	0
Electronic engineering technician	Associates Degree	\$65,7123	0.1%	1,310	0.00%	0	N/A	N/A	N/A	N/A	N/A	N/A
Electronic equipment assemblers	High School Diploma	\$36,085	0.2%	2,740	0.02%	10	\$35,000	0	10	0	0	0
Semiconductor processors	High School Diploma	\$38,070	N/A	N/A	0.61%	number	number	58	271	111	30	0

Source:
• "Occupation Table on Page 3.xlsx"

Over half of the occupations in this industry pay above \$65,000. There is a range of entry level education from High School to Bachelor's degree which indicates this industry has opportunity for career advancement. There is a strong and growing aerospace sector in the Denver region which indicates this industry will continue to see stable employment. While the number of firms has decreased since 2013, the wages and number of jobs have increased.

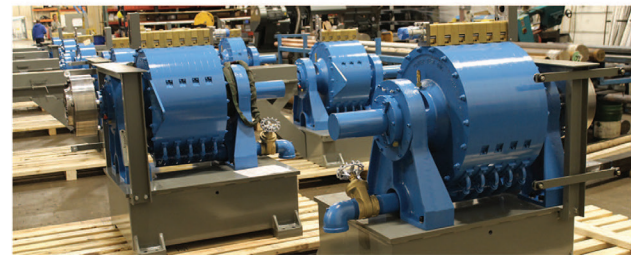
334511

Search, detection, and navigation instruments

INDUSTRY OVERVIEW



Industry Overview:
334512 & 334515 - Energy



The Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use industry (334512) is composed of businesses that manufacture controls used for heating, air-conditioning, and refridgeration appliances. The related industry (334515), Instrument Manufacturing for Measuring Electricity and Electric Signals, manufactures products including circuit testers, ohm meters, and simiconductor test equipment.



National Growth

National growth numbers show that firms have increased over the three year period by 5%. This increase in the number of firms demonstrates a growing and positively trending industry. The number of jobs in the industry has decreased by 4%, however wages have increased an average of 8%. This could suggest that as workers become more skilled, fewer are needed, but at higher pay. Overall the industry is experiencing growth and does not look to be declining in the near future.

National Industry Change 2013 - 2016			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	745	28,715	\$83,905
2016	778	27,592	\$90,685
Percentage Change	5%	-4%	8%

Source: "Industries at a Glance," Bureau of Labor Statistics
<https://www.bls.gov/iag/tgs/iag332.htm>



Typical Occupations & National Average Annual Wage	
Computer hardware engineers	\$123,670
Electronic engineering technicians	\$59,790
Electronic equipment assemblers	\$33,310
Semiconductor processors	\$37,860

Source: "Industries at a Glance," Bureau of Labor Statistics

Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	18	89	\$72,298
2016	19	127	\$79,233
Percentage Change	6%	43%	10%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County	
Average Acres	2.97		
Average Employees	14	Adams	1
Average Employee Density (EE/Acre)	12.26	Arapahoe	4
Average Improvement Value/Land Value	5.30	Boulder	10
Average Sales Volume	3,155	Broomfield	1
		Denver	1
		Jefferson	2

Source:
"Combined Business Prospects" Table

Source:
Regional Growth & Characteristics 2016 page 1

Regional Rationale

The growth of this industry in the region has been much greater than the national growth. While the number of jobs has decreased nationally, regionally it has increased 43% from 2013-2016. This has also been accompanied by an increase in the number of firms and wages. Arapahoe and Denver currently have the greatest share of workers in this industry.

334512 & 334515
Automatic Environmental Control Manufacturing & Instrument
Manufacturing for Measuring Electricity

INDUSTRY OVERVIEW



Focused Test Inc
of Employees: 20
Street, City, County:
1965 N 57th Ct Suite 106, Boulder
Distance to Nearest Arterial:
1 mile to Arapahoe Ave
Distance to Freeway:
3 miles to US-36
Land Value:
\$170,000 (2.52 acres)
Improvement Value:
\$8,389,300
Growth (2013-2016):
0%

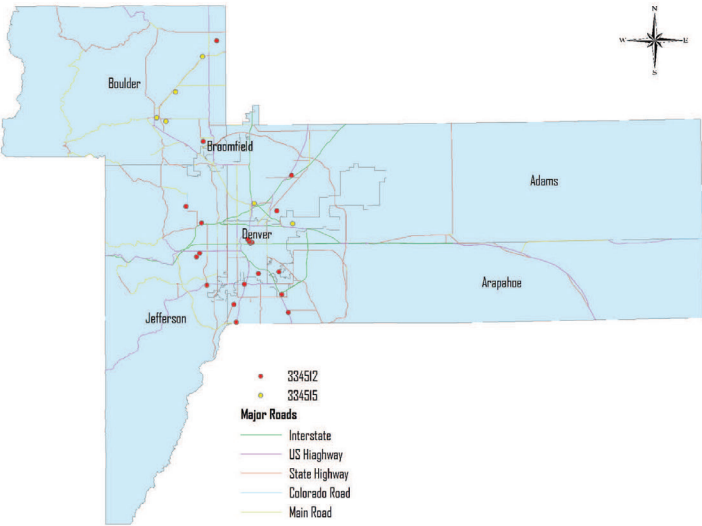


AM West Controls Inc
of Employees:
22
Street, City, County:
E 106th Ave, Brighton, Adams
Distance to Nearest Arterial:
0.2 miles to E 104th Ave
Distance to Freeway:
0.25 miles to I-76
Land Value:
\$270,126 (2.13 acres)
Improvement Value:
\$590,307
Growth (2013-2016):
0%



Instrrotek Inc
of Employees:
30
Street, City, County:
850 E 73rd Ave, Denver
Distance to Nearest Arterial:
0.1 mile to Washington St
Distance to Freeway:
0.2 miles to US - 36
Land Value:
\$479,595 (4.48 acres)
Improvement Value:
\$3,205,616
Growth (2013-2016):
(N/A)

Location of Businesses in NAICS Code



• Would it be better at Tower, Parkway, or Candelas?

This type of business is an average of three acres, which means it could be a good fit for either the Tower Place or Parkway Center sites.

• Does it pollute or produce hazardous waste?

Automatic environmental control manufacturing and electric signal manufacturing can produce waste that needs to be responsibly disposed of, but if correctly managed, is not hazardous.

• Does it have a lot of truck traffic for supplies coming in and products going out?

