

2025 | CITY OF BEND INDUSTRY CLUSTER & LABOR ANALYSIS

ACKNOWLEDGEMENTS

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Executive Summary

The City of Bend conducted an industry cluster analysis to identify correlated firms that possess a competitive regional advantage. The analysis used pre-established cluster definitions from the U.S. Cluster Mapping Project and further refined by anchor industries within each cluster. The U.S. Cluster Mapping Project separates clusters into local and trade industries. A local industry cluster produces goods and services that primarily meet the needs of the people within a region or area; while traded industry cluster's products and services are primarily exported out of a regional or area. This analysis focused solely on traded sector clusters based within the 2024 City of Bend Target Sector Analysis that bring new wealth into our local economy.

Data Sources

This analysis utilized the economic modeling software Lightcast and Implan, and data from the Oregon Employment Department. Lightcast and Implan aggregates data from the Oregon Employment Department, and the United States Bureau of Economic Analysis.

Methodology

Candidate traded clusters were identified utilizing baseline screening criteria of location quotient analysis and differential shift (competitive advantages, and number of establishments within a cluster). The candidate clusters were then placed in an industry concentration and competitive diagram focused on growing base, emerging, mature and transforming firms. Once the initial candidate clusters were identified, a strength analysis was conducted utilizing basic employment, projected employment, and wage comparison-growth-competitiveness factors.

Findings

Bend was found to have six growing base industry clusters:

- Information Technology
- Forestry and Wood Products
- Biotech
- Outdoor Products
- Furniture
- Tourism

In addition, to a strong competitive growing base segment, three industry clusters were identified as an *emerging cluster*:

- Creatives
- Business Services
- Knowledge

One key industry was identified as a mature cluster:

- Food and Beverage Manufacturing

These identified traded industrial clusters represent 1% of total employment in the City of Bend and generate 24% of our local gross domestic product at \$2.5 billion.

Prioritized Industries

The recommended priority industry clusters for business retention, expansion and recruitment for the City of Bend and its economic development partners are:

- 1. High Tech**
 - a. Information Technology
 - b. Biotech (Research and Development)
- 2. Outdoor Lifestyle, Culture, and Products**
 - a. Outdoor Tourism
 - b. Outdoor Products
 - c. Creatives
- 3. Craft Beverages**
- 4. Forestry and Wood Products**
 - a. Forestry
 - b. Wood Products
 - c. Wood Furniture

These clusters possess high regional competitiveness, opportunities for in-region purchases, have the largest employment shares, and are vital to Bend's economy accounting for 11% of the area's gross domestic product.

Overview

What is a Cluster?

The generally accepted view of *industry cluster theory* holds that establishments belonging to an identified network (“cluster”) enjoy competitive economic advantages. Stemming from improved productivity or reduced costs because the cluster members access the same resources of specialized suppliers, labor, firm industry information, and infrastructure – all of which is facilitated by their geographical proximity. The terms *industry cluster*, *business cluster*, *competitive cluster* or *cluster* are often used interchangeably as there is no official guideline or standardized approach to define or identify an industry cluster. The formation and performance of clusters are dependent not only on the individual performance of companies but also the business environment set by the anchor institutions and government regulatory agencies.

Traded Clusters versus Local Clusters

This analysis uses established¹ cluster definitions by the U.S. Cluster Mapping Project, an initiative led by the Institute for Strategy and Competitiveness at the Harvard University Business School and supported by the United States Department of Commerce Economic Development Administration.

The U.S. Cluster Mapping Project separates all industries into two types: local industries and traded industries. A local industry firm produces goods or services that primarily meet the needs of the people within the area. A traded industry firm is typically concentrated in a specific area that produces goods and/or services that are exported outside the local trade area.

This report focuses solely on traded industries organized by traded cluster definitions as provided by the U.S. Cluster Mapping Project. These industries typically command higher wages and rates of innovation than do local industries and are generally considered “engines of the local economy.”

The initial base candidates of traded clusters in Bend represent 18% of total employment, slightly higher than the national average of 16%.

Region Defined

The identified area presented in this analysis is the municipal limits of Bend and United States Postal Zip Codes 97701, 97702, and 97703. This area will be commonly referred to as Bend.

This analysis utilizes the business and occupational data from the Oregon Employment Department and the economic modeling software Lightcast to acquire industry, employment, and occupational data, as well as economic input-output modeling. Lightcast combines employment and establishment data from the Quarterly Census of Employment and Wages (QCEW) produced by the Oregon Employment Department with data from the Regional Economic Information System (REIS) published by the United States Bureau of Economic

¹ With slight modifications by the City of Bend to accurately reflected the area’s local economy

Analysis (BEA) and augmented with County Business Patterns (CMP) and Non- employer Statistics (NES) published by the United States Census Bureau.

The number of industry cluster establishments, employees and average annual wage are provided by the Oregon Employment Department based on the most recent data from the year 2023 and 2019.

Criteria Overview

The initial steps of identifying candidate clusters focuses on three initial base measures: location quotient, differential shift, and critical concentration. These criteria measurements are the most commonly used to identify the presence of industrial clusters within selected areas. Once candidate clusters are identified using initial base measurements, clusters are then analyzed on their strength and importance to the local economy. Strength criteria include: basic employment, projected employment, wage comparison, and wage growth and competitiveness.

SCREENING CRITERIA

Location Quotient

An area will specialize in industries in which it is more competitive – yielding concentrations of employment in those sectors. The location quotient theory holds that if an industry employs more workers than the national average, the industry is producing more goods and services that the local region can absorb thus exporting the excess product/service out of the region. The location quotient is a formula used to identify the concentration of an industry sector using the ratio share of employment in the identified local cluster compared to a larger area – typically the nation. The location quotient is a static measure, picturing the economy at only point in time. It does not refer to an industry that is growing or declining in importance to the local economy.

The location quotient is shown as a ratio between the percentages of employment in an industry locally to the percentage of employment in the same industry found in the larger comparative economy.

A location quotient (LQ) greater than one (1.0) indicates an industry that is more concentrated and specialized than the larger comparative region. An industry with a 1.0 LQ reflects an industry that has met the local economy's need for the product and service. An industry that has an LQ greater than one (1.0) has met the needs of the local economy and is subsequently exporting all or part of its product out of the local region effectively adding economic stimulus and greater growth potential to the regional economy.

The standard formula representing the location quotient is as follows:

$$LQ = \frac{\frac{e_i}{E_i}}{\frac{e}{E}}$$

e_i = local employment in the industry i

e = total local employment

E_i = national employment in industry i

E = total national employment

For this report, industry clusters with an LQ of 1.10 and greater will be considered true export clusters. Utilizing a higher LQ will assist in eliminating the variations that may exist with utilizing LQ 1.0 due to the unclear veracity of baseline assumptions for area productivity compared to the national average.

Differential Shift

Under certain conditions, if an industry is more competitive regionally than nationally, then its employment will likely grow faster than the industry's national rate. Economic growth in a local economy benefits or suffers from the changes in the overall regional, state, and national economies. Irrespective of which industry, the overall economy has a direct impact on local production of goods and services. Unlike the location quotient, differential shift measures the economy over a given time.

The differential shift or competitive advantage is the difference in the rate of growth or decline in a local industry relative to the rate of growth or decline in the same industry nationally. Local industries can have competitive advantages if those industries are declining less rapidly in nationally declining industries or growing faster than the nationally growing industries.

Differential Shift can be expressed as:

$$DS = (locCY_i/locBY_i) - (empCY_i/empBY_i)$$

$empCY_i$ = current year employment in industry i in the reference economy

$empBY_i$ = base year employment in industry i in the reference economy

$locCY_i$ = current year employment in industry i in the local economy

$locBY_i$ = base year employment in the industry i in the local economy

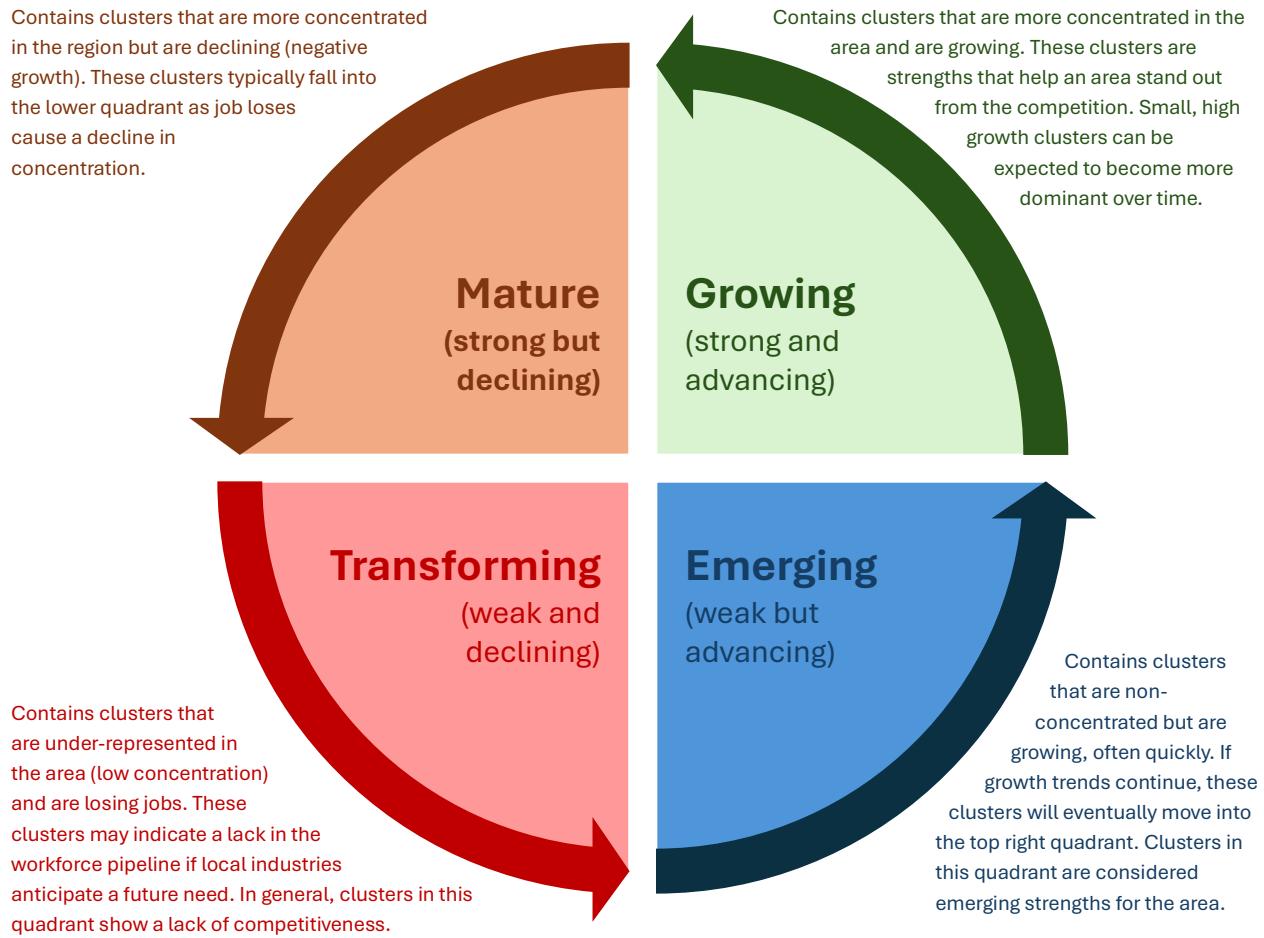
Taken together, an industry's location quotient and differential shift will place it in one of four categories, or quadrants, on a graph. Industries in the "growing base" quadrant demonstrate evidence of relatively strong employment concentration (LQ>1) and a growing local shift of employment (DS>0). Clusters located in this quadrant are the most likely candidates for targeted efforts of business attraction with potential efforts of expansion.

