

# Seattle Industrial Lands

## Technical Analysis Memo

*March 12, 2020*

### INDUSTRIAL EMPLOYMENT

In 2018, there were an estimated 98,400 jobs in industrial areas, an increase of roughly 15% from 85,700 jobs in 2010 (**Exhibit 1**). Employment in industrial areas represents 15% of total employment in the City of Seattle and 6% of total King County employment. The concentration of industrial jobs is highest in industrial areas. Approximately 56% of all jobs in industrial areas are industrial jobs, compared to 17% citywide and 23% countywide.

**Exhibit 1. Industrial and Non-Industrial Employment by Geography, 2010, 2015 and 2018**

		Washington	King County	City of Seattle	Industrial Areas
2010	Industrial	761,800	296,500	101,600	48,100
	Non-Industrial	2,452,200	965,800	415,500	37,600
	<b>Total</b>	<b>3,214,000</b>	<b>1,262,300</b>	<b>517,100</b>	<b>85,700</b>
	<i>Industrial % of total</i>	24%	23%	20%	56%
2015	Industrial	880,800	344,600	107,500	54,100
	Non-Industrial	2,686,100	1,095,700	485,600	40,300
	<b>Total</b>	<b>3,566,900</b>	<b>1,440,300</b>	<b>593,100</b>	<b>94,400</b>
	<i>Industrial % of total</i>	25%	24%	18%	57%
2018	Industrial	948,800	364,600	113,300	55,000
	Non-Industrial	2,904,600	1,208,200	543,500	43,400
	<b>Total</b>	<b>3,853,400</b>	<b>1,572,800</b>	<b>656,800</b>	<b>98,400</b>
	<i>Industrial % of total</i>	25%	23%	17%	56%

*Sources: Puget Sound Regional Council, 2019; Community Attributes, 2019.*

Employment in industrial areas grew at an average annual rate of 1.7% between 2010 and 2018, compared to 3% for total citywide employment and 2.8% for total countywide employment (**Exhibit 2**). During the same period, the growth in industrial employment in industrial areas (1.7%) was higher than the growth in industrial employment in the City of Seattle (1.4%) as a whole.

**Exhibit 2. Industrial and Non-Industrial Employment Compound Annual Growth Rate by Geography, 2010 - 2018**

	Washington	King County	City of Seattle	Industrial Areas
Industrial	2.8%	2.6%	1.4%	1.7%
Non-Industrial	2.1%	2.8%	3.4%	1.8%
<b>Total</b>	<b>2.3%</b>	<b>2.8%</b>	<b>3.0%</b>	<b>1.7%</b>

*Sources: Puget Sound Regional Council, 2019; Community Attributes, 2019.*

## **Industrial Definition**

This study is consistent with the City of Seattle Industrial Lands Land Use and Employment Study from April 2017 in the definition used for industrial activity (**Exhibit 3**). It includes adjusted fishing job estimates using Nonemployer Statistics (NES) data published by the Census Bureau and it excludes software publishing jobs. However, the current study estimates for 2015 industrial employment are different from the 2017 study estimates because Puget Sound Regional Council (PSRC) has revised their employment estimates for 2015 since the completion of the study.

### Exhibit 3. Industrial Definition List of Industry Sectors and NAICS Codes

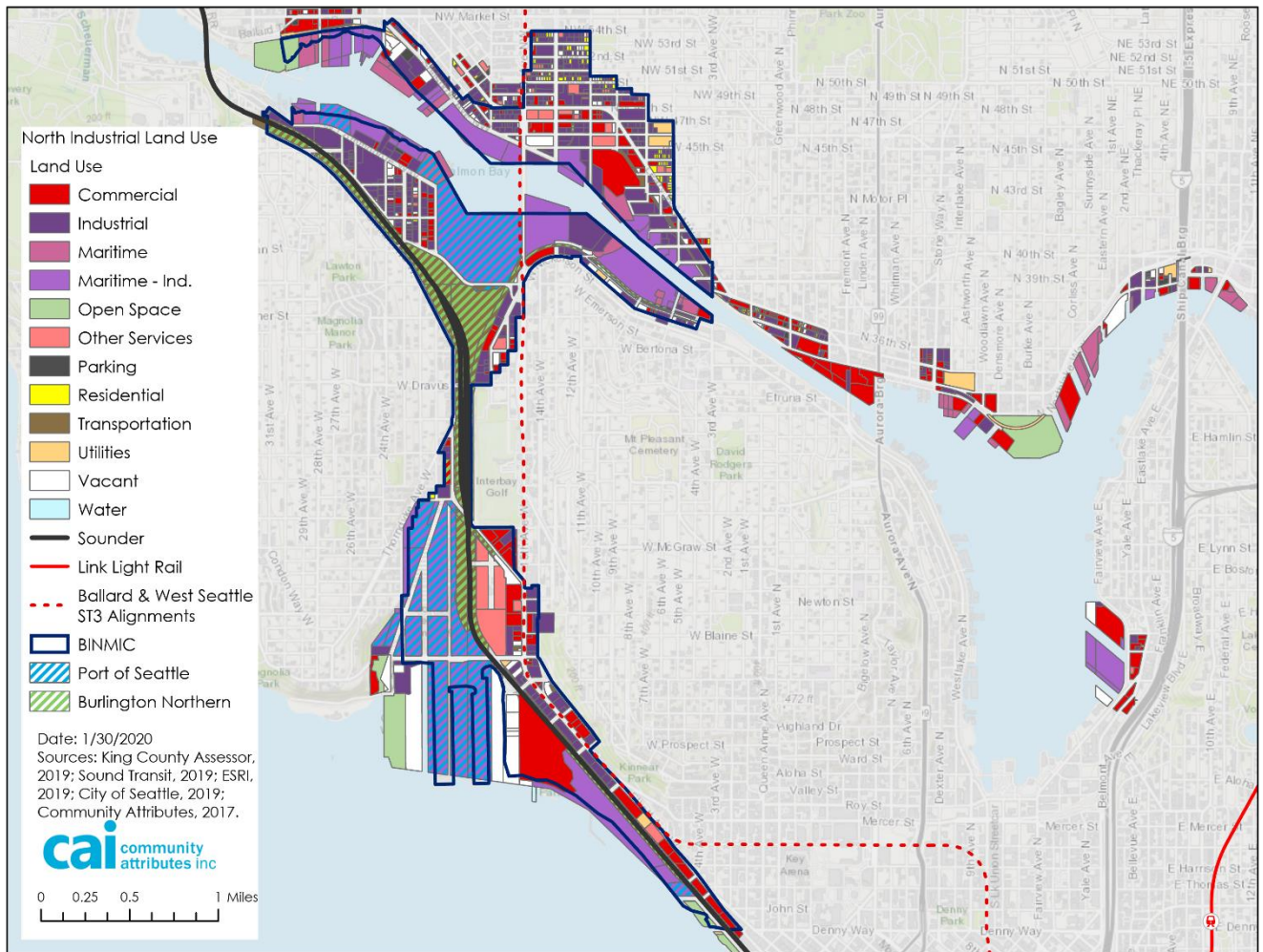
CAI Category	NAICS Code	Industry Code Description	CAI Category	NAICS Code	Industry Code Description
Construction	236	Construction of Buildings	Information	511110	Newspaper publishers
	237	Heavy and Civil Engineering Construction		511120	Periodical publishers
	238	Speciality Trade Contractors		511130	Book publishers
Manufacturing	311	Food		511140	Directory and mailing list publishers
	312	Beverage and Tobacco Product		511191	Greeting card publishers
	313	Textile Mills		511199	All other publishers
	314	Textile Product Mills		51211	Motion Picture and Video Production
	315	Apparel		515	Broadcasting
	316	Leather and Allied Product		517	Telecommunications
	321	Wood Product		53113	Mini Warehouse and Self-Storage
	322	Paper		53212	Truck Rental and Leasing
	323	Printing and Related Support		5324	Machinery/Equipment Rental and Leasing
	324	Petroleum and Coal Products		54138	Testing Laboratories
	325	Chemical		54185	Display Advertising
	326	Plastics and Rubber Products		221	Utilities
	327	Nonmetallic Mineral Product	561612	Security Guards and Patrol	
	331	Primary Metal	56162	Security Systems	
	332	Fabricated Metal Product	56171	Extermination and Pest Control	
	333	Machinery	56172	Janitorial	
	334	Computer and Electronics	56173	Landscaping	
	335	Electrical Equipment, Appliance, and Component	56174	Carpet and Upholstery Cleaning	
	336	Transportation Equipment	56179	Other Services to Buildings and Dwellings	
337	Furniture and Related Product	56191	Packaging and Labeling		
339	Miscellaneous	562	Waste Management and Remediation		
Wholesale Trade	423	Merchant Wholesalers (Durable)	Accommodation and Food Services	72232	Caterers
	424	Merchant Wholesalers (Non-durable)	72233	Mobile Food Services	
	425	Electronic Markets, Agents and Brokers	62191	Ambulance Services	
Retail Trade	4542	Vending Machine Operators	621991	Blood and Organ Banks	
	454311	Heating Oil Dealers	62421	Community Food Services	
Transportation and Warehousing	481	Air Transportation	Other Services	8113	Commercial and Ind. Equip Repair
	482	Rail Transportation	811412	Appliance Repair and Maintenance	
	483	Water Transportation	81233	Linen and Uniform Supply	
	484	Truck Transportation	812332	Industrial Launderers	
	485	Transit and Ground Passenger Transportation	Fishing	1141	Fishing
	486	Pipeline Transportation			
	487	Scenic and Sightseeing Transportation			
	488	Support Activities for Transportation			
	491	Postal Service			
	492	Couriers and Messengers			
493	Warehousing and Storage				