Businesses in this industry require shipments of supplies, and are involved in shipping out final products.

• Would they operate the factory on a 24 hour schedule?

No.

• Will it need to combine several parcels?

The average acreage needed to operate a business in this industry is three acres. The Tower Place and Parkway Center sites have single lots that could accomodate smaller businesses, but it is likely that two parcels may need to be combined.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

Is an issue
Is not an issue

334512 & 334515
Automatic Environmental Control Manufacturing & Instrument
Manufacturing for Measuring Electricity

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Coputer hardware engineer	Bachelor's Degree	\$118,795	0.1%	1,400	0.04%	25	\$100,000	0	0	0	25	0
Electronic engineering technician	Associate's Degree	\$57,090	0%	80	0.43%	265	\$66,000	0	117	150	0	23
Electronic equipment assemblers	High School Diploma	\$36,085	0.2%	2,740	0.02%	10	\$35,000	0	10	0	0	0
Semiconductor processors	High School Diploma	\$38,070	N/A	N/A	0.61%	377	\$29,018	58	271	111	30	0

Source:
• "Occupation Table on Page 3.xlsx"

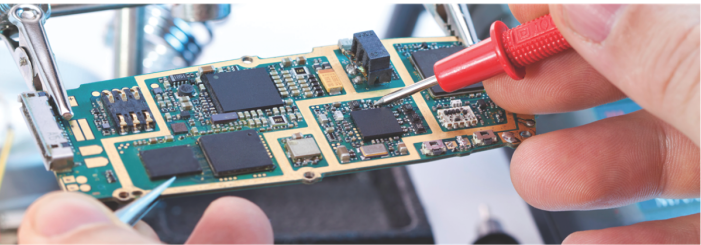
The jobs in this industry require a range of educational qualifications. Though there are common occupations only requiring a high school dimploma, others require an associate or bachelor's degree. The annual wages for the whole range of occupations would allow an employee to earn a living wage to live in Arvada. Arvada's current workforce is well equipped to fill the occupations and each occupation provides a career ladder with opportunity to advance after gaining more skills and experience.

334512 & 334515
Automatic Environmental Control Manufacturing & Instrument Manufacturing for Measuring Electricity

INDUSTRY OVERVIEW



Industry Overview:
334516 & 334519
Computer & Electronic Manufacturing



Computer and electronic manufacturing is classified under the larger grouping of computers, communications equipment, and other similar electronic products. This category in particular is known for its rapid growth, and its distinct manufacturing process.

Source: • "Industries at a Glance," Bureau of Labor Statistics
• occupation, wage, educational attainment table



National Growth

National growth numbers show that firms have increased slightly over the three year period by 8%. The number of jobs have also increased marginally by approximately 1,000 positions. Importantly, the industry has also seen an increase in wages nationally, going up by a total of \$5,362. This results in an overall increase of 6% from 2013 to 2016. The three positive growth categories demonstrates a growing industry.

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	769	33,690	\$92,534
2016	833	34,906	\$97,896
Percentage Change	8%	4%	6%

Source:
• "Quarterly Census of Employment and Wages," Bureau of Labor Statistics



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	11	289	\$89,291
2016	n/a	n/a	n/a
Percentage Change	n/a	n/a	n/a

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County		
Average Acres	7.6		# of Firms	# of Jobs
Average Employees	34	Adams	n/a	7
Average Employee Density (EE/Acre)	4.5	Arapahoe	2	8
Average Improvement Value/Land Value	.92	Boulder	23	119
Average Sales Volume	4,095	Broomfield	1	n/a
		Denver	3	5
		Jefferson	6	9

Source:
• "Combined Business Prospects" Table

Source:
Regional Growth & Characteristics 2016 page 1



Regional Rationale

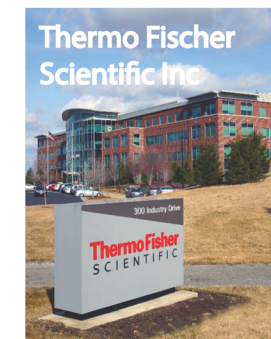
The Regional Growth and Characteristics information was only available for the 2013 year, however the one comparable number annual wage, shows similar findings as the national industry information. The industry distribution across the metro area shows various types of firm sizes located in almost all of the six county study area, with the highest number of firms and total jobs in Boulder County. Some of the occupational data on average wages also show that the industry does provide jobs with livable wages.

334516 & 334519
Computer & Electronic Manufacturing

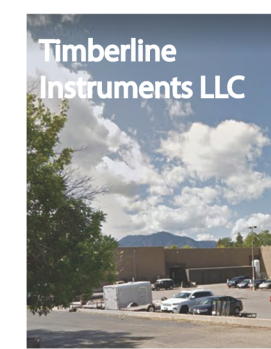
INDUSTRY OVERVIEW



ASD Panalytical Boulder Inc.
of Employees: 44
Street, City, County: 1625 S Fordham St, Longmont, CO 80503
Distance to Nearest Arterial: .5 mi to Airport Rd
Distance to Freeway: .5 mi. to CO-119
Land Value/Acre: \$1,581,383
Improvement Value: \$5,241,518.00
Growth (2013-2016): not available

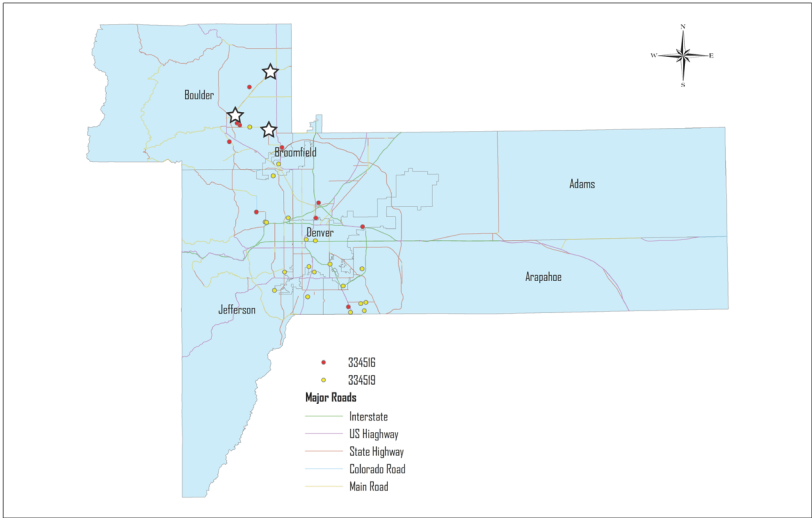


Thermo Fisher Scientific Inc
of Employees: 14
Street, City, County: 2650 Crescent Dr, Lafayette, CO 80026
Distance to Nearest Arterial: .25 mi. to S112 St.
Distance to Freeway: 3.5 mi. to US-36
Land Value/Acre: \$378,557
Improvement Value: \$6,222,237.00
Growth (2013-2016): not available