"Emerging" clusters have lower concentrations (LQ<1) and growing competitive advantage (DS>0) and may have the potential to move into the growing base quadrant with continued growth.

"Mature" quadrant clusters are regionally concentrated (LQ>1) and may have been competitive and specialized in the past but are losing employment at a greater rate than the national level (DS<0.) Establishments in these clusters may be relocating, downsizing, or closing.

“Transforming” clusters are both losing employment ($DS<0$) and have low employment concentrations ($LQ<1$). Mature and Transforming Clusters will not be considered as candidate clusters for this analysis.

Graph 1. Quadrant of Cluster Industry Concentration and Competitive Advantage



While employment concentrations (higher LQ's) and rates of employment change compared nationally indicate a strong presence of industry clusters, critical concentrations must be present in order for clusters to exist. Concentration of specific industries within a geographic area provides opportunities for collective advantages of advancing specific industry cluster success.

This advantage provides the ability to acquire information, sustain supporting infrastructure, and facilitate competitive collaboration. Determining concentrations, specific industry clusters must contain five or more establishments within a specific geography to be considered a cluster.

Summary of Screening Criteria for Candidate Clusters

- Location Quotient (LQ): Industry concentration within the identified area with an LQ greater than 1.15
- Competitive Advantage (DS): Cluster competitiveness as compared to the national level of a differential shift greater than 0%.
- Critical Concentration: Five establishments or more within the defined cluster.

CANDIDATE CLUSTER FINDINGS

The analysis initially observed 19 traded industry clusters that were present in Bend. Utilizing the *2024 City of Bend Target Sector Analysis*, several pairings of similar or congruent traded clusters were initiated. The clusters *Forestry and Wood Products* were combined to the *Forestry and Wood Products Cluster*; the clusters of *Music, Video Production, Performing Arts, and Marketing, Design, and Publishing* were combined into the *Creatives Cluster*; and the clusters *Recreational and Small Electric Goods* and *Trailers, Motor Homes, and Appliances* were grouped into the *Outdoor Products Cluster*. With these combinations, the analysis identified 14 of the top economic clusters based on their location quotients.

The 19 Preliminary Industry Clusters Included:

1. Aerospace
2. Business Services
3. Hospitality and Tourism
4. Knowledge
5. Information Technology and Analytical Instruments
6. Biotech
7. Biopharmaceutical
8. Food and Beverage Manufacturing
9. Forestry
10. Wood Products
11. Furniture
12. Music
13. Video Production
14. Performing Arts
15. Apparel
16. Marketing, Design, and Publishing
17. Recreational Goods and Small Appliances
18. Motor Homes, Trailers, and Appliances
19. Construction Services

Table 1 identifies the top economic clusters. This list illustrates the 11 traded clusters that are present. *Forestry and Wood Products Cluster* is the most concentrated cluster with an LQ of 4.01, followed by *Biotech* (2.14), *Information Technology* (2.12), and *Outdoor Products* (1.93). Table 2 identifies the clusters that did not make it through the initial screening.

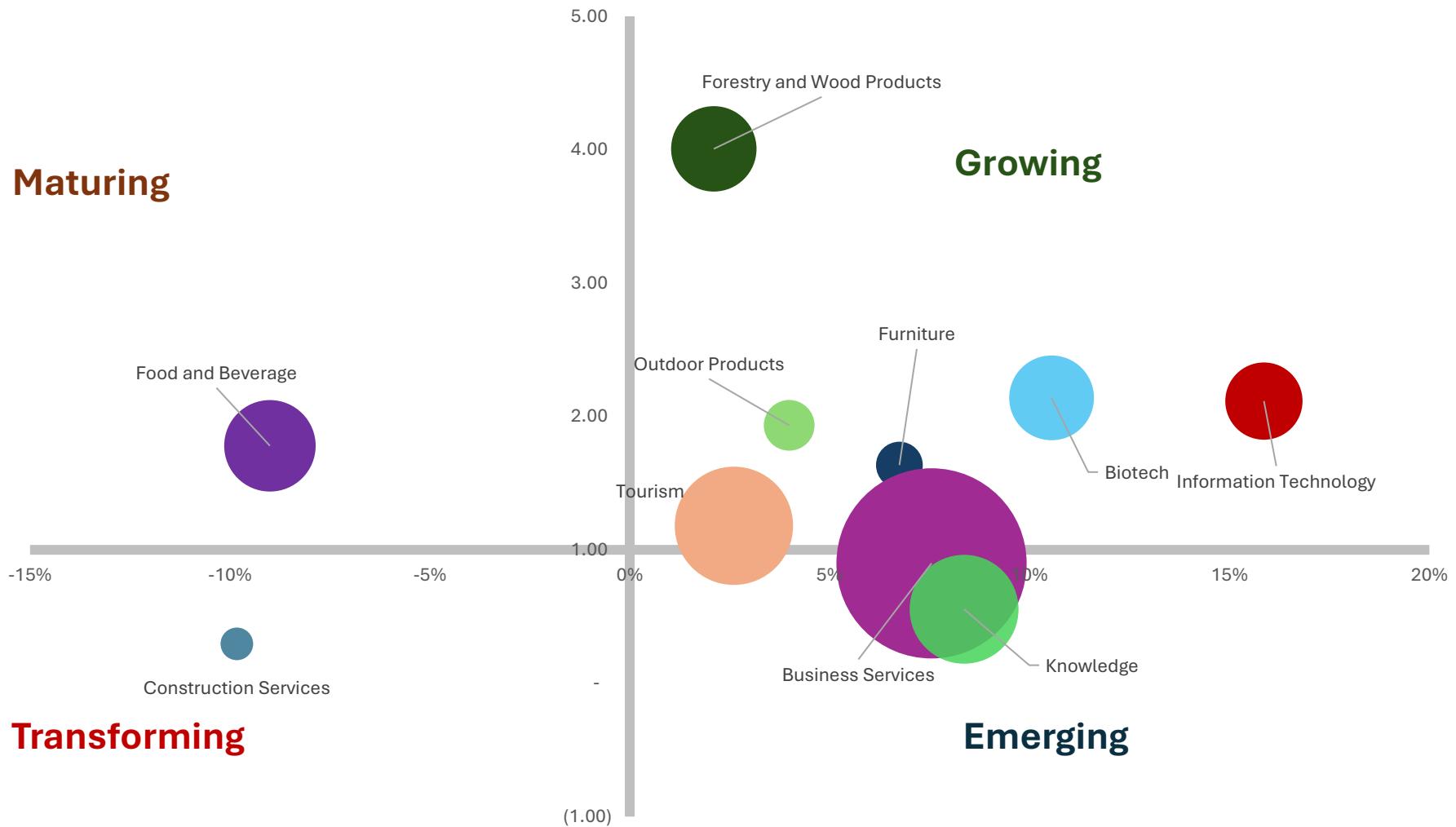
Graph 2 illustrates how each of the candidate clusters identified based on the initial screening criteria

Table 1. Economic Clusters Based on Location Quotients

Rank	Cluster	Location Quotient (LQ)	Cluster Employment, 2023	Number of Establishments, 2023	Differential Shift (DS)
1	Forestry and Wood Products	4.01	707	20	2%
2	Biotech	2.14	696	57	11%
3	Information Technology	2.12	1,218	184	16%
4	Outdoor Products	1.93	249	20	4%
5	Food and Beverage Manufacturing	1.78	811	49	-9%
6	Furniture	1.64	1,218	18	7%
7	Hospitality and Tourism	1.18	1,355	115	3%
8	Creatives	0.92	1,017	300	159%
9	Business Services	0.90	3,506	700	8%
10	Knowledge	0.55	1,149	65	8%
11	Construction Services	0.30	103	18	-10%

Source: Lightcast, Oregon Employment Department, City of Bend

Graph 2. Industry Concentration and Competitive Advantage (Refer to Graph 1 for Characteristics)



*Not pictured: Creatives (LQ 0.92; DS 159%).

Table 4. Cluster Ranking Based on Location Quotient and Differential Shift Quadrants

Rank	Cluster	Location Quotient (LQ)	Cluster Employment, 2023	Number of Establishments, 2023	Differential Shift (DS)
Growing/Base Clusters					
1	Forestry and Wood Products	4.01	707	20	2%
2	Biotech	2.14	696	57	11%
4	Information Technology	2.12	1,218	10	214%
3	Outdoor Products	1.93	249	20	4%
5	Furniture	1.64	212	18	7%
6	Hospitality and Tourism	1.18	1,355	115	3%
Emerging Clusters					
7	Creatives	0.92	1,017	300	159%
8	Business Services	0.90	3,506	700	8%
9	Knowledge	0.55	1,149	65	8%
Mature Clusters					
10	Food and Beverage Manufacturing	1.78	811	49	-9%
Transformation Clusters					
11	Construction Services	0.30	103	18	-10%

Identified Clusters of Bend, Oregon

This analysis has identified ten potential industry clusters in Bend with strong concentration (location quotient/LQ) and/or strong employment growth (differential shift/DS) with the required establishment concentrations. Many of these clusters are well known in the area, such as *Food and Beverage Manufacturing, Forestry and Wood Products, and Tourism*. Together these clusters employ 17% of the total workforce and pay an annual average salary ranging from \$43,000 to \$131,700. Most industries within these identified clusters export all or most of their products or services out of the region.