*Sources: City of Seattle Office of Economic Development, Industrial Lands Land Use and Employment Study, April 2017; Community Attributes, 2019.*

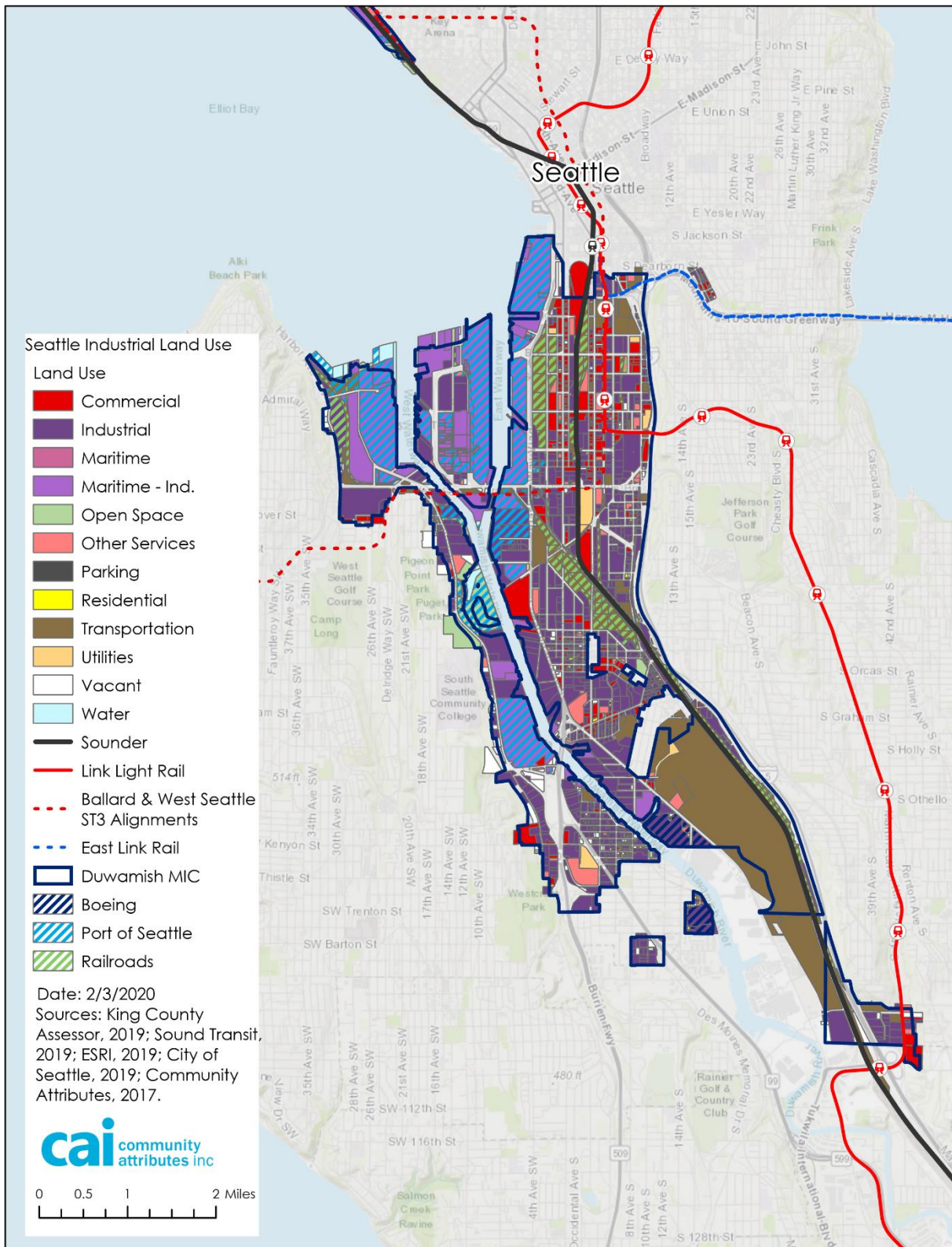
## Industrial Areas

Industrial areas for this study include the Duwamish MIC, BINMIC and other industrial areas adjacent to the MICs. To minimize data suppression issues, the industrial areas were grouped into two south and north geographies for the purposes of the employment and occupational analysis. The southern industrial area includes the Duwamish MIC and a couple of parcels to the north of Duwamish. The northern industrial area includes the BINMIC and several parcels on the north and east sides of Lake Union. **Exhibit 4** and **Exhibit 5** show the land uses for the north and south industrial areas based on 2019 King County Assessor land use data combined with the land use edits established by the City of Seattle 2017 Industrial Lands Land Use and Employment Study.

**Exhibit 4. Northern Industrial Area Land Uses, 2017**



## Exhibit 5. Southern Industrial Area Land Uses, 2017



## EMPLOYMENT BY INDUSTRY

Construction and Utilities jobs rank highest in industrial areas, followed by Maritime, Distribution and Technology. Several industries have more than half of their Seattle employment located in industrial areas: Aerospace (78%), Transportation & Logistics (62%), Maritime (55%) and Other Manufacturing (51%). (**Exhibit 6**)

**Exhibit 6. Industrial Areas Employment by Industry, 2010 and 2018**

Industry	Seattle		Total Industrial Areas	
	Employment	2010-2018 CAGR	Employment	2010-2018 CAGR
Construction and Utilities	34,400	5.0%	13,700	3.8%
Maritime	15,600	-0.7%	8,600	3.6%
Distribution & E-commerce	60,400	14.5%	8,500	0.8%
ICT	50,400	9.8%	8,200	10.1%
Hospitality & Tourism	70,800	3.7%	6,700	2.0%
Aerospace	7,900	-2.3%	6,300	*
Transportation & Logistics	9,100	3.0%	5,500	2.3%
Government	49,400	0.2%	5,300	-2.5%
Other Manufacturing	10,600	-0.3%	5,900	-0.4%
All Other Retail	23,000	0.6%	3,400	2.9%
Food & Beverage Production	16,500	2.9%	3,800	4.4%
Education	59,000	0.0%	1,200	9.1%
All Other Services	249,500	2.2%	21,400	0.8%
Suppressed	200	0.0%	-	0.0%
<b>Total</b>	<b>656,800</b>	<b>3.0%</b>	<b>98,500</b>	<b>1.8%</b>