Timberline Instruments LLC
of Employees: 10
Street, City, County: 1880 S Flatiron Ct, Boulder, CO 80301
Distance to Nearest Arterial: .5 mi. to 55th St.
Distance to Freeway: 2 mi. to CO-119
Land Value/Acre: \$665,570
Improvement Value: \$2,629,000.00
Growth (2013-2016): not available

Location of Businesses in NAICS Code



- 334516
- 334519

Major Roads

- Interstate
- US Highway
- State Highway
- Colorado Road
- Main Road

• Would it be better at Tower, Parkway, or Candelas?
This type of business is an average of seven acres, but could also occupy just four acres. The flexibility allowed of the business means it be located in any of the Tower, Parkway, and Candelas sites.

• Does it pollute or produce hazardous waste?
Computer and electronic manufacturing can produce some waste which should be recycled in a responsible manner. The manufacturing process also requires some chemical use, which can be dangerous if not handled appropriately.

• Does it have a lot of truck traffic for supplies coming in and products going out?
It does require shipment of products which can generate some truck traffic.

• Would they operate the factory on a 24 hour schedule?
No

• Will it need to combine several parcels?
Businesses can occupy smaller parcels, but if a larger establishment is planned there may be the need for combining parcels.

Other Issues:

Noise

Traffic

Pollution

Property Values

Trash

Lights

Smells

☒ Is an issue

☐ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
Occupational Title	National Data	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
	Entry Level Education	Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Avg. Wage	Less than High School	High School	Some College	4 Year College	> College
Computer Hardware Engineers	Bachelor's Degree	\$ 118,795	0.3%	1,400	0.04%	25	\$100,000	0	0	0	25	0
Electrical Engineering Technicians	Associate's Degree	\$65,713	0.1%	1,310	0.43%	60	\$66,660	0	0	0	93	46
Engineering Technicians	Associate's Degree	\$66,638	0.1%	1,280	0.43%	60	\$66,660	0	0	0	93	46
Electric Equipment Assemblers	High School Diploma	\$36,085	0.2%	2,740	0.02%	10	\$35,000	0	10	0	0	0
Semiconductor Processors	High School Diploma	\$38,070	n/a	n/a	0.60%	370	\$48,027	58	271	111	30	0

Source:
• "Occupation Table on Page 3.xlsx"

Discussion

The computer and electronics manufacturing industry requires slightly higher entry level education qualifications, with computer hardware engineering positions asking for a bachelor's degree and two different engineering technician occupations requesting at least an associates degree. When looking at the corresponding annual wages they also show higher averages than other manufacturing occupations and the same is true for the Arvada worker numbers as well. Both technician occupations make more than \$65,000 a year, while the engineering position in the metro area and Arvada make \$100,000 a year or more. The Arvada workers by occupation category shows the highest concentration of total workers in the semiconductor processors occupation. And this category also shows a high number of people having some college qualifications, a smaller amount also have a four-year college degree, perhaps demonstrating that some career mobility may be possible within the industry and in this specific occupation.

INDUSTRY OVERVIEW



Industry Overview:
339112 - Healthcare



The Surgical and Medical Instrument Manufacturing industry is involved in manufacturing a variety of instruments used by both surgeons and vetrinarians. Example products include things like syringes, needles, blood transfusion equipment, surgical clamps, and thermometers.



National Status

National growth numbers show that firms have increased over the three year period by 17%. This increase in the number of firms demonstrates a growing and positively trending industry. The number of jobs in the industry has increased at a slower rate of 2%. During this same time, the average annual wage increased by 9%. Overall the industry is experi-encing rapid growth which is also accompanied by an increase in wages.

National Industry Change 2013 - 2016			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	1,823	117,644	\$75,556
2016	2,129	120,352	\$81,984
Percentage Change	17%	2%	9%

Source: •“Quarterly Census of Employment and Wages,” Bureau of Labor Statistics
https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables'

Typical Occupations & National Average Annual Wage	
Cutting, punching & machine operators	\$32,270
First-line supervisors of production	\$60,060
Inspectors, testers, sorters, samplers	\$39,470
Sales representatives	\$65,980
Team assemblers	\$30,040

Source: •“Industries at a Glance,” Bureau of Labor Statistics
https://www.bls.gov/iag/tgs/iag332.htm

Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	24	1,322	\$89,291
2016	33	3,044	\$75,100
Percentage Change	38%	130%	-16%

Source: Master Cluster NAICS 6 County_2013

Industry Characteristics		2016 Distribution by County	
Average Acres	5.7	Adams	# of Firms 1, # of Jobs 52
Average Employees	16	Arapahoe	8 310
Average Employee Density (EE/Acre)	20	Boulder	9 238
Average Improvement Value/Land Value	3.51	Broomfield	1 14
Average Sales Volume	3,928	Denver	5 178
		Jefferson	9 383

Source: •“Combined Business Prospects” Table

Source: Regional Growth & Characteristics 2016 page 1

Regional Rationale

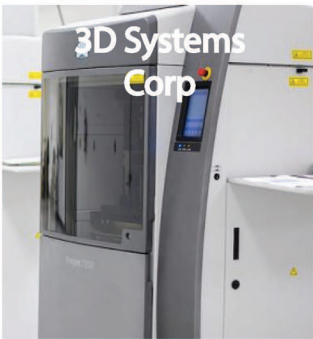
The growth of this industry in the region has been much greater than the national growth. The number of firms has increased by 38% and the number of jobs has dramatically increased by 130%. This dramatic increase in the number of jobs could help explain the decrease in the average annual wage. As new businesses have begun operation, they are in need of large amounts of lower wage workers. This industry has strong clusters in Arapahoe, Boulder, and Jefferson County, however each county in the region still has a sizeable stake in the industry.