Table 5. Candidate Industry Cluster Summaries

1. Forestry and Wood Products
2. Biotech
3. Information Technology
4. Outdoor Products
5. Furniture
6. Tourism
7. Creatives
8. Business Services
9. Knowledge
10. Food and Beverage Manufacturing

STRENGTH OF CLUSTERS

Although Tables 4 and 5 identify the areas' most concentrated competitive clusters, they still don't reveal which clusters are vital to the local economy. For example, a small cluster with a

high location quotient may be an export-oriented cluster, but, relatively few jobs, is not vital to the region's economy. Likewise, a large cluster with a declining quotient of location might have significant negative consequences for the regional economy. An additional analysis combining cluster sizes and locations quotients, with basic employment, national wage comparisons and wage growth, and projected employment will yield a more relevant picture of the regional economy.

Basic Employment

Basic employment references jobs and their related functions that are dedicated to producing goods or services for export outside the local community. Basic jobs are calculated by multiplying the number of jobs in a cluster by the portion of the location quotient that is above 1.00. This method captures a rather broad set of basic jobs because it uses the threshold of 1.0 instead of 1.10

$$le^{RY} - \frac{leLQ^{RY}}{1}$$

le^{RY} = Industry employment in reference year

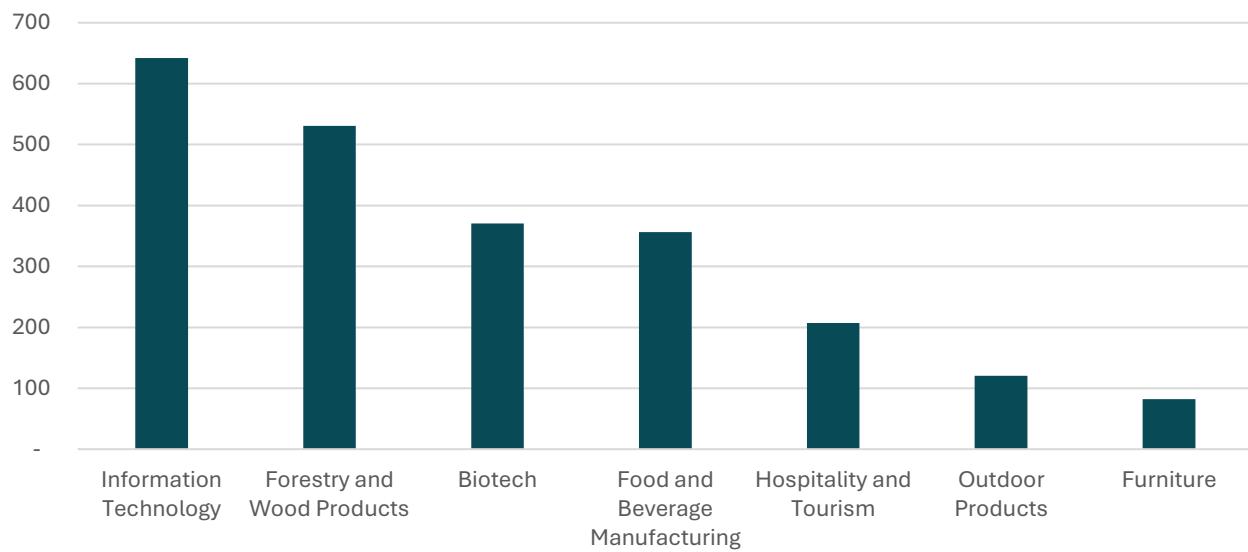
$leLQ^{RY}$ = Location quotient of industry in referenced year

Table 6. Candidate Clusters Ranked on Basic Jobs, 2023

Rank	Cluster	2023			2019			Absolute Change 2019-2023		Percent Change, 201-2023	
		Basic Jobs	Total Jobs	Location Quotient	Basic Jobs	Total Jobs	Location Quotient	Basic Jobs	Total Jobs	Basic Jobs	Total Jobs
1	Information Technology	642	1,218	2.12	570	926	2.60	72	292	13%	32%
2	Forestry and Wood Products	531	707	4.01	556	680	5.49	-26	27	-5%	4%
3	Biotech	371	696	2.14	111	295	1.60	260	401	235%	136%
4	Food and Beverage	357	811	1.78	511	806	2.73	-154	5	-30%	1%
5	Tourism	207	1,355	1.18	522	1,383	1.61	-315	-28	-60%	-2%
6	Outdoor and Recreation	120	249	1.93	142	230	2.60	-21	19	-15%	8%
7	Furniture	82	212	1.64	112	211	2.13	-30	1	-27%	0%

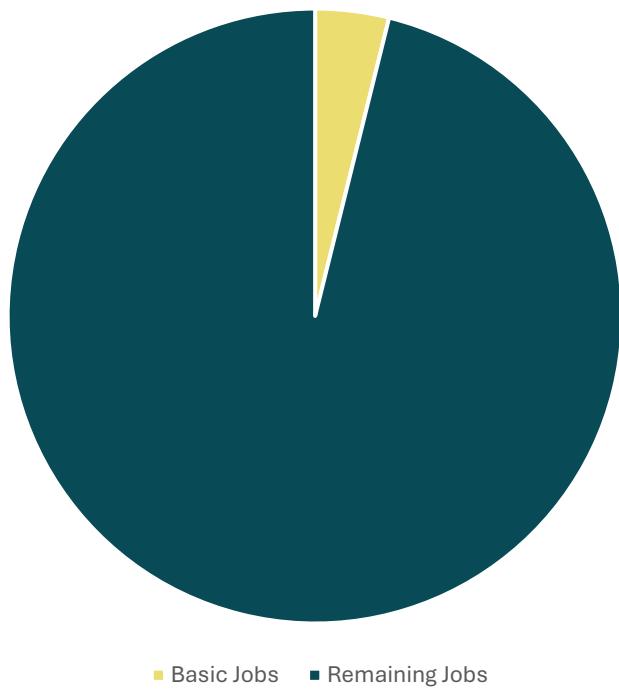
Source: Oregon Employment Department, City of Bend

Graph 3. Top Basic Jobs Cluster, 2023



Source: City of Bend

Graph 4. Top Basic Jobs Cluster



Source: City of Bend

Bend's identified candidate clusters basic job count account for only 4 percent of total employment with 2,310 jobs dedicated to export-oriented functions. *Information Technology* is

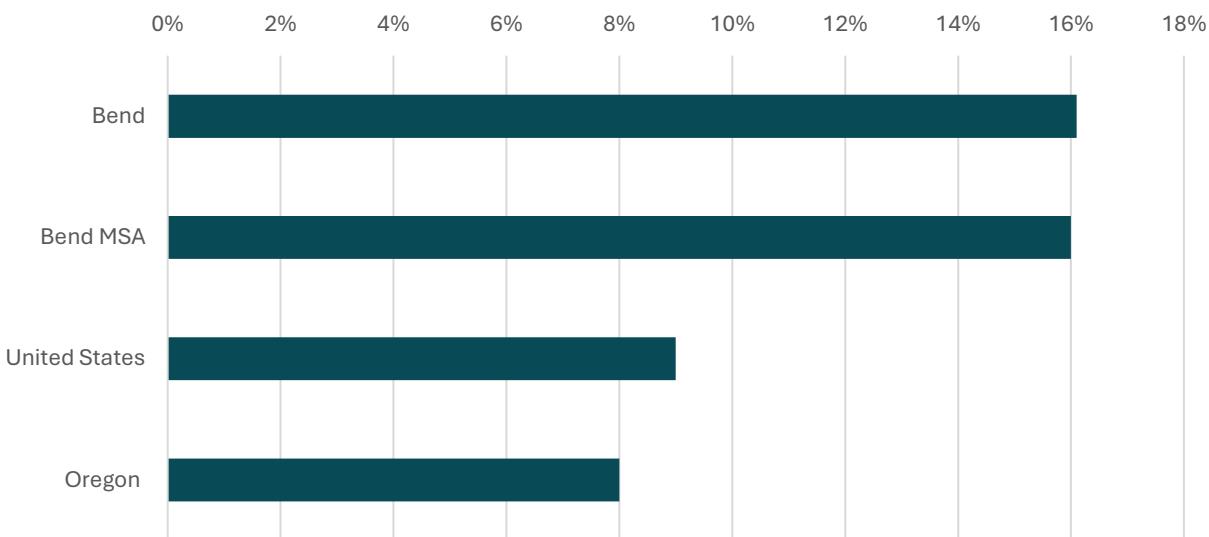
ranked number one with 642 basic jobs, followed by *Forestry and Wood Products* with 531 basic jobs, *Biotech* (371), Food and Beverage Manufacturing (357). Of the identified candidate clusters, *Creatives*, *Business Services*, and *Knowledge* do not provide any basic employment.

Projected Employment and Location Quotient

Location Quotient and comparative advantage provides an opportunity to look at current and comparative time growth for specific industry clusters within a given region. Understanding past, current, and future economic projections can assist communities with identifying opportunities or threats to the regional economy and allow a tailored approach to utilizing land-use and resources for long-term economic planning. Industry clusters that are present within the region that are projected to have long term employment growth are given priority in this analysis.

Total projected employment growth for the City of Bend is estimated to be a 16% increase from 59,648 to 69,192². This is a similar rate of growth of the Bend Metro MSA (16%), faster the State of Oregon (8%), and the United States (9%).

Graph 5. Total Projected Employment Growth, 2035



Source: Lightcast

Business Services is projected to have the largest numerical job growth with 1,262 new jobs by 2035, followed *Knowledge* with 345 new jobs and *Tourism* with 312 jobs. *Business Services* is projected to be the fastest growing cluster with 36% growth. *Forestry and Wood Products*, *Furniture and Outdoor Products* Clusters are projected to decline in overall employment.