*Sources: Puget Sound Regional Council, 2019; Community Attributes, 2019.*

### Exhibit 7. Employment by Industry and Geography, 2010, 2015 and 2018

Industry	Washington			King County			Seattle		
	2010	2015	2018	2010	2015	2018	2010	2015	2018
Hospitality & Tourism	284,400	321,200	360,400	113,400	133,100	149,000	52,800	63,400	70,800
Construction and Utilities	302,800	350,700	402,200	70,700	87,100	100,500	23,200	27,400	34,400
ICT	142,300	172,700	203,700	107,100	131,000	160,200	23,900	36,000	50,400
Distribution & E-commerce	114,100	146,200	166,500	58,600	79,700	103,400	20,500	38,700	60,400
Food & Beverage Production	120,000	134,900	144,100	38,800	44,200	49,400	13,100	15,900	16,500
Aerospace	111,200	136,600	133,100	58,500	69,300	70,600	9,500	8,700	7,900
Transportation & Logistics	73,700	86,900	103,000	27,700	32,400	36,300	7,200	7,700	9,100
Maritime	38,800	40,300	42,500	16,400	21,400	19,700	16,500	15,100	15,600
Other Manufacturing	98,700	110,500	107,800	28,400	32,000	31,000	10,900	11,200	10,600
<i>Metalworking, Automotive &amp; Machinery Manufacturing</i>	20,300	29,400	28,400	5,300	7,700	7,700	1,800	2,100	2,100
<i>Wood, Furniture &amp; Related Products</i>	18,900	19,600	19,100	2,300	2,000	1,800	700	600	500
<i>Paper &amp; Packaging, Printing &amp; Publishing Services</i>	25,200	21,200	18,200	9,200	7,800	6,400	4,400	4,300	3,700
<i>Medical &amp; Consumer Product Manufacturing</i>	13,800	17,000	18,100	5,400	8,100	8,800	1,800	1,900	1,800
<i>Plastics</i>	7,900	8,500	8,800	2,100	2,200	2,100	*	*	*
<i>Chemical Manufacturing &amp; Biopharmaceuticals</i>	3,600	5,800	5,500	500	900	900	300	300	400
<i>Textile, Apparel &amp; Leather Manufacturing</i>	5,100	4,400	4,500	2,600	2,200	2,200	1,400	1,600	1,600
<i>Oil and Gas Production and Transportation</i>	1,800	2,100	2,900	0	0	0	*	*	*
<i>Vulcanized Materials Manufacturing</i>	2,100	2,600	2,300	1,000	1,100	1,100	500	500	500
All Other Retail	218,800	261,900	271,400	70,500	80,700	80,900	21,900	23,400	23,000
All Other Services	1,112,600	1,176,200	1,259,000	458,600	497,100	526,600	209,800	232,600	249,500
Government	310,100	308,700	325,800	88,500	88,400	93,600	48,700	46,600	49,400
Education	261,500	281,200	297,000	91,300	103,300	107,200	58,900	66,500	59,000
Suppressed	24,700	38,900	37,000	33,900	40,600	44,400	100	100	200
<b>Total</b>	<b>3,214,000</b>	<b>3,566,900</b>	<b>3,853,300</b>	<b>1,262,300</b>	<b>1,440,300</b>	<b>1,572,900</b>	<b>517,100</b>	<b>593,000</b>	<b>656,800</b>

Sources: Puget Sound Regional Council, 2019; Community Attributes, 2019.

Note: ICT is Information, Communication & Technology.

**Exhibit 7. Employment by Industry and Geography, 2010, 2015 and 2018 cont.**

Industry	North Industrial Areas			South Industrial Areas			Total Industrial Areas		
	2010	2015	2018	2010	2015	2018	2010	2015	2018
Hospitality & Tourism	1,600	1,700	2,000	4,100	4,600	4,700	5,700	6,300	6,700
Construction and Utilities	1,700	1,700	2,100	8,500	9,500	11,600	10,200	11,200	13,700
ICT	2,400	5,600	6,500	1,400	2,100	1,700	3,800	7,700	8,200
Distribution & E-commerce	1,500	1,300	1,300	6,500	7,200	7,100	8,000	8,500	8,400
Food & Beverage Production	600	600	600	2,100	2,900	3,200	2,700	3,500	3,800
Aerospace	*	*	700	*	*	5,500	*	*	6,200
Transportation & Logistics	100	300	500	4,500	5,000	5,100	4,600	5,300	5,600
Maritime	4,300	5,500	5,600	2,200	3,400	3,000	6,500	8,900	8,600
Other Manufacturing	2,000	1,500	1,200	4,100	4,500	4,200	6,100	6,000	5,400
<i>Metalworking, Automotive &amp; Machinery Manufacturing</i>	300	300	300	1,300	1,500	1,500	1,600	1,800	1,800
<i>Wood, Furniture &amp; Related Products</i>	*	*	*	*	*	*	*	*	*
<i>Paper &amp; Packaging, Printing &amp; Publishing Services</i>	800	300	200	800	700	700	1,600	1,000	900
<i>Medical &amp; Consumer Product Manufacturing</i>	200	200	200	800	1,100	800	1,000	1,300	1,000
<i>Plastics</i>	*	*	*	*	*	*	*	*	*
<i>Chemical Manufacturing &amp; Biopharmaceuticals</i>	*	*	*	*	*	*	*	*	*
<i>Textile, Apparel &amp; Leather Manufacturing</i>	*	*	*	*	*	*	*	*	*
<i>Oil and Gas Production and Transportation</i>	*	*	*	*	*	*	*	*	*
<i>Vulcanized Materials Manufacturing</i>	200	200	*	100	100	*	300	300	*
All Other Retail	1,000	1,000	1,200	1,700	2,000	2,200	2,700	3,000	3,400
All Other Services	7,500	7,000	6,100	12,500	13,500	15,300	20,000	20,500	21,400
Government	700	500	500	5,800	4,200	4,900	6,500	4,700	5,400
Education	100	200	200	500	1,000	1,000	600	1,200	1,200
Suppressed	700	1,000	300	7,600	6,500	200	8,300	7,500	500
<b>Total</b>	<b>24,300</b>	<b>27,900</b>	<b>28,700</b>	<b>61,400</b>	<b>66,500</b>	<b>69,800</b>	<b>85,700</b>	<b>94,400</b>	<b>98,500</b>

Sources: Puget Sound Regional Council, 2019; Community Attributes, 2019.

Note: ICT is Information, Communication & Technology.



## Marijuana Businesses and Jobs on Industrial Lands in Seattle

Community Attributes Inc., on behalf of the Industrial Lands Advisory Panel, worked with the Puget Sound Regional Council to assess the size and breadth of marijuana businesses operating on industrial lands in Seattle. CAI developed a custom data request with PSRC, based on licensed marijuana businesses reported by the Washington State Liquor Control Board.

CAI collected information on 138 businesses with marijuana licenses with addresses in Seattle. Of these, 80 were matched to PSRC employment and wage records. These businesses include licenses for recreational and medicinal marijuana retail, processing, and transportation & distribution. A total of 1,046 jobs were associated with these 80 licensed marijuana businesses in Seattle.

Of these businesses, those located in the Duwamish MIC employed 421 workers in 2018. Another 70 workers were employed either in the BINMIC or other industrial lands outside the two MICs (due to data disclosure restrictions, reportage between BINMIC and other industrial lands was not possible). A total of 555 workers were employed in businesses operating on parcels not classified as industrial (**Exhibit 8**).

### **Exhibit 8. Jobs Among Licensed Marijuana Businesses in Seattle, On and Off Industrial Lands, 2018**

Area	Jobs
Duwamish MIC	421
Other Industrial*	70
Non-Industrial	555
<b>Total</b>	<b>1,046</b>

*Sources: Washington State Liquor Control Board, 2020; Puget Sound Regional Council, 2020; Community Attributes Inc., 2020.*

*\* "Other Industrial" includes the Ballard-Interbay-Northend MIC.*

**Exhibit 9. Marijuana Business Jobs in Seattle by Category of License and On or Off Industrial Lands, 2018**

Area	Processor and Transportation Jobs	Retailer/Medical Jobs	Total
All Industrial**	359	132	491
Non-Industrial	93	462	555
<b>Total</b>	<b>452</b>	<b>594</b>	<b>1,046</b>

*Sources: Washington State Liquor Control Board, 2020; Puget Sound Regional Council, 2020; Community Attributes Inc., 2020.*

*\*\* "All Industrial" includes BINMIC and Duwamish MIC.*

Within industrial lands, 359 jobs belonged to businesses licensed to do either marijuana processing or transportation, representing nearly three quarters of all marijuana operations employment on industrial lands. Nearly the opposite was true for marijuana businesses located off industrial lands, with 462 jobs, or 83% of all marijuana jobs off industrial lands, were in businesses licensed for either marijuana retail or medical marijuana (**Exhibit 9**).

## OCCUPATIONAL EMPLOYMENT

Industry employment in industrial areas was converted to occupations based on staffing patterns for King County, using the occupations-industry matrix. The matrix displays occupational compositions by industry in King County<sup>1</sup> and is based upon an occupational employment statistics (OES) survey.

Office and Administrative Support Occupations make up 12% of total employment in industrial areas. Roughly 29% of these occupations are within the Other services industry, with another 33% in the Maritime, Construction & Utilities and Distribution & E-commerce. Transportation and material moving occupations represent another 11%, with most of those occupations in the Transportation & Logistics and Maritime industries.