INDUSTRY OVERVIEW

Resurgent Health
and Medical



Resurgent Health and Medical:
Street, City, County:
Corporate Circle Golden, Jefferson
of Employees:
19
Distance to Nearest Arterial:
0.1 miles to W Colfax Ave
Distance to Freeway, Name:
0.5 miles to I-70
Land Value:
\$2,012,000 (9.55 acres)
Improvement Value:
\$8,049,000
Growth (2013-2016):
5%

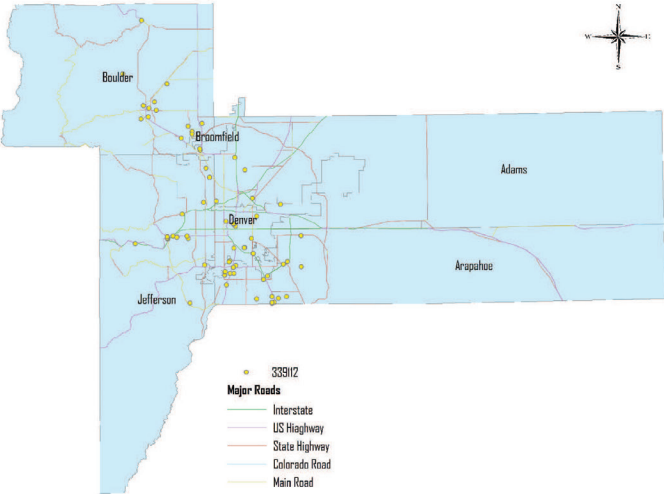


3D Systems Corp
Street, City, County:
S Akaire St, Littleton, Jefferson
of Employees:
15
Distance to Nearest Arterial:
0.1 miles to W Bellevue Ave
Distance to Freeway, Name:
0.5 miles to C-470
Land Value:
\$1,438,000 (6.97acres)
Improvement Value:
\$5,757,000
Growth (2013-2016):
0%



Mesa Laboratories
Street, City, County:
W 6th Ave Lakewood, Jefferson
of Employees:
100
Distance to Nearest Arterial:
0.1 miles to W 6th Ave
Distance to Freeway, Name:
2.3 miles to I-70
Land Value:
\$7,761,000 (16.48acres)
Improvement Value:
\$23,383,000
Growth (2013-2016):
85%

Location of Businesses in NAICS Code



- **Would it be better at Tower, Parkway, or Candelas?**
This type of business is an average of 5.7 acres which would either require multiple Tower Place or Parkway Center parcels, or for a Candelas parcel to be subdivided.
- **Does it pollute or produce hazardous waste?**
Surgical and medical instrument manufacturing can produce waste that needs to be responsibly disposed of, but if correctly managed, it is not hazardous.
- **Does it have a lot of truck traffic for supplies coming in and products going out?**
Businesses in this industry require shipments of supplies, and are involved in shipping out final products which can be large thus producing more truck traffic.
- **Would they operate the factory on a 24 hour schedule?**
No.
- **Will it need to combine several parcels?**
Yes, the average parcel sizes for Tower Place and Parkway Center are smaller than the average size required for a business in this industry.

Other Issues:

Noise



Traffic



Pollution



Property Values



Trash



Lights



Smells



○ Is an issue
● Is not an issue

339112

Surgical and Medical Instrument Manufacturing

339112

Surgical and Medical Instrument Manufacturing

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Entry Level Education	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupation Title		Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Ave. Wage	Less than High School	High School	Some College	4-year College	> College
Cutting, punching & machine operator	High School Diploma	\$36,395	0.1%	940	0.03%	17	\$10,000	0	0	9	0	0
First-line supervisors of production	High School Diploma	\$67,433	0.3%	4,750	0.59%	365	\$47,863	0	193	135	48	27
Inspectors, testers, sorters, samplers	High School Diploma	\$42,635	0.2%	3,760	0.5%	308	\$45,925	0	147	165	26	0
Sales representatives, Wholesale and manufacuring	Bachelor's Degree	\$96,320	0.3%	4,960	1.16%	716	\$66,703	9	180	264	269	23
Team assemblers	High School Diploma	\$34,798	0.2%	3,190	0.55%	342	\$31,169	33	256	26	42	0

Source:
•"Occupation Table on Page 3.xlsx"

A majority of the common jobs in this industry only require a high school diploma for entry level positions. Though no formal post-secondary education is required, on the job training provides workers with the opportunity to gain more skills and advance along a career ladder. Because of this, these occupations provide living wages for their workers. Sales representatives for the wholesale goods need bachelor's degrees, however they have the opportunity to earn an average of \$66,702 annually. Arvada's workforce is well-equipped to work in this industry.

339112 Surgical and Medical Instrument Manufacturing

INDUSTRY OVERVIEW



Industry Overview:
339114 & 339116
Dental Equipment Manufacturing & Laboratories



Dental equipment manufacturing and laboratories consist of a broad range of different manufacturing processes and products. Under this classification industry groups include medical equipment and supplies manufacturing and other miscellaneous manufacturing. Examples of products created, fitted, repaired, or sold by this type of manufacturing include dentures, eyeglasses, and prosthetics

Source: •"Industries at a Glance," Bureau of Labor Statistics
• occupation, wage, educational attainment table
•"Occupational Outlook Handbook," Bureau of Labor Statistics



National Growth

National growth numbers show that firms have increased from 2013 to 2016 by a total of 32, increasing by 7%. Additionally, average annual wages increased by 8%, resulting in a gain of about \$4,000. However, the total number of jobs did decrease slightly over this time by 4%. In general the industry is growing at a steady pace in terms of firm expansion and rising wages.

National Industry Change (2013 - 2016)			
Year	# of Firms	# of Jobs	Average Annual Wage
2013	552	16,019	\$57,646
2016	591	15,326	\$62,027
Percentage Change	7%	-4%	8%

Source:
•"Quarterly Census of Employment and Wages," Bureau of Labor Statistics



Regional Growth & Characteristics

Year	# of Firms	# of Jobs	Average Annual Wage
2013	10	n/a	n/a
2016	7	206	\$45,436
Percentage Change	-30%	n/a	n/a

Source: Master Cluster NAICS 6 County_2013



Regional Rationale

The Regional Growth and Characteristics information has some missing information from the 2013 year, but does show a significant number of jobs just this past year. The industry distribution seems to be even across the region, with the highest number of firms located in Arapahoe County and highest number of employees in Boulder County. One of the more important characteristics of the industry is the low average acreage required for businesses, while also being able to employ a considerable amount of people.