² Lightcast

Table 7. Ranked Industry Clusters based on Projected Change in Total Jobs, 2035

Rank	Cluster	Bend			2023 Total Jobs	United States	
		2035 Total Jobs	Projected Change	Projected Job Gains		Projected Change	Projected Employment
1	Business Services	4,768	36%	1,262	3,506	14%	12,897,258
2	Knowledge	1,494	30%	345	1,149	9%	6,540,468
3	Tourism	1,667	23%	312	1,355	13%	3,755,947
4	Information Technology	1,303	7%	85	1,218	4%	1,052,255
5	Creatives	1,251	23%	234	1,017	13%	3,459,130
6	Food and Beverage	1,030	27%	219	811	17%	1,536,713
7	Biotech	856	23%	160	696	17%	1,102,521
8	Furniture	184	-13%	(28)	212	-8%	345,649
9	Outdoor and Recreation	179	-28%	(70)	249	1%	374,850
10	Forestry and Wood Products	495	-30%	(212)	707	1%	513,803

Source: Lightcast

Change in LQ

Information Technology will become more regionally competitive by 2035, with a differential shift of 44% and increasing its location quotient from 2.12 to 3.35. *Forestry and Wood Products* will remain a significant traded industry cluster but will become less competitive over the next decade. Biotech, Food and Beverage Manufacturing, and Tourism will continue to be significant traded industry clusters.

Table 8. Ranked Industry Cluster Based on Location Quotient 2035

Rank	Cluster	Projected LQ	Competitive Advantage
1	Information Technology	3.35	44%
2	Forestry and Wood Products	2.61	-31%
3	Biotech	2.10	6%
4	Food and Beverage Manufacturing	1.81	10%
5	Furniture	1.44	-5%
6	Outdoor Products	1.30	-29%
7	Hospitality and Tourism	1.20	10%

Wage Comparison

Specialized industries that have higher levels of productivity are likely to pay higher wages than their less competitive counterparts. In tandem, industries that are regionally and nationally competitive may show lower concentrations of employment but have higher wage earnings –

potentially reflecting employee's elevated skill set or additional access to capital that may increase productivity. Determining the threshold, the average wage of an identified industry within a region is compared with the average wages nationally. Since the overall wage of Bend, Oregon is 115% of the overall national average and local cost of living, this screening criteria is set at 120%.

Wage Growth and Competitiveness

Wage growth, competitiveness, and area livability are the final strength metrics in our wages analysis. Jobs that have industry wages and wage growth that exceeds the national average provide better opportunities for job retention and industry recruitment.

Table 9. Industry Clusters Ranked on National Wage Competitiveness

Rank	Cluster	Overall Wage Competitiveness	Wages, 2023	Wage Comparison, 2023	Wage Growth Competitiveness	% Change in Wages, Bend	USA Wages, 2023
1	Furniture	12%	\$55,601	85%	27%	27%	\$65,433
2	Business Services	9%	\$109,387	78%	31%	51%	\$140,116
3	Forestry and Wood Products	-8%	\$68,053	97%	-5%	20%	\$70,374
4	Outdoor and Recreation	-11%	\$57,614	68%	21%	37%	\$84,587
5	Creatives	-18%	\$82,191	68%	14%	33%	\$121,014
6	Information Technology	-28%	\$126,967	72%	0%	21%	\$177,574
7	Biotech	-32%	\$122,381	65%	3%	20%	\$188,422
8	Food and Beverage	-47%	\$54,986	69%	-16%	2%	\$79,806
9	Tourism	-52%	\$43,170	72%	-24%	2%	\$59,678
10	Knowledge	-50%	\$45,637	62%	-13%	7%	\$73,326

Table 9 displays the ten identified industry clusters ranked by wage competitiveness. Most industry clusters do not have wage competitiveness with the overall national industry. *Furniture* and *Business Services* have an overall wage competitiveness with the national industry cluster.

The average annual wage for Bend in 2023 was \$65,248, 37% percent increase from 2019. Nationally, the average wage was \$83,190, 20% more than 2019. All traded industry clusters had positive wage growth since 2019. Business Services had the highest wage growth of 51%, followed by Outdoor Products (37%), followed by Creatives (33%), and Furniture (27%).

Summary

Based on the initial screening criteria and the strength of clusters criteria, the following are the identified clusters for further refinement, identification, and economic and labor impact assessment.

1. Biotech
2. Information Technology
3. Forestry and Wood Products
4. Food and Beverage Manufacturing
5. Furniture
6. Outdoor Products
7. Tourism

The following definitions for identified industry clusters are provided: Delgado, M., M.E. Porter, and S. Stern (2014), “Defining Clusters of Related Industries.”

TABLE 10. Cluster Indicator Ranges and Quadrant Strength Values

Relative Employment Concentration		Relative Employment Growth	
LQ RANGE	LQ STRENGTH	DS RANGE	DS STRENGTH
<.25	LQ ---	<.50	DS ---
.25 - .50	LQ --	-20% - -50%	DS --
.51 - .75	LQ -	-20% - -5%	DS -
.76 - 1.10	LQ 1	-4% - 5%	DS 0
1.11 – 1.75	LQ +	6% - 10 %	DS +
1.76 – 3.00	LQ ++	11% - 25%	DS ++
>3.00	LQ +++	>26%	DS +++

Biotech

Table 11. Biotech Firm Break Down

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg.Wage/Year
541713	Research and Development in Nanotechnology	Emerging	LQ --- , DS +++	1	\$ 123,208
541714	Research and Development in Biotechnology (except Nanobiotechnology)	Mature	LQ ++ , DS --	237	\$ 133,380
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	Star	LQ ++ , DS ++	458	\$ 116,686
TOTAL				696	\$ 122,381

Source: Lightcast, City of Bend

Table 12. Biotech Labor Analysis

SOC	Description	Employed in Industry Group (2023)	Change (2019 - 2023)	% Change (2019 - 2023)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
19-1042	Medical Scientists, Except Epidemiologists	54	(12)	(18%)	7.5%	\$51.44	Doctoral or professional degree	None	None
19-4021	Biological Technicians	51	(5)	(9%)	6.7%	\$26.26	Bachelor's degree	None	None
11-9121	Natural Sciences Managers	47	19	72%	6.5%	\$62.87	Bachelor's degree	5 years or more	None
17-2061	Computer Hardware Engineers	39	39	50987%	6.0%	\$68.44	Bachelor's degree	None	None
15-1252	Software Developers	36	22	154%	4.2%	\$61.04	Bachelor's degree	None	None
19-1029	Biological Scientists, All Other	29	17	139%	3.6%	\$41.93	Bachelor's degree	None	None
11-1021	General and Operations Managers	25	6	33%	2.8%	\$43.51	Bachelor's degree	5 years or more	None
13-1082	Project Management Specialists	21	8	57%	2.7%	\$42.30	Bachelor's degree	None	None
19-4099	Life, Physical, and Social Science Technicians, All Other	17	9	107%	2.4%	\$21.31	Associate's degree	None	None
19-1021	Biochemists and Biophysicists	18	18	5238%	2.2%	\$44.25	Doctoral or professional degree	None	None
13-1199	Business Operations Specialists, All Other	16	9	146%	1.9%	\$30.68	Bachelor's degree	None	None
19-2031	Chemists	13	2	20%	1.7%	\$41.68	Bachelor's degree	None	None
19-2032	Materials Scientists	<10	8	581%	1.6%	\$40.59	Bachelor's degree	None	None
19-4012	Agricultural Technicians	13	(0)	(3%)	1.5%	\$18.52	Associate's degree	None	Moderate-term on-the-job training
17-2112	Industrial Engineers	11	7	185%	1.4%	\$44.25	Bachelor's degree	None	None
11-1011	Chief Executives	<10	2	108%	0.3%	\$50.79	Bachelor's degree	5 years or more	None
11-2021	Marketing Managers	<10	1	22%	0.8%	\$54.47	Bachelor's degree	5 years or more	None
11-2022	Sales Managers	<10	1	19%	0.4%	\$54.84	Bachelor's degree	Less than 5 years	None
11-2032	Public Relations Managers	<10	2	190%	0.4%	\$54.70	Bachelor's degree	5 years or more	None
11-3012	Administrative Services Managers	<10	0	2%	0.3%	\$49.33	Bachelor's degree	Less than 5 years	None
11-3013	Facilities Managers	<10	1	99%	0.4%	\$49.25	Bachelor's degree	Less than 5 years	None
11-3021	Computer and Information Systems Managers	<10	5	87%	1.3%	\$78.94	Bachelor's degree	5 years or more	None
11-3031	Financial Managers	<10	1	26%	0.5%	\$63.64	Bachelor's degree	5 years or more	None