**Exhibit 10. Occupational Employment Estimates in Industrial Areas, 2018**

2 Digit SOC	SOC Description	% of Industrial Areas Employment	Total Industrial Areas Employment	Annual Growth Rate, King County, 2022-2027	Total Openings, King County, 2022-2027
43-0000	Office and Administrative Support	12%	12,300	1.2%	63,590
53-0000	Transportation and Material Moving	11%	10,500	1.0%	34,603
15-0000	Computer and Mathematical	9%	9,100	2.8%	60,209
41-0000	Sales and Related	9%	8,400	1.0%	54,021
13-0000	Business and Financial Operations	8%	8,100	2.1%	50,828
47-0000	Construction and Extraction	8%	8,000	0.6%	35,223
51-0000	Production	8%	7,600	0.3%	17,201
11-0000	Management	7%	7,200	2.2%	48,510
35-0000	Food Preparation and Serving Related	6%	5,600	1.2%	59,163
49-0000	Installation, Maintenance, and Repair	4%	3,700	0.7%	16,604
29-0000	Healthcare Practitioners and Technical	3%	2,800	2.0%	24,412
17-0000	Architecture and Engineering	3%	2,600	0.7%	9,121
39-0000	Personal Care and Service	2%	2,300	1.9%	30,583
37-0000	Building and Grounds Cleaning and Maintenance	2%	1,500	1.4%	16,867
27-0000	Arts, Design, Entertainment, Sports, and Media	1%	1,400	1.8%	16,088
31-0000	Healthcare Support	1%	1,400	2.2%	15,408
33-0000	Protective Service	1%	1,400	1.3%	8,583
25-0000	Education, Training, and Library	1%	1,300	1.7%	20,810
21-0000	Community and Social Service	1%	900	1.4%	6,293
45-0000	Farming, Fishing, and Forestry	1%	900	-0.3%	2,667
19-0000	Life, Physical, and Social Science	1%	800	1.5%	5,540
23-0000	Legal	1%	700	1.0%	4,267
<b>TOTAL</b>		<b>100%</b>	<b>98,500</b>	<b>1.5%</b>	<b>600,591</b>

Sources: Puget Sound Regional Council, 2019; Washington State Employment Security Department, 2019; Community Attributes, 2019.

<sup>1</sup> The smallest geography available are Workforce Development Areas (WDA). King County represents its own WDA. Occupational compositions by industry for King County are assumed to be representative of occupational compositions in industrial areas in Seattle.

## Exhibit 11. Occupational Employment Estimates in Industrial Areas for Top Ranking Industries, 2018

Occupation	Employment, 2018		Educational Requirements	Median Wage, 2018	Demand	
	Industrial Areas	Seattle			Annual Growth Rate, 2022-2027	Total Openings, 2022-2027
<b>Construction and Utilities</b>						
Carpenters	1,460	3,672	High school diploma or equivalent	\$71,500	0.8%	8,768
Construction Laborers	1,143	2,876	No formal educational credential	\$73,970	0.9%	5,685
Construction and Extraction Workers Supervisors	975	2,453	High school diploma or equivalent	\$48,110	0.8%	3,752
Electricians	815	2,051	High school diploma or equivalent	\$67,480	0.5%	2,781
Painters	611	1,538	No formal educational credential	\$71,420	0.6%	4,030
Other	8,673	21,816				
<b>Total Construction and Utilities</b>	<b>13,677</b>	<b>34,405</b>	<b>% No Degree Required</b>	<b>87%</b>	<b>% Middle Wage</b>	<b>71%</b>
<b>Maritime</b>						
Cargo and Freight Agents	590	1,076	High school diploma or equivalent	\$33,880	1.8%	411
Laborers and Freight, Stock, and Material Movers	577	1,052	No formal educational credential	\$40,330	0.9%	10,546
Fishers and Related Fishing Workers	448	815	No formal educational credential	\$23,310	-2.5%	980
Meat, Poultry, and Fish Cutters and Trimmers	322	587	No formal educational credential	\$30,740	0.2%	279
Captains, Mates, and Pilots of Water Vessels	320	583	Postsecondary nondegree award	*	0.5%	400
Other	6,328	11,529				
<b>Total Maritime</b>	<b>8,585</b>	<b>15,642</b>	<b>% No Degree Required</b>	<b>82%</b>	<b>% Middle Wage</b>	<b>28%</b>
<b>Distribution &amp; E-commerce</b>						
Sales Representatives	834	5,942	High school diploma or equivalent	\$63,860	0.6%	5,199
Software Developers, Applications	737	5,252	Bachelor's degree	\$111,330	3.5%	24,584
Marketing Managers	639	4,556	Bachelor's degree	\$137,250	3.6%	7,431
Laborers and Freight, Stock, and Material Movers	412	2,936	No formal educational credential	\$40,330	0.9%	10,546
Computer Occupations, All Other	401	2,856	Bachelor's degree	*	3.2%	7,564
Other	5,453	38,849				
<b>Total Distribution &amp; E-commerce</b>	<b>8,476</b>	<b>60,391</b>	<b>% No Degree Required</b>	<b>43%</b>	<b>% Middle Wage</b>	<b>30%</b>
<b>ICT</b>						
Software Developers, Applications	2,312	14,191	Bachelor's degree	\$111,330	3.5%	24,584
Computer Programmers	438	2,689	Bachelor's degree	\$82,050	-0.2%	2,410
Software Developers, Systems Software	354	2,174	Bachelor's degree	*	2.5%	5,036
Computer Systems Analysts	331	2,032	Bachelor's degree	\$129,570	2.4%	5,073
Computer and Information Systems Managers	303	1,860	Bachelor's degree	\$136,140	3.2%	5,307
Other	4,465	27,404				
<b>Total ICT</b>	<b>8,204</b>	<b>50,350</b>	<b>% No Degree Required</b>	<b>17%</b>	<b>% Middle Wage</b>	<b>30%</b>
<b>Hospitality &amp; Tourism</b>						
Food Preparation and Serving Workers	1,263	13,353	No formal educational credential	\$32,240	1.5%	16,202
Waiters and Waitresses	1,052	11,123	No formal educational credential	\$27,210	1.0%	12,440
Cooks, Restaurant	605	6,396	No formal educational credential	\$28,670	1.3%	7,204
Food Preparation and Serving Workers Supervisors	307	3,243	High school diploma or equivalent	\$60,230	1.1%	3,954
Bartenders	267	2,819	No formal educational credential	\$29,420	1.2%	3,234
Other	3,206	33,886				
<b>Total Hospitality &amp; Tourism</b>	<b>6,700</b>	<b>70,820</b>	<b>% No Degree Required</b>	<b>92%</b>	<b>% middle wage</b>	<b>21%</b>
<b>Aerospace</b>						
Aircraft Assemblers	411	519	High school diploma or equivalent	\$43,740	-0.1%	378
Flight Attendants	351	443	High school diploma or equivalent	\$81,230	1.6%	934
Ticket Agents and Travel Clerks	242	305	High school diploma or equivalent	*	1.3%	881
Industrial Engineers	217	274	Bachelor's degree	\$75,320	1.5%	781
Machinists	213	269	High school diploma or equivalent	\$40,460	0.6%	921
Other	4,820	6,082				
<b>Total Aerospace</b>	<b>6,255</b>	<b>7,892</b>	<b>% No Degree Required</b>	<b>54%</b>	<b>% Middle Wage</b>	<b>35%</b>
<b>Transportation &amp; Logistics</b>						
Laborers and Freight, Stock, and Material Movers	851	1,403	No formal educational credential	\$40,330	0.9%	10,546
Heavy and Tractor-Trailer Truck Drivers	766	1,263	Postsecondary nondegree award	\$39,920	0.5%	3,558
Light Truck or Delivery Services Drivers	659	1,088	High school diploma or equivalent	\$39,960	1.2%	2,867
Bus Drivers, School or Special Client	300	495	High school diploma or equivalent	\$79,330	1.5%	1,178
Taxi Drivers and Chauffeurs	230	380	No formal educational credential	\$92,650	1.3%	1,836
Other	2,732	4,506				
<b>Total Transportation &amp; Logistics</b>	<b>5,538</b>	<b>9,136</b>	<b>% No Degree Required</b>	<b>91%</b>	<b>% Middle Wage</b>	<b>27%</b>

Note: % of employment that does not require a degree and that pays a middle wage is expressed as a share of total employment in industrial areas.

Sources: Puget Sound Regional Council, 2019; Washington State Employment Security Department, 2019; U.S. Bureau of Labor Statistics, 2019; Community Attributes, 2019

**Exhibit 11** shows employment estimates by occupation for top ranking industries in industrial areas.

Occupational employment estimates by educational requirement in industrial areas are estimated based on the 2018 national employment matrix produced by the U.S. Bureau of Labor Statistics. The matrix shows the typical education level most workers need to enter an occupation. The matrix is only available for US as a whole.

**Exhibit 12. Occupational Employment in Industrial Areas by Educational Requirement, 2018**

Educational Requirement	% of Industrial Areas Employment
No formal educational credential	21%
High school diploma or equivalent	37%
Postsecondary nondegree award	5%
Some college, no degree	2%
Associate's degree	2%
Bachelor's degree	29%
Master's degree	1%
Doctoral or professional degree	1%
<b>Total</b>	<b>100%</b>

*Sources: Puget Sound Regional Council, 2019; Washington State Employment Security Department, 2019; U.S. Bureau of Labor Statistics, 2019; Community Attributes, 2019.*

**Exhibit 13. Occupational Employment in Industrial Areas by Median Wage, 2018**

Median Wage	% of Industrial Areas Employment
Less than \$45K	33%
\$45k to \$85K	41%
\$85K to \$125K	11%
More than \$125K	7%
Suppressed	9%
<b>Total</b>	<b>100%</b>

*Sources: Puget Sound Regional Council, 2019; Washington State Employment Security Department, 2019; U.S. Bureau of Labor Statistics, 2019; Community Attributes, 2019*

Two-thirds of jobs in industrial areas are obtainable without a college degree and just over one third have a median wage of less than \$45,000. (**Exhibit 12** and **Exhibit 13**)

Median wages are sourced from the U.S. Bureau of Labor Statistics Occupational Employment Statistics for the Seattle-Tacoma-Bellevue MSA. Median wages for industrial areas are estimated based on the occupational composition of industry employment.