Typical Occupations & National Average Annual Wage	
Cutting, Punching, Press Machine	\$32,270
Dental Laboratory Technicians	\$40,070
First-Line Supervisors/Managers	\$60,060
Inspectors, Testers, Sorters, Samplers	\$39,470
Sales Representatives, Wholesale	\$65,980

Source:
•"Industries at a Glance," Bureau of Labor Statistics

339114 & 339116 Dental Equipment Manufacturing & Laboratories

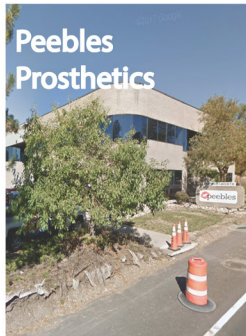
INDUSTRY OVERVIEW



Esprit Dental
of Employees: 75
Street, City, County: 8420 Continental Div Rd Littleton, CO 80127
Distance to Nearest Arterial: .25 mi. to Chatfield Ave.
Distance to Freeway: 1 mi. to CO-470
Land Value/Acre: \$299,062
Improvement Value: \$1,149,000.00
Growth (2013-2016): not available

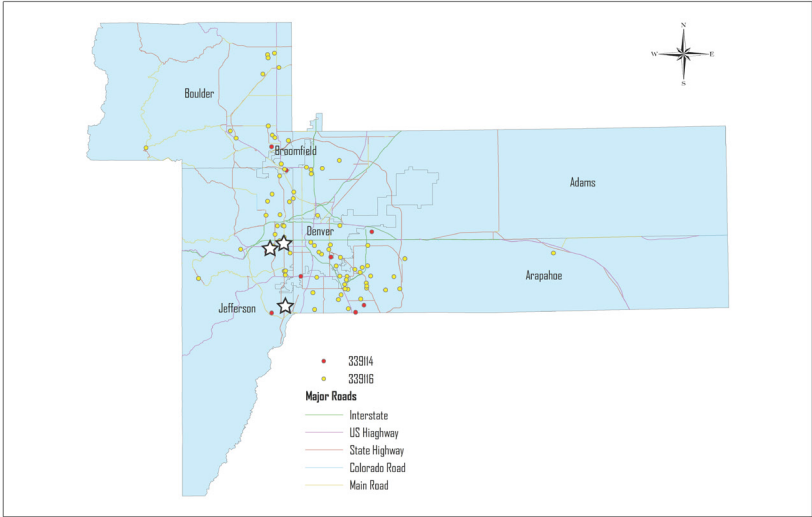


Budget Dental Labs
of Employees: 47
Street, City, County: 9990 W 26th Ave Lakewood, CO 80215
Distance to Nearest Arterial: .25 mi. to Kipling St.
Distance to Freeway: 2 mi. to I-70
Land Value/Acre: \$211,839
Improvement Value: \$737,200.00
Growth (2013-2016): not available



Peebles Prosthetics
of Employees: 51
Street, City, County: 909 Wadsworth Blvd, Lakewood, CO 80214
Distance to Nearest Arterial: located on Wadsworth Blvd.
Distance to Freeway: 3 mi. to I-70
Land Value/Acre: \$279,615
Improvement Value: \$810,200.00
Growth (2013-2016): not available

Location of Businesses in NAICS Code



• Would It be better at Tower, Parkway, or Candelas?

Tower and Parkway would be a better fit for Dental Equipment Manufacturing because it usually requires just over one acre of space. This means that the sites would actually have one to two additional acres available for other businesses.

• Does it pollute or produce hazardous waste?

Dental laboratories do produce hazardous waste, as do all health care laboratories. However, more professionals in this field are trying to be proactive and responsible in the way they dispose of supplies and materials.

• Does it have a lot of truck traffic for supplies coming in and products going out?

Does not generate too much truck traffic

• Would they operate the factory on a 24 hour schedule?

No

• Will it need to combine several parcels?

No, this industry usually requires one acre of space, meaning it would have additional space available at any of the three sites

Other Issues:

Noise



Traffic



Pollution



Property Values



Trash



Lights



Smells



○ Is an issue
○ Is not an issue

INDUSTRY OVERVIEW



Workforce Analysis

National and Metro Denver Data					Arvada Comparison							
	National Data	Metropolitan Denver Data			Arvada Workers by Occupation			Education of Arvada Workers by Occupation				
Occupational Title	Entry Level Education	Average Annual Wage	Share of Jobs	# of Jobs	Share of Workers	# of Workers	Annual Avg. Wage	Less than High School	High School	Some College	4 Year College	> College
Cutting, Punching, Press Machine	High School Diploma	\$32,810	0.0%	510	0.03%	17	\$10,000	0	0	9	0	0
Dental Laboratory Technicians	High School Diploma	\$42,655	0.0%	360	0.02%	15	\$15,000	0	9	0	0	22
First-Line Supervisors/Managers	High School Diploma	\$67,433	0.3%	4,750	0.59%	159	\$38,962	0	193	135	48	27
Inspectors, Testers, Sorters, Samplers	High School Diploma	\$42,635	0.2%	3,760	0.50%	308	\$45,925	0	147	165	26	0
Sales Representatives, Wholesale	High School Diploma	\$66,510	1.2%	20,610	1.16%	716	\$66,703	9	180	264	269	23

Source:
• "Occupation Table on Page 3.xlsx"

Discussion

Dental Equipment Manufacturing demonstrates more uniform entry level educational requirements than other manufacturing occupation sets. The Denver metro data also shows that although, lower education levels are common, four out of the five occupations have wages higher than \$40,000 a year. In terms of providing a career ladder, three of the occupations also have a significant amount of Arvada workers with some college or four year college qualifications, which perhaps could lead to more career mobility. Two of the occupations, cutting and press machine operations, and dental laboratory technicians have very low annual wages, but are only this low in the Arvada numbers, not for the metro area as a whole. However, this may not be too concerning because the city of Arvada has only 15 employees that work in these positions. Furthermore, their numbers also show that some people employed in these occupations have more than a college degree, this could potentially mean that it is temporary work, rather than permanent jobs. The highest share of workers for Arvada in dental equipment manufacturing are in sales representative positions, who show the largest annual wage average along with more varied educational attainment.