11-3051	Industrial Production Managers	<10	1	21%	0.6%	\$46.37	Bachelor's degree	5 years or more	None
11-3061	Purchasing Managers	<10	0	24%	0.2%	\$58.16	Bachelor's degree	5 years or more	None
11-3071	Transportation, Storage, and Distribution Managers	<10	2	Insf. Data	0.2%	\$39.61	High school diploma or equivalent	5 years or more	None
11-3121	Human Resources Managers	<10	1	65%	0.4%	\$65.46	Bachelor's degree	5 years or more	None
11-3131	Training and Development Managers	<10	1	Insf. Data	0.2%	\$54.44	Bachelor's degree	5 years or more	None
11-9041	Architectural and Engineering Managers	<10	(0)	(5%)	1.2%	\$71.74	Bachelor's degree	5 years or more	None
11-9111	Medical and Health Services Managers	<10	1	17%	0.5%	\$59.77	Bachelor's degree	Less than 5 years	None
11-9199	Managers, All Other	12	4	50%	1.3%	\$33.54	Bachelor's degree	Less than 5 years	None
13-1028	Buyers and Purchasing Agents	<10	2	62%	0.7%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1041	Compliance Officers	<10	1	17%	0.8%	\$39.83	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	<10	3	93%	0.9%	\$33.07	Bachelor's degree	None	None
13-1081	Logisticians	<10	1	118%	0.3%	\$40.13	Bachelor's degree	None	None
13-1111	Management Analysts	<10	1	46%	0.5%	\$45.91	Bachelor's degree	Less than 5 years	None
13-1151	Training and Development Specialists	<10	0	7%	0.3%	\$32.32	Bachelor's degree	Less than 5 years	None
13-1161	Market Research Analysts and Marketing Specialists	<10	1	21%	0.7%	\$36.53	Bachelor's degree	None	None
13-2011	Accountants and Auditors	<10	3	51%	1.1%	\$39.34	Bachelor's degree	None	None
13-2031	Budget Analysts	<10	1	Insf. Data	0.1%	\$50.07	Bachelor's degree	None	None
13-2051	Financial and Investment Analysts	<10	3	9965%	0.5%	\$40.52	Bachelor's degree	None	None
15-1211	Computer Systems Analysts	<10	1	23%	1.3%	\$50.24	Bachelor's degree	None	None
15-1212	Information Security Analysts	<10	2	57%	0.4%	\$52.49	Bachelor's degree	Less than 5 years	None
15-1221	Computer and Information Research Scientists	<10	5	10642%	0.8%	\$86.73	Master's degree	None	None
15-1231	Computer Network Support Specialists	<10	(0)	(10%)	0.2%	\$37.32	Associate's degree	None	None
15-1232	Computer User Support Specialists	<10	1	21%	0.5%	\$29.13	Some college, no degree	None	None
15-1241	Computer Network Architects	<10	(1)	(24%)	0.3%	\$51.15	Bachelor's degree	5 years or more	None
15-1242	Database Administrators	<10	0	7%	0.1%	\$50.83	Bachelor's degree	None	None
15-1244	Network and Computer Systems Administrators	<10	3	58%	1.0%	\$49.20	Bachelor's degree	None	None
15-1251	Computer Programmers	<10	2	84%	0.5%	\$63.33	Bachelor's degree	None	None
15-1253	Software Quality Assurance Analysts and Testers	<10	3	291%	0.6%	\$47.54	Bachelor's degree	None	None
15-1299	Computer Occupations, All Other	<10	1	41%	0.4%	\$35.12	Bachelor's degree	None	None

15-2031	Operations Research Analysts	<10	(1)	(20%)	0.3%	\$43.52	Bachelor's degree	None	None
15-2051	Data Scientists	<10	5	221%	0.9%	\$48.97	Bachelor's degree	None	None
17-2011	Aerospace Engineers	<10	(0)	(5%)	0.6%	\$38.45	Bachelor's degree	None	None
17-2031	Bioengineers and Biomedical Engineers	<10	(1)	(13%)	0.5%	\$62.40	Bachelor's degree	None	None
17-2041	Chemical Engineers	<10	(8)	(81%)	0.2%	\$58.12	Bachelor's degree	None	None
17-2071	Electrical Engineers	<10	(1)	(11%)	1.0%	\$57.07	Bachelor's degree	None	None
17-2081	Environmental Engineers	0	(2)	(100%)	0.1%	\$67.66	Bachelor's degree	None	None
17-2131	Materials Engineers	<10	(2)	(52%)	0.2%	\$59.96	Bachelor's degree	None	None
17-2141	Mechanical Engineers	11	0	1%	1.1%	\$47.36	Bachelor's degree	None	None
17-2161	Nuclear Engineers	<10	0	1%	0.4%	\$70.59	Bachelor's degree	None	None
17-2199	Engineers, All Other	<10	(4)	(52%)	1.0%	\$56.08	Bachelor's degree	None	None
17-3023	Electrical and Electronic Engineering Technologists and Technicians	<10	(0)	(8%)	0.3%	\$37.31	Associate's degree	None	None
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	<10	1	54%	0.1%	\$23.60	Associate's degree	None	None
17-3026	Industrial Engineering Technologists and Technicians	<10	1	92%	0.3%	\$33.72	Associate's degree	None	None
17-3027	Mechanical Engineering Technologists and Technicians	<10	1	53%	0.4%	\$28.03	Associate's degree	None	None
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	<10	(1)	(15%)	0.8%	\$31.72	Associate's degree	None	None
19-1012	Food Scientists and Technologists	<10	0	42%	0.2%	\$38.57	Bachelor's degree	None	None
19-1013	Soil and Plant Scientists	<10	(5)	(68%)	0.3%	\$35.44	Bachelor's degree	None	None
19-1022	Microbiologists	<10	2	40%	0.6%	\$41.38	Bachelor's degree	None	None
19-1023	Zoologists and Wildlife Biologists	<10	1	26%	0.3%	\$38.24	Bachelor's degree	None	None
19-2012	Physicists	<10	1	30%	1.1%	\$87.42	Doctoral or professional degree	None	None
19-2021	Atmospheric and Space Scientists	<10	0	1%	0.5%	\$47.32	Bachelor's degree	None	None
19-2041	Environmental Scientists and Specialists, Including Health	<10	(1)	(34%)	0.2%	\$45.21	Bachelor's degree	None	None
19-2042	Geoscientists, Except Hydrologists and Geographers	<10	1	1969%	0.2%	\$46.19	Bachelor's degree	None	None
19-2099	Physical Scientists, All Other	<10	1	14%	0.7%	\$49.19	Bachelor's degree	None	None
19-3011	Economists	0	(0)	(27%)	0.1%	\$50.32	Master's degree	None	None
19-3091	Anthropologists and Archeologists	<10	1	309%	0.8%	\$36.68	Master's degree	None	None

19-3099	Social Scientists and Related Workers, All Other	<10	0	38%	0.0%	\$40.35	Bachelor's degree	None	None
19-4031	Chemical Technicians	<10	(0)	(0%)	0.6%	\$24.12	Associate's degree	None	Moderate-term on-the-job training
19-4061	Social Science Research Assistants	<10	3	690%	0.4%	\$28.06	Bachelor's degree	None	None
19-4071	Forest and Conservation Technicians	<10	2	151%	0.4%	\$28.84	Associate's degree	None	None
19-5011	Occupational Health and Safety Specialists	<10	0	26%	0.2%	\$39.99	Bachelor's degree	None	None
23-1011	Lawyers	<10	1	37%	0.3%	\$60.68	Doctoral or professional degree	None	None
25-1099	Postsecondary Teachers	0	0	12%	0.3%	\$39.38	Doctoral or professional degree	None	None
25-9099	Educational Instruction and Library Workers, All Other	<10	1	Insf. Data	0.5%	\$15.77	Bachelor's degree	None	None
27-1024	Graphic Designers	<10	1	5594%	0.1%	\$25.02	Bachelor's degree	None	None
27-3031	Public Relations Specialists	<10	1	38%	0.4%	\$30.12	Bachelor's degree	None	None
27-3042	Technical Writers	<10	(1)	(25%)	0.3%	\$41.56	Bachelor's degree	Less than 5 years	Short-term on-the-job training
29-1141	Registered Nurses	<10	0	6%	0.3%	\$62.27	Bachelor's degree	None	None
29-2018	Clinical Laboratory Technologists and Technicians	<10	0	8%	0.5%	\$39.78	Bachelor's degree	None	None
29-2099	Health Technologists and Technicians, All Other	0	(0)	(38%)	0.1%	\$25.10	Postsecondary nondegree award	None	None
31-9092	Medical Assistants	0	0	17%	0.1%	\$23.98	Postsecondary nondegree award	None	None
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	<10	(2)	(41%)	0.3%	\$21.94	High school diploma or equivalent	None	Short-term on-the-job training
33-9032	Security Guards	0	0	0%	0.1%	\$19.65	High school diploma or equivalent	None	Short-term on-the-job training
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<10	(0)	(13%)	0.2%	\$19.01	No formal educational credential	None	Short-term on-the-job training
39-2021	Animal Caretakers	<10	0	23%	0.3%	\$17.07	High school diploma or equivalent	None	Short-term on-the-job training
39-9099	Personal Care and Service Workers, All Other	0	(0)	(45%)	0.0%	\$18.18	High school diploma or equivalent	None	Short-term on-the-job training
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	<10	2	148%	0.3%	\$29.39	High school diploma or equivalent	None	Moderate-term on-the-job training
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	<10	3	110%	0.7%	\$43.96	Bachelor's degree	None	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	<10	1	64%	0.2%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	(0)	(2%)	0.3%	\$32.82	High school diploma or equivalent	Less than 5 years	None

43-3031	Bookkeeping, Accounting, and Auditing Clerks	<10	2	42%	0.6%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training
43-4051	Customer Service Representatives	<10	(0)	(4%)	0.3%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	<10	(0)	(7%)	0.2%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	<10	0	16%	0.3%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
43-6011	Executive Secretaries and Executive Administrative Assistants	<10	1	18%	0.6%	\$32.27	High school diploma or equivalent	Less than 5 years	None
43-6013	Medical Secretaries and Administrative Assistants	<10	(0)	(3%)	0.3%	\$23.94	High school diploma or equivalent	None	Moderate-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<10	(2)	(20%)	1.0%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-9061	Office Clerks, General	<10	(2)	(28%)	0.8%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
49-9071	Maintenance and Repair Workers, General	<10	0	8%	0.4%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	<10	0	4%	0.2%	\$31.65	High school diploma or equivalent	Less than 5 years	None
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	<10	1	65%	0.2%	\$21.15	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2098	Miscellaneous Assemblers and Fabricators	<10	3	Insf. Data	0.3%	\$21.82	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	<10	2	71%	0.6%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9199	Production Workers, All Other	0	(2)	(100%)	0.1%	\$21.17	High school diploma or equivalent	None	Moderate-term on-the-job training

Source: Lightcast, City of Bend

Biotech Summary:

The *Biotech Industry Cluster* accounts for 1.5% of Bend's gross domestic product at \$156 million dollars. The industry cluster is anchored by *NAICS Code 541715 Research and Development in Physical, Engineering, and Life Sciences* which employs 66% of the total industry cluster workforce and accounts for 68% of the cluster's contribution to the overall clusters economic impact. The industry cluster sells 57% of its products and services outside the Bend area, with 53% of the industry's demand met by local suppliers.

The average education and skills level needed to be employed in this cluster is a bachelor's degree with limited to no-work experience required. There are local educational institutions that have the capacity to provide the educational skills required.

The proposed cluster name for *Biotech* is **High Tech**.