## INDUSTRIES OF INTEREST DEFINITIONS

### Maritime

The maritime sector definition (**Exhibit 14**) follows the definition in CAI's Washington State Maritime Sector Economic Impacts Study, 2017 update<sup>2</sup>, which includes:

- **Commercial fishing and seafood products.** This category includes all activity related to the catching and processing of fish, including both finfish and shellfish. As fishing vessel owners continue to shift toward at-sea primary processing, this subsector continues to become more integrated. This category includes fishing and seafood processing that occurs on Washington vessels operating in Alaskan waters.
- **Maritime Logistics and Shipping.** This subsector includes all activity related to the shipping of goods by water, including container and bulk goods. Trans-ocean, shoreline, and river freighting are included in this category, as is direct transportation by land to the state's ports for exports via water. For example, this category includes grain that is trucked to Tri-Cities for shipment via barge down the Columbia River. This category also includes tug operations and piloting services.
- **Passenger Water Transportation.** This subsector includes all Passenger Water Transportation, including recreational transportation. This covers Washington's ferries as well as economic activities related to cruise ships. River and harbor cruises and boat tours are included in this category, as is most other scenic and sightseeing water transportation. The notable exception to this is charter fishing activities, which are included under the Recreational Boating and Boat Building category.
- **Recreational boating and boat building.** This subsector includes charter fishing activities around the state, recreational marinas, recreational boat manufacturing, retail boat dealers, and other related activities.

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<sup>2</sup>[https://www.maritimefederation.com/uploads/2/9/9/6/29962189/cai.wmf.maritime\\_cluster\\_study\\_2017\\_update.2017\\_0413.pdf](https://www.maritimefederation.com/uploads/2/9/9/6/29962189/cai.wmf.maritime_cluster_study_2017_update.2017_0413.pdf)

- **Ship building, repair and maintenance.** This category covers all commercial and federal boat and ship building, repair and maintenance activities. Washington manufacturers produce ferries, work boats, small craft, barges, and a wide array of specialized vessels. This category also covers activities at the Puget Sound Naval Shipyard (PSNS) and other government shipbuilding, repair and maintenance.
- **Maritime Support Services.** Support services covers technical and professional maritime services, such as engineering and naval architecture, as well as business support, such as legal and accounting businesses and industry associations. Washington’s maritime education organizations are also included in this subsector.

Custom analysis was undertaken in the 2017 maritime sector study for subsectors that were not adequately defined by NAICS codes alone, such as for warehousing and drayage, support services and recreational boat building. This entailed assembling a list of businesses in these subsectors through interviews, industry association member lists, and other supplemental sources. For this reason, the maritime industry employment estimates included in this analysis are not directly comparable to CAI’s 2017 study estimates for this industry. The maritime industry in the current study only includes those subsectors defined by NAICS codes and supporting activities are captured in other industries.

## Aerospace

The aerospace sector definition (**Exhibit 15**) follows the definition in CAI’s Washington Aerospace Economic Impacts 2018 Update Study<sup>3</sup>. In addition to the aircraft manufacturing NAICS, this definition also includes additional businesses and operations with strong overlapping services and linkages with aerospace. These related industries represent a list of North American Industry Classification System (NAICS) codes developed by the Washington State Employment Security Department (ESD) and Washington Aerospace Partnership in 2013, and has been used in the 2013, 2015, and 2016 aerospace reports to approximate the broader aerospace supply chain ecosystem.

## Transportation & Logistics

This sector’s definition (**Exhibit 16**) is developed based on CAI’s definition of transportation and logistics from the Global Trade & Supply Chain Management Sector Economic Analysis, February 2019 and the U.S. Cluster Mapping Project.

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<sup>3</sup> <http://nma.choosewashingtonstate.com/wp-content/uploads/2018/12/CAI-AFA-2018-Aerospace-Update.pdf>

Transportation and logistics activities include businesses and activities central to the movement of goods and people:

- **Freight forwarding** entails a suite of services on behalf of shippers. These include tracking inland transportation, preparation of shipping and export documents, warehousing, booking cargo space, negotiating freight charges, freight consolidation, cargo insurance and filing of insurance claims.
- **Intermodal & transloading** is the movement of cargo from one mode to another, such as from a maritime vessel to a train. Transloading includes marine and air cargo handling, terminal operators, airport ground-handling services, courier services, trucking companies (long-haul and drayage activities), rail operators and the consolidating and repackaging of cargo, often between 40-foot and 52-foot containers.
- **Local transportation services** contain establishments that offer local transportation of freight and goods, including moving companies and couriers.
- **Warehousing and storage**, including dry storage and refrigeration facilities for perishable goods.
- **Passenger transportation** contains establishments that offer local passenger transportation services.
- **Passenger car rental.**
- **Truck leasing.**

Some transportation and logistics activities overlap with other industries such as maritime and aerospace. To avoid double-counting of employment, these activities have only been included in one industry so there is no duplication of NAICS codes between industries. For example, marine cargo handling is an intermodal & transloading activity but was included in the maritime industry because it specifically supports economic activity within that industry.

## Information & Communication Technology (ICT)

The ICT sector definition (**Exhibit 17**) follows the definition developed by CAI in the Washington Technology Industry Association ICT Economic and Fiscal Impact Study<sup>4</sup>, February 2015, and includes the following subsectors:

- **ICT Business Services.** Business Services in general include a large range of business to business activities, including many that have nothing to do with ICT. Only those related to ICT are included in this report, however, though even so this group is the most diverse among

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<sup>4</sup> <https://washingtontechnology.org/wp-content/uploads/2015/04/ICT-Economic-Report.pdf>



the segments of ICT discussed in this report. Activities range from repair services to custom programming and computer design.

- **Internet Services & Publishing.** Activities in this group include web hosting and data processing.
- **Manufacturing.** This segment includes the semiconductor industry, which in Washington are concentrated in Southwest Washington near the Portland cluster of ICT. Many smaller electronics and communications equipment firms throughout Washington belong to this group.
- **Software.** Anchored by Microsoft, Software includes computer game companies and other well-known companies such as Adobe, Tableau and more.
- **Telecommunications Services.** This group includes installation, maintenance, and service provision of broadband and mobile utilities and technologies.

Electronic retail, a fast-growing segment driven largely by growth in Amazon, was included in the Distribution & E-commerce industry grouping.

## Other Industries

The definitions for the other industries of interest are based on the US Cluster Mapping Project definitions for traded and local clusters. These industries include:

- Other Manufacturing (**Exhibit 18**)
  - Metalworking, Automotive & Machinery Manufacturing
  - Wood Furniture & Related Products
  - Paper & Packaging, Printing & Publishing Services
  - Medical & Consumer Product Manufacturing
  - Plastics
  - Chemical Manufacturing & Biopharmaceuticals
  - Textile, Apparel & Leather Manufacturing
  - Oil and Gas Production and Transportation
  - Vulcanized Material Manufacturing
- Distribution & E-commerce (**Exhibit 19**)
- Construction & Utilities (**Exhibit 20**)
- Food & Beverage Production (**Exhibit 21**)
- Hospitality & Tourism (**Exhibit 22**)
- All Other Education (**Exhibit 23**)
- All Other Retail (**Exhibit 24**)
- All Other Services (**Exhibit 25**)

## Exhibit 14. Maritime Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
<b>Commercial Fishing and Seafood Products</b>		
112511	Finfish Farming and Fish Hatcheries	N
112512	Shellfish Farming	N
114111	Finfish Fishing	Y
114112	Shellfish Fishing	Y
3117	Seafood Product Preparation and Packaging	Y
424460	Fish and Seafood Merchant Wholesalers	Y
445220	Fish and Seafood Markets	N
<b>Maritime Logistics and Shipping</b>		
482	Rail Transportation	Y
483111	Deep Sea Freight Transportation	Y
483113	Coastal and Great Lakes Freight Transportation	Y
483211	Inland Water Freight Transportation	Y
488210	Support Activities for Rail Transportation	Y
488310	Port and Harbor Operations	Y
488320	Marine Cargo Handling	Y
488330	Navigational Services to Shipping	Y
488510	Freight Transportation Arrangement	Y
493120	Refrigerated Warehousing and Storage	Y
<b>Passenger Water Transportation</b>		
483112	Deep Sea Passenger Transportation	Y
483114	Coastal and Great Lakes Passenger Transportation	Y
483212	Inland Water Passenger Transportation	Y
488390	Other Support Activities for Water Transportation	Y
<b>Recreational Boating and Boat Building</b>		
441222	Boat Dealers	N
487210	Scenic and Sightseeing Transportation, Water	Y
713930	Marinas	N
<b>Ship building, Repair and Maintenance</b>		
3366	Ship and Boat Building	Y

Sources: Washington Maritime Federation, Washington State Maritime Sector Economic Impact Study, 2017 Update; Community Attributes, 2019.