339114 & 339116
Dental Equipment Manufacturing & Laboratories

WORKFORCE ANALYSIS: SUPPLY AND DEMAND

Table 8: Supply of Arvada Workers

Occ Code	Occupation Category	Occupation Detailed Category	National Employment Change Forecast 2016 to 2026	Total Employed Civilian Workers over 16	% of Total Workers	Compared to % of Jobs in Region	Compared to % of Job Posts Q1 2018
11-0000	Management, business, science, and arts	Management	0.092	7662	0.124925	0.077443753	-0.017034878
13-0000	Management, business, science, and arts	Business and financial operations	0.093	4140	0.0675	-0.011102473	0.013076461
15-0000	Management, business, science, and arts	Computer and mathematical	0.135	2303	0.037549	-0.012595373	-0.076604938
17-0000	Management, business, science, and arts	Architecture and engineering	0.074	2069	0.033734	0.005972854	-0.020690027
19-0000	Management, business, science, and arts	Life, physical, and social science	0.095	695	0.011332	-0.00203693	0.004052953
21-0000	Management, business, science, and arts	Community and social services	0.135	939	0.01531	0.002871117	0.007228317
23-0000	Management, business, science, and arts	Legal	0.098	588	0.009587	-0.000521045	0.004141127
25-0000	Management, business, science, and arts	Education, training, and library	0.093	3668	0.059805	0.006060484	0.032784722
27-0000	Management, business, science, and arts	Arts, design, entertainment, sports, and media	0.063	1388	0.022631	0.006001584	0.001178672
29-0000	Management, business, science, and arts	Health diagnosing and treating practitioners and other technical*	0.152	3133	0.051082	-0.001198638	-0.082429572
31-0000	Service	Healthcare support	0.232	1227	0.020006	-0.004557844	-0.013559938
33-0000	Service	Fire fighting and prevention, and other protective service workers including supervisors & Law enforcement	0.045	1549	0.025256	0.005479218	0.004833516
35-0000	Service	Food preparation and serving related	0.093	3095	0.050462	-0.041986569	0.003910416
37-0000	Service	Building and grounds cleaning and maintenance	0.087	1355	0.022093	-0.007967798	0.007779618
39-0000	Service	Personal care and service	0.182	2396	0.039065	0.005355165	0.021034674
41-0000	Sales and office	Sales and related	0.032	6532	0.106501	-0.0094562	0.02795421
43-0000	Sales and office	Office and administrative support	0.006	8529	0.139061	-0.004179818	0.036409162
45-0000	Natural resources, construction, and maintenance	Farming, fishing, and forestry	0	120	0.001957	0.00060586	0.001188523
47-0000	Natural resources, construction, and maintenance	Construction and extraction	0.111	3065	0.049973	0.004621923	0.037580226
49-0000	Natural resources, construction, and maintenance	Installation, maintenance, and repair	0.067	1679	0.027375	-0.008006181	-0.006574337
51-0000	Production, transportation, and material moving	Production	-0.041	2660	0.04337	0.004753141	0.020591354
53-0000	Production, transportation, and material moving	Transportation & Material moving	0.063	2541	0.04143	-0.015556229	-0.006850262
All Occupations			7.4	61333	1		

WORKFORCE ANALYSIS: SUPPLY AND DEMAND

Table 9: Average Educational Attainment for Workers 25 Years and Older

Average Educational Attainment for workers 25 years and older as a % of Total (Percent are an average of detailed occupations in the major industry code, % of Total, U.S. 2015-2016)											
Occ Code	Occupation Category	Occupation Detailed Category	Major Code	Less than HS	HS or equal	Some college	Associate's	Bachelor's	Masters	Doctoral or Prof	# of Detailed Occupations
11-0000	Management, business, science, and arts	Management	11	2.394117647	11.9764706	17.19411765	7.532352941	35.70588	20.43824	4.776471	34
13-0000	Management, business, science, and arts	Business and financial operations	13	1.5375	11.425	18.53125	8.259375	42.35	15.19063	2.7125	32
15-0000	Management, business, science, and arts	Computer and mathematical	15	0.4	4.07368421	12.51052632	7.721052632	41.81053	25.17895	8.284211	19
17-0000	Management, business, science, and arts	Architecture and engineering	17	1.391428571	9.67428571	16.14	13.94285714	38.88571	16.43429	3.562857	35
19-0000	Management, business, science, and arts	Life, physical, and social science	19	1	4.8372093	6.374418605	3.979069767	36.38837	27.00698	20.41395	43
21-0000	Management, business, science, and arts	Community and social services	21	1.588888889	7.80555556	12.95555556	6.194444444	33.29444	34.04444	4.116667	18
23-0000	Management, business, science, and arts	Legal	23	0.744444444	7.04444444	12.14444444	7.277777778	17.45556	5.488889	49.84444	9
25-0000	Management, business, science, and arts	Education, training, and library	25	0.655555556	3.50952381	5.612698413	3.642857143	23.48413	34.80476	28.35556	63
27-0000	Management, business, science, and arts	Arts, design, entertainment, sports, and media	27	2.434146341	11.3487805	19.10243902	9.607317073	43.32439	11.94878	2.231707	41
29-0000	Management, business, science, and arts	Health diagnosing and treating practitioners and other technical*	29	0.937704918	6.90491803	12.72786885	13.04918033	19.01639	14.90328	32.44754	61
31-0000	Service	Healthcare support	31	5.494117647	22.8470588	28.42352941	26.36470588	13.95882	1.823529	1.152941	17
33-0000	Service	Fire fighting and prevention, and other protective service workers including supervisors & Law enforcement	33	2.640909091	21.5318182	30.99090909	14.37272727	24.24091	5.481818	0.727273	22
35-0000	Service	Food preparation and serving related	35	22.69444444	38.0444444	22.22222222	7.166666667	8.377778	1.211111	0.277778	18
37-0000	Service	Building and grounds cleaning and maintenance	37	28.03	38.18	18.69	5.91	7.91	1.13	0.19	10
39-0000	Service	Personal care and service	39	9.063636364	29.4393939	26.78181818	10.87575758	18.66667	4.330303	0.884848	33
41-0000	Sales and office	Sales and related	41	5.572727273	23.5772727	24.79545455	9.063636364	29.5	6.445455	1.063636	22
43-0000	Sales and office	Office and administrative support	43	3.908928571	27.7142857	31.1875	11.53035714	20.40714	4.598214	0.664286	56
45-0000	Natural resources, construction, and maintenance	Farming, fishing, and forestry	45	38.77142857	33.3571429	12.96428571	4.935714286	8.114286	1.621429	0.285714	14
47-0000	Natural resources, construction, and maintenance	Construction and extraction	47	25.185	43.9116667	19.92	5.318333333	4.915	0.63	0.14	60
49-0000	Natural resources, construction, and maintenance	Installation, maintenance, and repair	49	10.63269231	37.725	27.94230769	13.45	8.486538	1.45	0.282692	52
51-0000	Production, transportation, and material moving	Production	51	18.80277778	42.9842593	21.94907407	7.423148148	7.384259	1.167593	0.296296	108
53-0000	Production, transportation, and material moving	Transportation & Material moving	53	11.84038462	39.2596154	26.12115385	8.040384615	12.09038	2.255769	0.415385	52