Information Technology

Table 13. Information Technology Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg.Wage/Year
333242	Semiconductor Machinery Manufacturing	Growing Base	LQ +++ DS +++	147	\$88,724
333310	Commercial and Service Industry Machinery Manufacturing	Growing Base	LQ +++ DS +++	167	\$138,965
334111	Electronic Computer Manufacturing	Emerging	LQ --- DS +++	31	\$105,946
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	Growing Base	LQ +++ DS +++	30	\$73,986
334310	Audio and Video Equipment Manufacturing	Growing Base	LQ +++ DS +++	37	\$139,627
334413	Semiconductor and Related Device Manufacturing	Growing Base	LQ 1 DS +++	68	\$114,908
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	Emerging	LQ - DS +++	15	\$195,468
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	Growing Base	LQ 1 DS +++	27	\$92,050
	Instruments and Related Products				
334513	Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	Emerging	LQ - DS +++	25	\$67,128
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	Mature	LQ 1, DS --	11	\$205,952
334519	Other Measuring and Controlling Device Manufacturing	Growing Base	LQ +++ DS +++	21	\$239,167
334610	Manufacturing and Reproducing Magnetic and Optical Media	Growing Base	LQ +++ DS +++	9	\$119,458
513210	Software Publishers	Mature	LQ 1 DS ---	334	\$134,980
Total				922	\$126,967

Source: Lightcast, City of Bend

Table 14. Information Technology Labor Analysis

SOC	Description	Employed in Industry Group (2023)	Change (2019 - 2023)	% Change (2019 - 2023)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Typical Entry Level Education		Work Experience Required	Typical On-The-Job Training
							Typical Entry Level Education	Work Experience Required		
15-1252	Software Developers	250	78	46%	18.20%	\$61.04	Bachelor's degree	None	None	
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	73	27	59%	5.50%	\$21.15	High school diploma or equivalent	None	Moderate-term on-the-job training	
11-1021	General and Operations Managers	56	0	1%	4.20%	\$43.51	Bachelor's degree	5 years or more	None	
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	34	8	33%	3.70%	\$29.39	High school diploma or equivalent	None	Moderate-term on-the-job training	
Nov-21	Computer and Information Systems Managers	43	10	31%	3.70%	\$78.94	Bachelor's degree	5 years or more	None	
15-1232	Computer User Support Specialists	46	-31	-41%	3.60%	\$29.13	Some college, no degree	None	None	
13-1161	Market Research Analysts and Marketing Specialists	41	-3	-6%	3.20%	\$36.53	Bachelor's degree	None	None	
17-2061	Computer Hardware Engineers	24	20	503%	2.90%	\$68.44	Bachelor's degree	None	None	
51-2098	Miscellaneous Assemblers and Fabricators	30	11	58%	2.90%	\$21.82	High school diploma or equivalent	None	Moderate-term on-the-job training	
13-1082	Project Management Specialists	31	-8	-20%	2.70%	\$42.30	Bachelor's degree	None	None	
15-1253	Software Quality Assurance Analysts and Testers	29	13	85%	2.50%	\$47.54	Bachelor's degree	None	None	
15-1211	Computer Systems Analysts	27	6	30%	2.50%	\$50.24	Bachelor's degree	None	None	
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	39	6	19%	2.10%	\$43.96	Bachelor's degree	None	Moderate-term on-the-job training	
43-4051	Customer Service Representatives	27	-8	-22%	1.80%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training	
Nov-21	Marketing Managers	21	-3	-12%	1.70%	\$54.47	Bachelor's degree	5 years or more	None	
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	19	8	74%	1.50%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training	
13-1071	Human Resources Specialists	16	5	53%	1.40%	\$33.07	Bachelor's degree	None	None	
15-1255	Web and Digital Interface Designers	15	-13	-47%	1.40%	\$37.34	Bachelor's degree	None	None	
Nov-22	Sales Managers	19	-1	-3%	1.40%	\$54.84	Bachelor's degree	Less than 5 years	None	
43-3031	Bookkeeping, Accounting, and Auditing Clerks	15	0	2%	1.30%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training	
13-2011	Accountants and Auditors	18	2	12%	1.20%	\$39.34	Bachelor's degree	None	None	
13-1199	Business Operations Specialists, All Other	15	6	65%	1.20%	\$30.68	Bachelor's degree	None	None	
15-1244	Network and Computer Systems Administrators	14	-4	-21%	1.10%	\$49.20	Bachelor's degree	None	None	
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	14	-5	-25%	1.10%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training	

51-1011	First-Line Supervisors of Production and Operating Workers	12	3	37%	1.00%	\$31.65	High school diploma or equivalent	Less than 5 years	None
Nov-99	Managers, All Other	13	4	50%	1.00%	\$33.54	Bachelor's degree	Less than 5 years	None
17-2112	Industrial Engineers	11	6	112%	0.90%	\$44.25	Bachelor's degree	None	None
15-1299	Computer Occupations, All Other	13	-5	-28%	0.90%	\$35.12	Bachelor's degree	None	None
43-5071	Shipping, Receiving, and Inventory Clerks	<10	1	18%	0.90%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
15-2051	Data Scientists	10	7	262%	0.80%	\$48.97	Bachelor's degree	None	None
11-1011	Chief Executives	<10	0	2%	0.20%	\$50.79	Bachelor's degree	5 years or more	None
Nov-32	Public Relations Managers	<10	1	28%	0.30%	\$54.70	Bachelor's degree	5 years or more	None
Nov-12	Administrative Services Managers	<10	-3	-34%	0.40%	\$49.33	Bachelor's degree	Less than 5 years	None
Nov-31	Financial Managers	<10	-1	-9%	0.50%	\$63.64	Bachelor's degree	5 years or more	None
Nov-51	Industrial Production Managers	<10	1	14%	0.40%	\$46.37	Bachelor's degree	5 years or more	None
Nov-71	Transportation, Storage, and Distribution Managers	0	0	Insf. Data	0.00%	\$39.61	High school diploma or equivalent	5 years or more	None
Nov-21	Human Resources Managers	<10	1	25%	0.40%	\$65.46	Bachelor's degree	5 years or more	None
Nov-31	Training and Development Managers	<10	1	65%	0.50%	\$54.44	Bachelor's degree	5 years or more	None
Nov-41	Architectural and Engineering Managers	<10	0	9%	0.40%	\$71.74	Bachelor's degree	5 years or more	None
13-1028	Buyers and Purchasing Agents	<10	1	19%	0.60%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1041	Compliance Officers	<10	1	32%	0.20%	\$39.83	Bachelor's degree	None	Moderate-term on-the-job training
13-1081	Logisticians	<10	0	83%	0.00%	\$40.13	Bachelor's degree	None	None
13-1111	Management Analysts	<10	-2	-25%	0.70%	\$45.91	Bachelor's degree	Less than 5 years	None
13-1121	Meeting, Convention, and Event Planners	0	-4	-100%	0.10%	\$27.62	Bachelor's degree	None	None
13-1151	Training and Development Specialists	<10	-6	-51%	0.50%	\$32.32	Bachelor's degree	Less than 5 years	None
13-2051	Financial and Investment Analysts	<10	1	37%	0.50%	\$40.52	Bachelor's degree	None	None
13-2082	Tax Preparers	<10	1	Insf. Data	0.30%	\$23.56	High school diploma or equivalent	None	Moderate-term on-the-job training
15-1212	Information Security Analysts	<10	0	6%	0.40%	\$52.49	Bachelor's degree	Less than 5 years	None
15-1221	Computer and Information Research Scientists	<10	4	Insf. Data	0.30%	\$86.73	Master's degree	None	None
15-1231	Computer Network Support Specialists	<10	-7	-42%	0.50%	\$37.32	Associate's degree	None	None
15-1241	Computer Network Architects	<10	-5	-56%	0.30%	\$51.15	Bachelor's degree	5 years or more	None
15-1242	Database Administrators	<10	-1	-29%	0.20%	\$50.83	Bachelor's degree	None	None
15-1243	Database Architects	<10	4	63%	0.30%	\$88.09	Bachelor's degree	None	None

15-1251	Computer Programmers	<10	-5	-35%	0.80%	\$63.33	Bachelor's degree	None	None
15-1254	Web Developers	<10	0	-4%	0.60%	\$29.15	Bachelor's degree	None	None
15-2031	Operations Research Analysts	<10	-3	-56%	0.20%	\$43.52	Bachelor's degree	None	None
17-2011	Aerospace Engineers	<10	-1	-51%	0.10%	\$38.45	Bachelor's degree	None	None
17-2071	Electrical Engineers	<10	2	35%	0.40%	\$57.07	Bachelor's degree	None	None
17-2072	Electronics Engineers, Except Computer	<10	-10	-86%	0.00%	\$56.30	Bachelor's degree	None	None
17-2141	Mechanical Engineers	<10	-1	-13%	0.40%	\$47.36	Bachelor's degree	None	None
17-2199	Engineers, All Other	<10	3	201%	0.20%	\$56.08	Bachelor's degree	None	None
17-3013	Mechanical Drafters	<10	0	76%	0.10%	\$23.64	Associate's degree	None	None
17-3023	Electrical and Electronic Engineering Technologists and Technicians	<10	2	54%	0.30%	\$37.31	Associate's degree	None	None
17-3026	Industrial Engineering Technologists and Technicians	<10	1	41%	0.00%	\$33.72	Associate's degree	None	None
17-3027	Mechanical Engineering Technologists and Technicians	<10	0	21%	0.00%	\$28.03	Associate's degree	None	None
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	<10	0	-16%	0.00%	\$31.72	Associate's degree	None	None
19-1029	Biological Scientists, All Other	<10	1	Insf. Data	0.10%	\$41.93	Bachelor's degree	None	None
23-1011	Lawyers	<10	0	-10%	0.20%	\$60.68	Doctoral or professional degree	None	None
23-2011	Paralegals and Legal Assistants	<10	0	-7%	0.10%	\$27.72	Associate's degree	None	None
25-9031	Instructional Coordinators	<10	2	Insf. Data	0.20%	\$44.03	Master's degree	5 years or more	None
27-1011	Art Directors	<10	0	10%	0.30%	\$35.93	Bachelor's degree	5 years or more	None
27-1014	Special Effects Artists and Animators	<10	5	247301%	0.50%	\$24.96	Bachelor's degree	None	None
27-1024	Graphic Designers	<10	-4	-47%	0.50%	\$25.02	Bachelor's degree	None	None
27-1029	Designers, All Other	<10	0	1055%	0.00%	\$31.14	Bachelor's degree	None	None
27-2012	Producers and Directors	<10	0	5%	0.20%	\$28.92	Bachelor's degree	Less than 5 years	None
27-3031	Public Relations Specialists	<10	0	-3%	0.40%	\$30.12	Bachelor's degree	None	None
27-3041	Editors	<10	-2	-60%	0.10%	\$26.53	Bachelor's degree	Less than 5 years	None
27-3042	Technical Writers	<10	-5	-65%	0.30%	\$41.56	Bachelor's degree	Less than 5 years	Short-term on-the-job training
27-3091	Interpreters and Translators	0	0	1434%	0.10%	\$28.96	Bachelor's degree	None	None
29-2072	Medical Records Specialists	0	0	0%	0.20%	\$26.44	Postsecondary nondegree award	None	None
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<10	0	58%	0.00%	\$19.01	No formal educational credential	None	Short-term on-the-job training
41-1012	First-Line Supervisors of Non-Retail Sales Workers	<10	0	-3%	0.30%	\$32.92	High school diploma or equivalent	Less than 5 years	None