## Exhibit 15. Aerospace Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
<b>Aerospace</b>		
3364	Aerospace Product and Parts Manufacturing	Y
<b>Aerospace Related</b>		
325211	Plastics Material and Resin Manufacturing	Y
332710	Machine Shops	Y
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	Y
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	Y
333512	Machine Tool Manufacturing	Y
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	Y
333517	Machine Tool Manufacturing	Y
333611	Turbine and Turbine Generator Set Units Manufacturing	Y
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	Y
333613	Mechanical Power Transmission Equipment Manufacturing	Y
333618	Other Engine Equipment Manufacturing	Y
334417	Electronic Connector Manufacturing	Y
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	Y
334419	Other Electronic Component Manufacturing	Y
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	Y
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	Y
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	Y
334519	Other Measuring and Controlling Device Manufacturing	Y
335311	Power, Distribution, and Specialty Transformer Manufacturing	Y
335314	Relay and Industrial Control Manufacturing	Y
335921	Fiber Optic Cable Manufacturing	Y
335991	Carbon and Graphite Product Manufacturing	Y
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	Y
481111	Scheduled Passenger Air Transportation	Y
481112	Scheduled Freight Air Transportation	Y
481211	Nonscheduled Chartered Passenger Air Transportation	Y
481212	Nonscheduled Chartered Freight Air Transportation	Y
481219	Other Nonscheduled Air Transportation	Y
488111	Air Traffic Control	Y
488119	Other Airport Operations	Y
488190	Other Support Activities for Air Transportation	Y
611512	Flight Training	N

Sources: Aerospace Futures Alliance, 2018; Community Attributes, 2019.

## Exhibit 16. Transportation & Logistics Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
<b>Freight Forwarding</b>		
541614	Process, Physical Distribution, and Logistics Consulting Services	N
<b>Intermodal &amp; Transloading</b>		
484110	General Freight Trucking, Local	Y
484121	General Freight Trucking, Long-Distance, Truckload	Y
484122	General Freight Trucking, Long-Distance, Less Than Truckload	Y
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	Y
4884	Support Activities for Road Transportation	Y
488999	All Other Support Activities for Transportation	Y
<b>Local Transportation Services</b>		
492110	Couriers and Express Delivery Services	Y
484210	Used Household and Office Goods Moving	Y
484220	Specialized Freight (except Used Goods) Trucking, Local	Y
491	Postal Service	Y
492210	Local Messengers and Local Delivery	Y
562111	Solid Waste Collection	Y
<b>Passenger Car Rental</b>		
532111	Passenger Car Rental	N
<b>Passenger Transportation</b>		
485	Transit and Ground Passenger Transportation	Y
621910	Ambulance Services	Y
<b>Truck Leasing</b>		
532120	Truck, Utility Trailer, and RV (Recreational Vehicle) Rental and Leasing	Y
<b>Warehousing and Storage</b>		
488991	Packing and Crating	Y
493110	General Warehousing and Storage	Y
493130	Farm Product Warehousing and Storage	Y
493190	Other Warehousing and Storage	Y
531130	Lessors of Miniwarehouses and Self-Storage Units	Y

Sources: Highline College, 2018; Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

## Exhibit 17. ICT Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
<b>Communications Equipment and Services</b>		
515210	Cable and Other Subscription Programming	Y
<b>ICT Business Services</b>		
541511	Custom Computer Programming Services	N
541512	Computer Systems Design Services	N
541513	Computer Facilities Management Services	N
541519	Other Computer Related Services	N

**Exhibit 17 cont. ICT Industry NAICS Definition**

<b>NAICS</b>	<b>Description</b>	<b>Included in 2017 study as industrial</b>
<b>ICT Business Services</b>		
561499	All Other Business Support Services	N
611420	Computer Training	N
811211	Consumer Electronics Repair and Maintenance	N
811212	Computer and Office Machine Repair and Maintenance	N
811213	Communication Equipment Repair and Maintenance	N
<b>Internet Services &amp; Publishing</b>		
518	Data Processing, Hosting, and Related Services	N
519130	Internet Publishing and Broadcasting and Web Search Portals	N
<b>Manufacturing</b>		
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing	Y
333242	Semiconductor Machinery Manufacturing	Y
333316	Photographic and Photocopying Equipment Manufacturing	Y
333295	Semiconductor machinery manufacturing	Y
3341	Computer and Peripheral Equipment Manufacturing	Y
3342	Communications Equipment Manufacturing	Y
3343	Audio and Video Equipment Manufacturing	Y
334412	Bare Printed Circuit Board Manufacturing	Y
334413	Semiconductor and Related Device Manufacturing	Y
334414	Electronic Capacitor Manufacturing	Y
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	Y
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	Y
334514	Totalizing Fluid Meter and Counting Device Manufacturing	Y
334516	Analytical Laboratory Instrument Manufacturing	Y
334517	Irradiation Apparatus Manufacturing	Y
334613	Blank Magnetic and Optical Recording Media Manufacturing	Y
335912	Primary Battery Manufacturing	Y
<b>Software</b>		
511210	Software Publishers	N
<b>Telecommunications Services</b>		
517	Telecommunications	Y

*Sources: Washington Technology Industry Association, February 2015; Community Attributes, 2019.*

**Exhibit 18. Other Manufacturing Industry NAICS Definition**

NAICS	Description	Included in 2017 study as industrial
<b>Metalworking, Automotive &amp; Machinery Manufacturing</b>		
331	Primary Metal Manufacturing	Y
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	Y
3339	Other General Purpose Machinery Manufacturing	Y
3361	Motor Vehicle Manufacturing	Y
3362	Motor Vehicle Body and Trailer Manufacturing	Y
3363	Motor Vehicle Parts Manufacturing	Y
3365	Railroad Rolling Stock Manufacturing	Y
327910	Abrasive Product Manufacturing	Y
332111	Iron and Steel Forging	Y
332112	Nonferrous Forging	Y
332114	Custom Roll Forming	Y
332117	Powder Metallurgy Part Manufacturing	Y
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)	Y
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing	Y
332216	Saw Blade and Handtool Manufacturing	Y
332311	Prefabricated Metal Building and Component Manufacturing	Y
332312	Fabricated Structural Metal Manufacturing	Y
332313	Plate Work Manufacturing	Y
332321	Metal Window and Door Manufacturing	Y
332323	Ornamental and Architectural Metal Work Manufacturing	Y
332431	Metal Can Manufacturing	Y
332439	Other Metal Container Manufacturing	Y
332510	Hardware Manufacturing	Y
332613	Spring Manufacturing	Y
332618	Other Fabricated Wire Product Manufacturing	Y
332721	Precision Turned Product Manufacturing	Y
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing	Y
332811	Metal Heat Treating	Y
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	Y
332911	Industrial Valve Manufacturing	Y
332912	Fluid Power Valve and Hose Fitting Manufacturing	Y
332919	Other Metal Valve and Pipe Fitting Manufacturing	Y
332991	Ball and Roller Bearing Manufacturing	Y
332992	Small Arms Ammunition Manufacturing	Y
332993	Ammunition (except Small Arms) Manufacturing	Y
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing	Y
333111	Farm Machinery and Equipment Manufacturing	Y
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing	Y
333120	Construction Machinery Manufacturing	Y
333131	Mining Machinery and Equipment Manufacturing	Y