WORKFORCE ANALYSIS: SUPPLY AND DEMAND

Table 10: Occupation by required Education and Training

			Count of Detailed Occupations by Education and training (U.S., 2016 Occ Code)							
Category	Occupation	Detailed Category	Associate's	Bachelor's	Doctoral or professional	H.S. or equivalent	Master's	No formal educational credential	Postsecondary nondegree	Some college, no degree
11-0000	Management, business, science, and arts	Management	1	24		7	2			
13-0000	Management, business, science, and arts	Business and financial operations		28		2		1	1	
15-0000	Management, business, science, and arts	Computer and mathematical	2	13			3			1
17-0000	Management, business, science, and arts	Architecture and engineering	12	22		1				
19-0000	Management, business, science, and arts	Life, physical, and social science	7	21	5		10			
21-0000	Management, business, science, and arts	Community and social services		9		2	7			
23-0000	Management, business, science, and arts	Legal	2	1	4	1			1	
25-0000	Management, business, science, and arts	Education, training, and library	1	18	34	1	7		1	1
27-0000	Management, business, science, and arts	Arts, design, entertainment, sports, and media	1	22		9		6	2	1
29-0000	Management, business, science, and arts	Health diagnosing and treating practitioners and other technical*	12	8	20	4	9		8	
31-0000	Service	Healthcare support	2			9			6	
33-0000	Service	Fire fighting and prevention, and other protective service workers including supervisors & Law enforcement		1		16		2	3	
35-0000	Service	Food preparation and serving related				2		15	1	
37-0000	Service	Building and grounds cleaning and maintenance				5		5		
39-0000	Service	Personal care and service	2			22		4	5	
41-0000	Sales and office	Sales and related		3		10		9		
43-0000	Sales and office	Office and administrative support	2	2		51				1
45-0000	Natural resources, construction, and maintenance	Farming, fishing, and forestry		1		7		6		
47-0000	Natural resources, construction, and maintenance	Construction and extraction				34		26		
49-0000	Natural resources, construction, and maintenance	Installation, maintenance, and repair	3			37			11	1
51-0000	Production, transportation, and material moving	Production				91		14	3	
53-0000	Production, transportation, and material moving	Transportation & Material moving	1	1		29		17	4	

WORKFORCE ANALYSIS: SUPPLY AND DEMAND

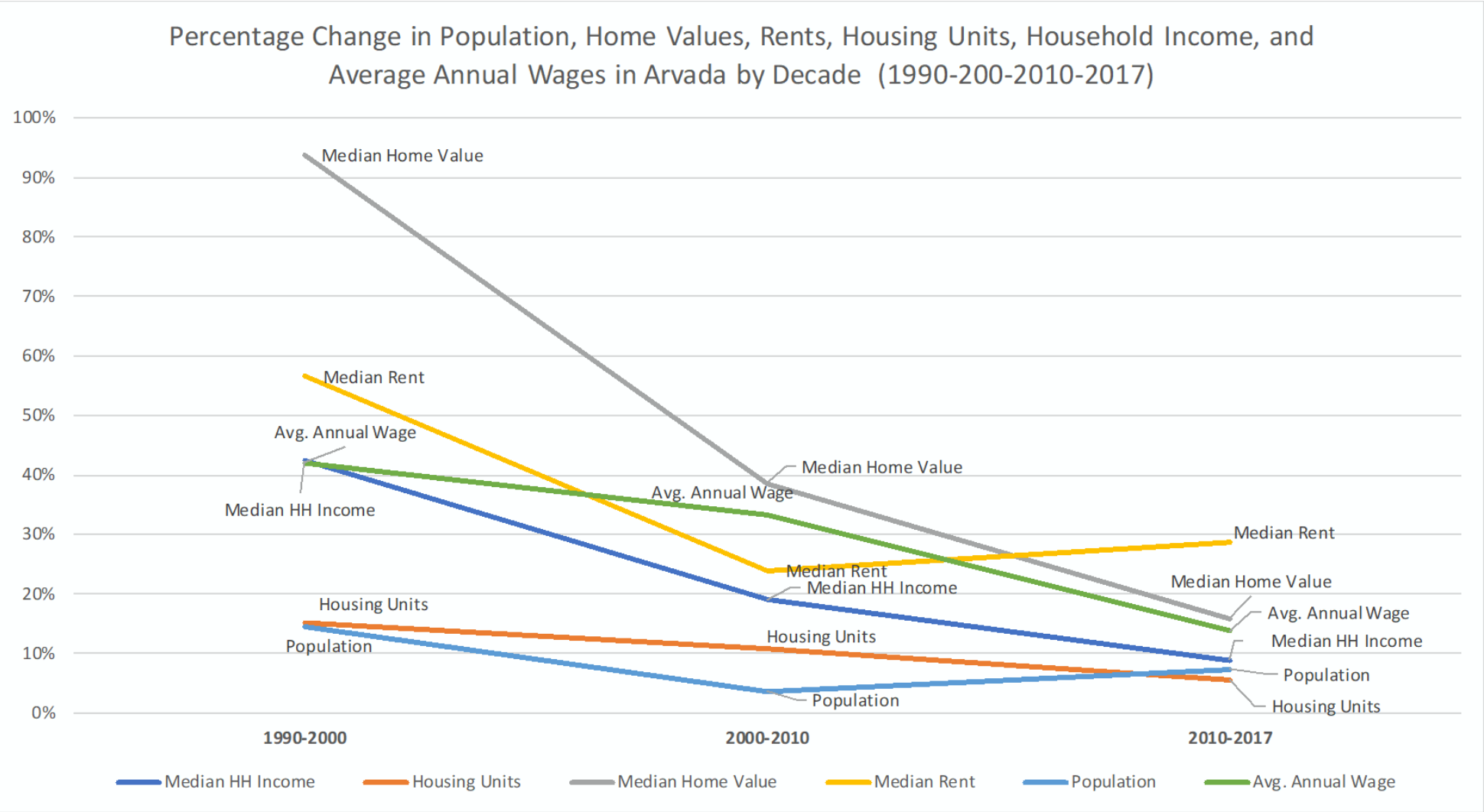
Table 11: Occupations Demanded by Sub Region