41-9031	Sales Engineers	<10	-2	-20%	0.40%	\$47.76	Bachelor's degree	None	Moderate-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	-3	-28%	0.50%	\$32.82	High school diploma or equivalent	Less than 5 years	None
43-3021	Billing and Posting Clerks	<10	1	36%	0.20%	\$25.28	High school diploma or equivalent	None	Moderate-term on-the-job training
43-3051	Payroll and Timekeeping Clerks	<10	2	136%	0.10%	\$27.54	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4151	Order Clerks	<10	1	72%	0.30%	\$27.01	Some college, no degree	None	Short-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	<10	-2	-34%	0.10%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-6011	Executive Secretaries and Executive Administrative Assistants	<10	-2	-27%	0.30%	\$32.27	High school diploma or equivalent	Less than 5 years	None
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<10	-4	-47%	0.30%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-9061	Office Clerks, General	<10	-5	-35%	0.60%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
47-2111	Electricians	<10	0	-7%	0.00%	\$36.40	High school diploma or equivalent	None	Apprenticeship
47-2211	Sheet Metal Workers	0	0	14%	0.00%	\$27.77	High school diploma or equivalent	None	Apprenticeship
47-4021	Elevator and Escalator Installers and Repairers	0	0	0%	0.00%	\$70.28	High school diploma or equivalent	None	Apprenticeship
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	<10	0	58%	0.00%	\$38.09	High school diploma or equivalent	Less than 5 years	None
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	<10	0	83%	0.00%	\$35.93	High school diploma or equivalent	None	Long-term on-the-job training
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	<10	0	101%	0.00%	\$29.93	Postsecondary nondegree award	None	Long-term on-the-job training
49-9041	Industrial Machinery Mechanics	<10	1	40%	0.20%	\$31.17	High school diploma or equivalent	None	Long-term on-the-job training
49-9043	Maintenance Workers, Machinery	<10	1	434%	0.00%	\$36.20	High school diploma or equivalent	None	Long-term on-the-job training
49-9071	Maintenance and Repair Workers, General	<10	-1	-35%	0.10%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2031	Engine and Other Machine Assemblers	<10	4	92%	0.30%	\$31.27	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2041	Structural Metal Fabricators and Fitters	<10	0	6%	0.10%	\$23.90	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2051	Fiberglass Laminators and Fabricators	<10	-1	-60%	0.00%	\$28.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	0	0	-28%	0.10%	\$20.48	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	<10	3	408%	0.30%	\$26.29	High school diploma or equivalent	None	Moderate-term on-the-job training

51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	<10	0	72%	0.00%	\$23.89	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4041	Machinists	<10	-1	-19%	0.30%	\$29.40	High school diploma or equivalent	None	Long-term on-the-job training
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	<10	0	99%	0.00%	\$17.78	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	<10	2	333%	0.30%	\$21.13	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4111	Tool and Die Makers	<10	0	56%	0.00%	\$30.43	Postsecondary nondegree award	None	Long-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	10	-1	-11%	0.60%	\$25.22	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	<10	1	149%	0.20%	\$23.25	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9141	Semiconductor Processing Technicians	<10	-69	-91%	0.50%	\$26.43	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9161	Computer Numerically Controlled Tool Operators	<10	2	96%	0.20%	\$24.14	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9162	Computer Numerically Controlled Tool Programmers	<10	0	118%	0.00%	\$36.22	Postsecondary nondegree award	None	Moderate-term on-the-job training
51-9198	Helpers--Production Workers	<10	1	364%	0.00%	\$19.08	High school diploma or equivalent	None	Short-term on-the-job training
51-9199	Production Workers, All Other	<10	-3	-86%	0.00%	\$21.17	High school diploma or equivalent	None	Moderate-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	0	0	41%	0.00%	\$30.44	Postsecondary nondegree award	None	Short-term on-the-job training
53-7051	Industrial Truck and Tractor Operators	<10	0	87%	0.00%	\$23.39	No formal educational credential	None	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	<10	0	4%	0.10%	\$19.75	No formal educational credential	None	Short-term on-the-job training
53-7063	Machine Feeders and Offbearers	<10	0	14%	0.00%	\$18.67	No formal educational credential	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	<10	0	106%	0.00%	\$21.67	High school diploma or equivalent	None	Short-term on-the-job training

Source: Lightcast, City of Bend

Summary:

The Information Technology Industry Cluster accounts for 5% of Bend's gross domestic product at \$475 million dollars. The industry cluster is anchored by *NAICS Code 513210 Software Publishers* which employs 36% of the total industry cluster and accounts for 87% of the cluster's contribution to the overall clusters economic impact. The industry cluster sells 63% of its products and services outside the Bend area, with 77% of the industry's demand met by local suppliers.

The average education and skills level needed to be employed in this cluster is a bachelor's degree with limited to no-work experience required. There are local educational institutions that have the capacity to provide the educational skills required.

The proposed cluster name for *Information Technology and Analytical Instruments* is **High Tech**.

Forestry and Wood Products

Table 15. Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg. Wage/Year
113110	Timber Tract Operations	Mature	LQ +++ DS -	291	\$ 83,659
113310	Logging	Growing Base	LQ + DS +++	27	\$ 22,607
115310	Support Activities for Forestry	Growing Base	LQ +++ DS +++	30	\$ 83,858
321114	Wood Preservation	Transforming	LQ --- DS ---		
321911	Wood Window and Door Manufacturing	Mature	LQ +++ DS -	233	\$ 54,339
321912	Cut Stock, Resawing Lumber, and Planning	Mature	LQ 1 DS -	5	\$ 45,355
321918	Other Millwork (including Flooring)	Growing Base	LQ +++ DS 0	119	\$ 55,510
321992	Prefabricated Wood Building Manufacturing	Transforming	LQ --- DS 0	2	
TOTAL				707	\$ 68,053

Source: Lightcast, City of Bend

Table 16. Forestry and Wood Products Labor Analysis

SOC	Description	Employed in	Employed in	Employed	Change	% Change	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
		Industry Group (2019)	Industry Group (2023)	Industry Group (2024)							
51-7011	Cabinetmakers and Bench Carpenters	93	54	56	-39	-42%	23.50%	\$23.73	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2098	Miscellaneous Assemblers and Fabricators	22	23	23	1	5%	9.60%	\$21.82	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	12	17	18	5	38%	7.70%	\$24.11	High school diploma or equivalent	None	Moderate-term on-the-job training
47-2031	Carpenters	12	12	12	0	-1%	5.20%	\$28.37	High school diploma or equivalent	None	Apprenticeship
11-1011	Chief Executives	<10	<10	<10	0	-14%	0.10%	\$50.79	Bachelor's degree	5 years or more	None
11-1021	General and Operations Managers	<10	<10	<10	1	23%	2.00%	\$43.51	Bachelor's degree	5 years or more	None
Nov-51	Industrial Production Managers	<10	<10	<10	0	10%	0.90%	\$46.37	Bachelor's degree	5 years or more	None
Nov-99	Managers, All Other	<10	<10	<10	-3	-35%	2.20%	\$33.54	Bachelor's degree	Less than 5 years	None
13-1028	Buyers and Purchasing Agents	<10	<10	<10	1	101%	0.60%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1051	Cost Estimators	<10	<10	<10	0	-4%	0.50%	\$36.59	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	0	<10	<10	1	Insf. Data	0.30%	\$33.07	Bachelor's degree	None	None
13-1082	Project Management Specialists	<10	<10	<10	2	151%	1.10%	\$42.30	Bachelor's degree	None	None
13-1161	Market Research Analysts and Marketing Specialists	0	<10	<10	1	Insf. Data	0.30%	\$36.53	Bachelor's degree	None	None
13-2011	Accountants and Auditors	0	<10	<10	1	Insf. Data	0.50%	\$39.34	Bachelor's degree	None	None
17-2112	Industrial Engineers	<10	<10	<10	1	153%	0.80%	\$44.25	Bachelor's degree	None	None
17-3019	Drafters, All Other	<10	<10	<10	-1	-35%	1.10%	\$22.13	Associate's degree	None	None
27-1021	Commercial and Industrial Designers	<10	<10	<10	0	0%	0.50%	\$29.84	Bachelor's degree	None	None
27-1025	Interior Designers	0	0	<10	0	-22%	0.40%	\$29.38	Bachelor's degree	None	None
27-1029	Designers, All Other	<10	<10	<10	2	523%	1.00%	\$31.14	Bachelor's degree	None	None
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0	<10	<10	1	1101%	0.40%	\$19.01	No formal educational credential	None	Short-term on-the-job training

41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	<10	<10	<10	2	33%	2.40%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	<10	<10	0	8%	0.50%	\$32.82	High school diploma or equivalent	Less than 5 years	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	<10	<10	<10	1	56%	1.30%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training
43-4151	Order Clerks	0	<10	<10	1	Insf. Data	0.40%	\$27.01	Some college, no degree	None	Short-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	<10	<10	<10	2	56%	2.10%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
51-2051	Fiberglass Laminators and Fabricators	0	0	<10	0	0%	0.30%	\$28.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	<10	<10	<10	2	139%	1.20%	\$26.29	High school diploma or equivalent	None	Moderate-term on-the-job training

Source: Lightcast, City of Bend

Summary:

The *Forestry and Wood Products Cluster* accounts for 1% of Bend's gross domestic product at \$66 million dollars. The industry cluster is anchored by *NAICS Code 113110 Timber Tract Operations* which employs 41% of the total industry cluster and only accounts for 1% of the cluster's contribution to the overall cluster's economic impact. The firm with the largest economic contribution to the clusters' economic impact is wood window and door manufacturing. The industry cluster sells 63% of its products and services outside the Bend area, with 57% of the industry's demand met by local suppliers.