**Exhibit 18 cont. Other Manufacturing Industry NAICS Definition**

<b>NAICS</b>	<b>Description</b>	<b>Included in 2017 study as industrial</b>
<b>Metalworking, Automotive &amp; Machinery Manufacturing</b>		
333241	Food Product Machinery Manufacturing	Y
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing	Y
333244	Printing Machinery and Equipment Manufacturing	Y
333249	Other Industrial Machinery Manufacturing	Y
333318	Other Commercial and Service Industry Machinery Manufacturing	Y
333511	Industrial Mold Manufacturing	Y
333515	Cutting Tool and Machine Tool Accessory Manufacturing	Y
333519	Rolling Mill and Other Metalworking Machinery Manufacturing	Y
335220	Major Household Appliance Manufacturing	Y
335221	Household Cooking Appliance Manufacturing	Y
335222	Household Refrigerator and Home Freezer Manufacturing	Y
335224	Household Laundry Equipment Manufacturing	Y
335228	Other Major Household Appliance Manufacturing	Y
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	Y
336999	All Other Transportation Equipment Manufacturing	Y
339991	Gasket, Packing, and Sealing Device Manufacturing	Y
339995	Burial Casket Manufacturing	Y
<b>Wood, Furniture &amp; Related Products</b>		
321	Wood Product Manufacturing	Y
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	Y
3379	Other Furniture Related Product Manufacturing	Y
337211	Wood Office Furniture Manufacturing	Y
337214	Office Furniture (except Wood) Manufacturing	Y
337215	Showcase, Partition, Shelving, and Locker Manufacturing	Y
<b>Paper &amp; Packaging, Printing &amp; Publishing Services</b>		
322	Paper Manufacturing	Y
323	Printing and Related Support Activities	Y
325910	Printing Ink Manufacturing	Y
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	Y
511110	Newspaper Publishers	Y
511120	Periodical Publishers	Y
511130	Book Publishers	Y
511140	Directory and Mailing List Publishers	Y
511191	Greeting Card Publishers	Y
511199	All Other Publishers	Y
519110	News Syndicates	N
519120	Libraries and Archives	N
519190	All Other Information Services	N
<b>Medical &amp; Consumer Product Manufacturing</b>		
3391	Medical Equipment and Supplies Manufacturing	Y
333314	Optical Instrument and Lens Manufacturing	Y
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	Y

**Exhibit 18 cont. Other Manufacturing Industry NAICS Definition**

<b>NAICS</b>	<b>Description</b>	<b>Included in 2017 study as industrial</b>
<b>Medical &amp; Consumer Product Manufacturing</b>		
335110	Electric Lamp Bulb and Part Manufacturing	Y
335121	Residential Electric Lighting Fixture Manufacturing	Y
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	Y
335129	Other Lighting Equipment Manufacturing	Y
335210	Small Electrical Appliance Manufacturing	Y
335312	Motor and Generator Manufacturing	Y
335313	Switchgear and Switchboard Apparatus Manufacturing	Y
335911	Storage Battery Manufacturing	Y
335929	Other Communication and Energy Wire Manufacturing	Y
335931	Current-Carrying Wiring Device Manufacturing	Y
335932	Noncurrent-Carrying Wiring Device Manufacturing	Y
336991	Motorcycle, Bicycle, and Parts Manufacturing	Y
339910	Jewelry and Silverware Manufacturing	Y
339920	Sporting and Athletic Goods Manufacturing	Y
339930	Doll, Toy, and Game Manufacturing	Y
339940	Office Supplies (except Paper) Manufacturing	Y
339950	Sign Manufacturing	Y
339992	Musical Instrument Manufacturing	Y
339993	Fastener, Button, Needle, and Pin Manufacturing	Y
339999	All Other Miscellaneous Manufacturing	Y
<b>Plastics</b>		
3261	Plastics Product Manufacturing	Y
339994	Broom, Brush, and Mop Manufacturing	Y
<b>Chemical Manufacturing &amp; Biopharmaceuticals</b>		
324191	Petroleum Lubricating Oil and Grease Manufacturing	Y
325110	Petrochemical Manufacturing	Y
325120	Industrial Gas Manufacturing	Y
325130	Synthetic Dye and Pigment Manufacturing	Y
325180	Other Basic Inorganic Chemical Manufacturing	Y
325193	Ethyl Alcohol Manufacturing	Y
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	Y
325199	All Other Basic Organic Chemical Manufacturing	Y
325212	Synthetic Rubber Manufacturing	Y
325311	Nitrogenous Fertilizer Manufacturing	Y
325312	Phosphatic Fertilizer Manufacturing	Y
325314	Fertilizer (Mixing Only) Manufacturing	Y
325320	Pesticide and Other Agricultural Chemical Manufacturing	Y
325411	Medicinal and Botanical Manufacturing	Y
325412	Pharmaceutical Preparation Manufacturing	Y
325413	In-Vitro Diagnostic Substance Manufacturing	Y
325414	Biological Product (except Diagnostic) Manufacturing	Y
325510	Paint and Coating Manufacturing	Y



**Exhibit 18 cont. Other Manufacturing Industry NAICS Definition**

<b>NAICS</b>	<b>Description</b>	<b>Included in 2017 study as industrial</b>
<b>Chemical Manufacturing &amp; Biopharmaceuticals</b>		
325520	Adhesive Manufacturing	Y
325611	Soap and Other Detergent Manufacturing	Y
325612	Polish and Other Sanitation Good Manufacturing	Y
325613	Surface Active Agent Manufacturing	Y
325620	Toilet Preparation Manufacturing	Y
325920	Explosives Manufacturing	Y
325991	Custom Compounding of Purchased Resins	Y
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	Y
<b>Textile, Apparel &amp; Leather Manufacturing</b>		
313	Textile MillsT	Y
314	Textile Product MillsT	Y
315	Apparel ManufacturingT	Y
316	Leather and Allied Product Manufacturing	Y
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	Y
<b>Oil and Gas Production and Transportation</b>		
211	Oil and Gas ExtractionT	N
486	Pipeline Transportation	Y
213111	Drilling Oil and Gas Wells	N
213112	Support Activities for Oil and Gas Operations	N
324110	Petroleum Refineries	Y
324199	All Other Petroleum and Coal Products Manufacturing	Y
333132	Oil and Gas Field Machinery and Equipment Manufacturing	Y
<b>Vulcanized Materials Manufacturing</b>		
3262	Rubber Product Manufacturing	Y
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing	Y
327120	Clay Building Material and Refractories Manufacturing	Y
327211	Flat Glass Manufacturing	Y
327212	Other Pressed and Blown Glass and Glassware Manufacturing	Y
327215	Glass Product Manufacturing Made of Purchased Glass	Y
327992	Ground or Treated Mineral and Earth Manufacturing	Y

*Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.*

## Exhibit 19. Distribution & E-commerce Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	Y
4232	Furniture and Home Furnishing Merchant Wholesalers	Y
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	Y
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	Y
4236	Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	Y
423710	Hardware Merchant Wholesalers	Y
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	Y
4239	Miscellaneous Durable Goods Merchant Wholesalers	Y
4241	Paper and Paper Product Merchant Wholesalers	Y
4242	Drugs and Druggists' Sundries Merchant Wholesalers	Y
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	Y
424440	Poultry and Poultry Product Merchant Wholesalers	Y
424470	Meat and Meat Product Merchant Wholesalers	Y
424480	Fresh Fruit and Vegetable Merchant Wholesalers	Y
424520	Livestock Merchant Wholesalers	Y
424590	Other Farm Product Raw Material Merchant Wholesalers	Y
4246	Chemical and Allied Products Merchant Wholesalers	Y
4247	Petroleum and Petroleum Products Merchant Wholesalers	Y
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	Y
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	Y
425	Wholesale Electronic Markets and Agents and Brokers	Y
4541	Electronic Shopping and Mail-Order Houses	N
532411	Commercial Air, Rail, and Water Transportation Equipment Rental and Leasing	Y
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing	Y
532420	Office Machinery and Equipment Rental and Leasing	Y
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	Y
561910	Packaging and Labeling Services	Y

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

## Exhibit 20. Construction & Utilities Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
111	Crop Production	N
113	Forestry and Logging	N
115	Support Activities for Agriculture and Forestry	N
212	Mining (except Oil and Gas)T	N
236	Construction of Buildings	Y
237	Heavy and Civil Engineering Construction	Y
238	Specialty Trade Contractors	Y
1121	Cattle Ranching and Farming	N
1122	Hog and Pig Farming	N
1123	Poultry and Egg Production	N
1124	Sheep and Goat Farming	N
1129	Other Animal Production	N
2211	Electric Power Generation, Transmission and Distribution	Y
2212	Natural Gas Distribution	Y
2213	Water, Sewage and Other Systems	Y
112519	Other Aquaculture	N
114119	Other Marine Fishing	Y
213113	Support Activities for Coal Mining	N
213114	Support Activities for Metal Mining	N
213115	Support Activities for Nonmetallic Minerals (except Fuels) Mining	N
324121	Asphalt Paving Mixture and Block Manufacturing	Y
324122	Asphalt Shingle and Coating Materials Manufacturing	Y
327310	Cement Manufacturing	Y
327320	Ready-Mix Concrete Manufacturing	Y
327331	Concrete Block and Brick Manufacturing	Y
327332	Concrete Pipe Manufacturing	Y
327390	Other Concrete Product Manufacturing	Y
327410	Lime Manufacturing	Y
327420	Gypsum Product Manufacturing	Y
327991	Cut Stone and Stone Product Manufacturing	Y
327993	Mineral Wool Manufacturing	Y
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	Y
332322	Sheet Metal Work Manufacturing	Y
332410	Power Boiler and Heat Exchanger Manufacturing	Y
332420	Metal Tank (Heavy Gauge) Manufacturing	Y
332913	Plumbing Fixture Fitting and Trim Manufacturing	Y
332996	Fabricated Pipe and Pipe Fitting Manufacturing	Y
337212	Custom Architectural Woodwork and Millwork Manufacturing	Y
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	Y
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	Y
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	Y
423390	Other Construction Material Merchant Wholesalers	Y
423720		
	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	Y
423730		
	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	Y