			Region: Denver-Aurora-Lakewood-Boulder (2016)				Denver-Aurora-Lakewood (2016)			Boulder (2016)		
Occ Code	Occupation Category	Occupation Detailed Category	Total Estimate of Jobs	% of total Jobs	Job Posts 2018 Q1	% of total job posts	Jobs	LQ	annual mean wage	Boulder Jobs	Boulder LQ	Boulder annual mean wage
11-0000	Management, business, science, and arts	Management	75580	0.047480839	8133	0.14195947	66370	0.93	136270	9210	1.03	135500
13-0000	Management, business, science, and arts	Business and financial operations	125120	0.07860284	3118	0.054423906	112600	1.53	78960	12520	1.37	81310
15-0000	Management, business, science, and arts	Computer and mathematical	79820	0.050144491	6540	0.114154056	66960	1.59	96880	12860	2.46	94330
17-0000	Management, business, science, and arts	Architecture and engineering	44190	0.027761025	3118	0.054423906	36760	1.46	91150	7430	2.37	97150
19-0000	Management, business, science, and arts	Life, physical, and social science	21280	0.013368514	417	0.00727863	14960	1.29	76830	6320	4.37	86240
21-0000	Management, business, science, and arts	Community and social services	19800	0.012438749	463	0.008081549	17590	0.86	49380	2210	0.87	49720
23-0000	Management, business, science, and arts	Legal	16090	0.010108054	312	0.005445882	14800	1.36	110800	1290	0.96	99030
25-0000	Management, business, science, and arts	Education, training, and library	85550	0.053744189	1548	0.027019951	73890	0.85	56060	11660	1.08	62840
27-0000	Management, business, science, and arts	Arts, design, entertainment, sports, and media	26470	0.016628973	1229	0.021451886	22300	1.16	54710	4170	1.74	58030
29-0000	Management, business, science, and arts	Health diagnosing and treating practitioners and other technical*	83220	0.052280437	7649	0.133511372	74090	0.88	84410	9130	0.87	85680
31-0000	Service	Healthcare support	39100	0.024563387	1923	0.033565481	35670	0.88	34480	3430	0.68	36240
33-0000	Service	Fire fighting and prevention, and other protective service workers including supervisors & Law enforcement	31480	0.019776354	1170	0.020422056	29360	0.86	47480	2120	0.5	51230
35-0000	Service	Food preparation and serving related	147160	0.0924488	2667	0.046551814	128880	0.98	24250	18280	1.12	25710
37-0000	Service	Building and grounds cleaning and maintenance	47850	0.030060309	820	0.014312894	43310	0.97	28680	4540	0.82	29740
39-0000	Service	Personal care and service	53660	0.033710265	1033	0.018030755	48170	1.06	27710	5490	0.97	33730
41-0000	Sales and office	Sales and related	184580	0.115956778	4500	0.078546369	166380	1.14	47910	18200	1	52000
43-0000	Sales and office	Office and administrative support	228010	0.143240357	5881	0.102651376	204950	0.92	40720	23060	0.83	39720
45-0000	Natural resources, construction, and maintenance	Farming, fishing, and forestry	2150	0.001350672	44	0.000768009	1760	0.38	27990	390	0.68	28980
47-0000	Natural resources, construction, and maintenance	Construction and extraction	72190	0.045351175	710	0.012392871	67860	1.21	47350	4330	0.62	45800
49-0000	Natural resources, construction, and maintenance	Installation, maintenance, and repair	56320	0.035381329	1945	0.033949486	51850	0.94	49880	4470	0.65	47470
51-0000	Production, transportation, and material moving	Production	61470	0.03861666	1305	0.022778447	52490	0.57	37380	8980	0.79	38970
53-0000	Production, transportation, and material moving	Transportation & Material moving	90710	0.056985802	2766	0.048279835	84560	0.86	42730	6150	0.5	38210
All Occupations			1591800	1	57291	1						

SUMMARY OF WORKFORCE ANALYSIS: SUPPLY AND DEMAND

COMPARISON OF GROWTH IN WAGES, HOUSING UNITS, POPULATION, INCOMES, AND HOUSING COSTS IN ARVADA: 1990 - 2017 (PERCENTAGE CHANGE BETWEEN DECADES)

The following chart compares the percentage change in the values of several variables that are related to Arvada's ability to attract and retain workers and jobs in their desired 7 industries: home values, rents, wages, housing units, population, and household incomes. The key take away is that housing units are not keeping up with the recent growth in population adn that wages and the household income are increasing at a slower rate than home values and rents.



SUMMARY

RECOMENDATIONS

Industrial sites recommendations

- A. Tower Place and Parkway Center should remain industrially zoned. These sites should be attractive to firms in the 15 industries we identified with similar acreage needs, urban locations, and worker occupations.
- B. Candelas should also remain industrial but the City should create a master plan for the site. One option may be to seek an industrial land developer to invest in infrastructure, parcel division, interior roads, and marketing for the site. As is, the infrastructure investments and parcel division would be too costly for any single firm to cover independently. We evaluated the land and building costs of firms that might be attracted to this site and the price of land in Candelas plus infrastructure and land division would be much greater than these types of firms currently pay for their land.

Indutry attraction recommendations

- something about occupations: education levels; highest level of advancement - name specific industries
- something about educating for the occupations in certain industries - partnerng with WIBs, colleges, etc.

- D. Look into creating more vocational training opportunities for Arvada workers so that they have the job skills and occupational training for the 15 identified industries.
- C. Work with Metro Denver and JeffCo EDCs to delve deeper into the identified industries, both regionally and nationally. Specifically, Arvada may want to identify firms in other parts of the country that are expanding or creating satellite firms that may be interested in locating in Colorado. Site selection firms may have information on firms in these industries that are looking for sites like those in Arvada.

workforce supply and demand

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