## Exhibit 20 cont. Construction & Utilities Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
423740	Refrigeration Equipment and Supplies Merchant Wholesalers	Y
444110	Home Centers	N
444120	Paint and Wallpaper Stores	N
444190	Other Building Material Dealers	N
562991	Septic Tank and Related Services	Y

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

## Exhibit 21. Food & Beverage Production Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
3111	Animal Food Manufacturing	Y
3112	Grain and Oilseed Milling	Y
3113	Sugar and Confectionery Product Manufacturing	Y
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	Y
3115	Dairy Product Manufacturing	Y
3116	Animal Slaughtering and Processing	Y
3118	Bakeries and Tortilla Manufacturing	Y
3119	Other Food Manufacturing	Y
312	Beverage and Tobacco Product Manufacturing	Y
327213	Glass Container Manufacturing	Y
424510	Grain and Field Bean Merchant Wholesalers	Y
424410	General Line Grocery Merchant Wholesalers	Y
424420	Packaged Frozen Food Merchant Wholesalers	Y
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers	Y
424450	Confectionery Merchant Wholesalers	Y
424490	Other Grocery and Related Products Merchant Wholesalers	Y
424810	Beer and Ale Merchant Wholesalers	Y
445110	Supermarkets and Other Grocery (except Convenience) Stores	N
445120	Convenience Stores	N
445210	Meat Markets	N
445230	Fruit and Vegetable Markets	N
445291	Baked Goods Stores	N
445292	Confectionery and Nut Stores	N
445299	All Other Specialty Food Stores	N
446191	Food (Health) Supplement Stores	N
445310	Beer, Wine, and Liquor Stores	N
453991	Tobacco Stores	N
454210	Vending Machine Operators	Y
454390	Other Direct Selling Establishments	N
722330	Mobile Food Services	Y

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

## Exhibit 22. Hospitality & Tourism Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
721	Accommodation	N
7224	Drinking Places (Alcoholic Beverages)	N
7225	Restaurants and Other Eating Places	N
114210	Hunting and Trapping	N
453220	Gift, Novelty, and Souvenir Stores	N
453920	Art Dealers	N
487110	Scenic and Sightseeing Transportation, Land	Y
487990	Scenic and Sightseeing Transportation, Other	Y
532292	Recreational Goods Rental	N
561510	Travel Agencies	N
561520	Tour Operators	N
561591	Convention and Visitors Bureaus	N
561599	All Other Travel Arrangement and Reservation Services	N
611620	Sports and Recreation Instruction	N
711211	Sports Teams and Clubs	N
711212	Racetracks	N
711219	Other Spectator Sports	N
712110	Museums	N
712120	Historical Sites	N
712130	Zoos and Botanical Gardens	N
712190	Nature Parks and Other Similar Institutions	N
713110	Amusement and Theme Parks	N
713120	Amusement Arcades	N
713210	Casinos (except Casino Hotels)	N
713290	Other Gambling Industries	N
713910	Golf Courses and Country Clubs	N
713920	Skiing Facilities	N
713940	Fitness and Recreational Sports Centers	N
713950	Bowling Centers	N
713990	All Other Amusement and Recreation Industries	N
722310	Food Service Contractors	N
722320	Caterers	Y

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

**Exhibit 23. All Other Education Industry NAICS Definition**

NAICS	Description	Included in 2017 study as industrial
6111	Elementary and Secondary Schools	N
6112	Junior Colleges	N
6113	Colleges, Universities, and Professional Schools	N
6117	Educational Support Services	N
611410	Business and Secretarial Schools	N
611430	Professional and Management Development Training	N
611511	Cosmetology and Barber Schools	N
611513	Apprenticeship Training	N
611519	Other Technical and Trade Schools	N
611610	Fine Arts Schools	N
611630	Language Schools	N
611691	Exam Preparation and Tutoring	N
611692	Automobile Driving Schools	N
611699	All Other Miscellaneous Schools and Instruction	N

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

**Exhibit 24. All Other Retail Industry NAICS Definition**

NAICS	Description	Included in 2017 study as industrial
442	Furniture and Home Furnishings Stores	N
443	Electronics and Appliance Stores	N
447	Gasoline Stations	N
448	Clothing and Clothing Accessories Stores	N
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	N
452	General Merchandise Stores	N
4411	Automobile Dealers	N
4413	Automotive Parts, Accessories, and Tire Stores	N
4442	Lawn and Garden Equipment and Supplies Stores	N
4531	Florists	N
4533	Used Merchandise Stores	N
441210	Recreational Vehicle Dealers	N
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	N
444130	Hardware Stores	N
446110	Pharmacies and Drug Stores	N
446120	Cosmetics, Beauty Supplies, and Perfume Stores	N
446130	Optical Goods Stores	N
446199	All Other Health and Personal Care Stores	N
453210	Office Supplies and Stationery Stores	N
453910	Pet and Pet Supplies Stores	N
453930	Manufactured (Mobile) Home Dealers	N
453998	All Other Miscellaneous Store Retailers (except Tobacco Stores)	N
454310	Fuel Dealers	Y

Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.

## Exhibit 25. All Other Services Industry NAICS Definition

NAICS	Description	Included in 2017 study as industrial
52	Finance and Insurance	N
55	Management of Companies and Enterprises	N
512	Motion Picture and Sound Recording Industries	N
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	N
622	Hospitals	N
623	Nursing and Residential Care Facilities	N
624	Social Assistance	N
812	Personal and Laundry Services	N
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	N
814	Private Households	N
5151	Radio and Television Broadcasting	Y
5312	Offices of Real Estate Agents and Brokers	N
5313	Activities Related to Real Estate	N
5323	General Rental Centers	N
5411	Legal Services	N
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	N
5413	Architectural, Engineering, and Related Services	N
5414	Specialized Design Services	N
5417	Scientific Research and Development Services	N
5418	Advertising, Public Relations, and Related Services	N
5419	Other Professional, Scientific, and Technical Services	N
5611	Office Administrative Services	N
5612	Facilities Support Services	N
5613	Employment Services	N
5616	Investigation and Security Services	N
5617	Services to Buildings and Dwellings	Y
5622	Waste Treatment and Disposal	Y
6211	Offices of Physicians	N
6212	Offices of Dentists	N
6213	Offices of Other Health Practitioners	N
6214	Outpatient Care Centers	N
6215	Medical and Diagnostic Laboratories	N
6216	Home Health Care Services	N
7111	Performing Arts Companies	N
7113	Promoters of Performing Arts, Sports, and Similar Events	N
7114	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	N
7115	Independent Artists, Writers, and Performers	N
8111	Automotive Repair and Maintenance	N
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	Y
8114	Personal and Household Goods Repair and Maintenance	N
531110	Lessors of Residential Buildings and Dwellings	N
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	N
531190	Lessors of Other Real Estate Property	N

**Exhibit 25 cont. All Other Services Industry NAICS Definition**

<b>NAICS</b>	<b>Description</b>	<b>Included in 2017 study as industrial</b>
532112	Passenger Car Leasing	N
532210	Consumer Electronics and Appliances Rental	N
532220	Formal wear and costume rental	N
532230	Video tape and disc rental	N
532291	Home health equipment rental	N
532299	All other consumer goods rental	N
541611	Administrative Management and General Management Consulting Services	N
541612	Human Resources Consulting Services	N
541613	Marketing Consulting Services	N
541618	Other Management Consulting Services	N
541620	Environmental Consulting Services	N
541690	Other Scientific and Technical Consulting Services	N
561410	Document Preparation Services	N
561421	Telephone Answering Services	N
561422	Telemarketing Bureaus and Other Contact Centers	N
561431	Private Mail Centers	N
561439	Other Business Service Centers (including Copy Shops)	N
561440	Collection Agencies	N
561450	Credit Bureaus	N
561491	Repossession Services	N
561492	Court Reporting and Stenotype Services	N
561920	Convention and Trade Show Organizers	N
561990	All Other Support Services	N
562112	Hazardous Waste Collection	Y
562119	Other Waste Collection	Y
562910	Remediation Services	Y
562920	Materials Recovery Facilities	Y
562998	All Other Miscellaneous Waste Management Services	Y
621991	Blood and Organ Banks	Y
621999	All Other Miscellaneous Ambulatory Health Care Services	N
811219	Other Electronic and Precision Equipment Repair and Maintenance	N

*Sources: Harvard Business School and U.S. Economic Development Administration, 2019; Community Attributes, 2019.*