The average education and skills level needed to be employed in this cluster is a high school degree with moderate term on the job training. There are local educational institutions that have the capacity to provide the knowledge and skills required.

The proposed cluster name for *Forestry and Wood Products Cluster* is **Forestry and Wood Products.**

Furniture

Table 17. Furniture Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg.Wage/Year
337110	Wood Kitchen Cabinet and Countertop Manufacturing	Growing Base	LQ +++ DS 0	158	\$ 59,588
337122	No upholstered Wood Household Furniture Manufacturing	Growing Base	LQ +++ DS +	38	\$ 39,825
337126	Household Furniture (except Wood and Upholstered) Manufacturing	Transforming	LQ --- DS 0	1	\$ 9,000
337215	Showcase, Partition, Shelving, and Locker Manufacturing	Emerging	LQ 1 DS ++	15	\$ 56,667
TOTAL				212	\$ 55,601

Source: Lightcast, City of Bend

Table 18. Furniture Labor Analysis

SOC	Description	Employed in Industry Group (2019)	Employed in Industry Group (2023)	Change (2019 - 2023)	% Change (2019 - 2023)	% of Total Jobs in Industry Group (2024)		Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
						Median Hourly Earnings	Typical Entry Level Education			
51-7011	Cabinetmakers and Bench Carpenters	93	54	(39)	(42%)	23.5%	\$23.73	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2098	Miscellaneous Assemblers and Fabricators	22	23	1	5%	9.6%	\$21.82	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	12	17	5	38%	7.7%	\$24.11	High school diploma or equivalent	None	Moderate-term on-the-job training
47-2031	Carpenters	12	12	(0)	(1%)	5.2%	\$28.37	High school diploma or equivalent	None	Apprenticeship
11-1011	Chief Executives	<10	<10	(0)	(14%)	0.1%	\$50.79	Bachelor's degree	5 years or more	None
11-1021	General and Operations Managers	<10	<10	1	23%	2.0%	\$43.51	Bachelor's degree	5 years or more	None
11-3051	Industrial Production Managers	<10	<10	0	10%	0.9%	\$46.37	Bachelor's degree	5 years or more	None
11-9199	Managers, All Other	<10	<10	(3)	(35%)	2.2%	\$33.54	Bachelor's degree	Less than 5 years	None
13-1028	Buyers and Purchasing Agents	<10	<10	1	101%	0.6%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1051	Cost Estimators	<10	<10	(0)	(4%)	0.5%	\$36.59	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	0	<10	1	Insf. Data	0.3%	\$33.07	Bachelor's degree	None	None
13-1082	Project Management Specialists	<10	<10	2	151%	1.1%	\$42.30	Bachelor's degree	None	None
13-1161	Market Research Analysts and Marketing Specialists	0	<10	1	Insf. Data	0.3%	\$36.53	Bachelor's degree	None	None
13-2011	Accountants and Auditors	0	<10	1	Insf. Data	0.5%	\$39.34	Bachelor's degree	None	None
17-2112	Industrial Engineers	<10	<10	1	153%	0.8%	\$44.25	Bachelor's degree	None	None
17-3019	Drafters, All Other	<10	<10	(1)	(35%)	1.1%	\$22.13	Associate's degree	None	None
27-1021	Commercial and Industrial Designers	<10	<10	0	0%	0.5%	\$29.84	Bachelor's degree	None	None
27-1025	Interior Designers	0	0	(0)	(22%)	0.4%	\$29.38	Bachelor's degree	None	None
27-1029	Designers, All Other	<10	<10	2	523%	1.0%	\$31.14	Bachelor's degree	None	None
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0	<10	1	1101%	0.4%	\$19.01	No formal educational credential	None	Short-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	<10	<10	2	33%	2.4%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training

43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	<10	0	8%	0.5%	\$32.82	High school diploma or equivalent Some college, no degree	Less than 5 years	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	<10	<10	1	56%	1.3%	\$23.83	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4051	Customer Service Representatives	<10	<10	0	8%	0.6%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training
43-4151	Order Clerks	0	<10	1	Insf. Data	0.4%	\$27.01	Some college, no degree	None	Short-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	<10	<10	(0)	(26%)	0.5%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	<10	<10	2	56%	2.1%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<10	<10	(0)	(1%)	0.7%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-9061	Office Clerks, General	<10	<10	0	0%	1.3%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
49-9041	Industrial Machinery Mechanics	<10	<10	0	19%	0.4%	\$31.17	High school diploma or equivalent	None	Long-term on-the-job training
49-9071	Maintenance and Repair Workers, General	<10	<10	0	10%	0.7%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
49-9099	Installation, Maintenance, and Repair Workers, All Other	<10	<10	1	77%	0.6%	\$24.20	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	<10	<10	3	35%	3.7%	\$31.65	High school diploma or equivalent	Less than 5 years	None
51-2041	Structural Metal Fabricators and Fitters	<10	<10	(0)	(14%)	0.4%	\$23.90	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2051	Fiberglass Laminators and Fabricators	0	0	0	0%	0.3%	\$28.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	<10	<10	2	139%	1.2%	\$26.29	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	<10	<10	0	3%	0.6%	\$21.13	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	<10	<10	(0)	(6%)	0.8%	\$25.22	High school diploma or equivalent No formal educational credential	None	Moderate-term on-the-job training
51-6031	Sewing Machine Operators	<10	<10	(1)	(14%)	1.2%	\$19.37	High school diploma or equivalent	None	Short-term on-the-job training
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	<10	<10	3	292%	1.2%	\$21.78	High school diploma or equivalent	None	Moderate-term on-the-job training
51-6092	Fabric and Apparel Patternmakers	0	<10	3	Insf. Data	1.8%	\$28.25	High school diploma or equivalent	None	Moderate-term on-the-job training
51-6093	Upholsterers	<10	<10	(1)	(16%)	2.7%	\$24.99	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7021	Furniture Finishers	<10	<10	(9)	(97%)	0.1%	\$15.53	High school diploma or equivalent	None	Short-term on-the-job training
51-7031	Model Makers, Wood	<10	<10	(0)	(29%)	0.1%	\$15.79	High school diploma or equivalent	None	Moderate-term on-the-job training

51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	<10	<10	1	14%	2.0%	\$23.11	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7099	Woodworkers, All Other	<10	<10	(0)	(5%)	0.7%	\$16.68	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	<10	<10	2	66%	1.3%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9111	Packaging and Filling Machine Operators and Tenders	<10	<10	0	37%	0.4%	\$22.68	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	<10	<10	3	110%	2.1%	\$23.25	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9161	Computer Numerically Controlled Tool Operators	0	<10	2	17656%	0.8%	\$24.14	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9191	Adhesive Bonding Machine Operators and Tenders	<10	<10	(0)	(16%)	0.7%	\$21.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9198	Helpers--Production Workers	<10	<10	0	3%	0.6%	\$19.08	High school diploma or equivalent	None	Short-term on-the-job training
51-9199	Production Workers, All Other	<10	<10	(1)	(42%)	1.1%	\$21.17	High school diploma or equivalent	None	Moderate-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	<10	<10	(0)	(7%)	0.4%	\$30.44	Postsecondary nondegree award	None	Short-term on-the-job training
53-3033	Light Truck Drivers	<10	<10	1	59%	0.5%	\$22.01	High school diploma or equivalent	None	Short-term on-the-job training
53-7051	Industrial Truck and Tractor Operators	<10	<10	1	74%	0.6%	\$23.39	educational credential	None	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	<10	<10	0	5%	1.5%	\$19.75	No formal educational credential	None	Short-term on-the-job training
53-7063	Machine Feeders and Offbearers	<10	<10	0	13%	1.7%	\$18.67	No formal educational credential	None	Short-term on-the-job training
53-7064	Packers and Packagers, Hand	<10	<10	0	2%	0.5%	\$17.78	No formal educational credential	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	<10	<10	(0)	(15%)	0.4%	\$21.67	High school diploma or equivalent	None	Short-term on-the-job training

Source: Lightcast, City of Bend

Summary:

The *Furniture Cluster* accounts for less than 1% of Bend's gross domestic product at \$17 million dollars. The industry cluster is anchored by *NAICS Code 337110 Wood Kitchen Cabinet and Countertop Manufacturing* which employs 76% of the total industry cluster and accounts for 78% overall clusters' economic impact. The industry cluster sells 87% of its products and services outside the Bend area, with 85% of the industry's demand met by local suppliers.

The average education and skills level needed to be employed in this cluster is a high school degree with moderate term on the job training. There are local educational institutions that have the capacity to provide the knowledge and skills required.

The proposed cluster name for *Furniture Cluster* is **Forestry and Wood Products**.

Recreational Goods and Small Appliances; Trailers, Motor Homes, and Appliances

Table 19. Outdoor Products Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg.Wage/Year
336214	Travel Trailer and Camper Manufacturing	Growing Base	LQ +++ DS +++	89	\$60,326
336991	Motorcycle, Bicycle, and Parts Manufacturing	Growing Base	LQ +++ DS +++	37	\$56,612
337920	Blind and Shade Manufacturing	Mature	LQ +++ DS ---	55	\$55,723
339992	Musical Instrument Manufacturing	Emerging	LQ +++ DS 0	44	\$48,982
339993	Fastener, Button, Needle, and Pin Manufacturing	Emerging	LQ +++ DS 0	24	\$69,258
TOTAL				249	\$57,614

Source: Lightcast, City of Bend

Table 20. Outdoor Products Labor Analysis

SOC	Description	Employed in	Employed in	Change	% Change	% of Total	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
		Industry Group (2019)	Industry Group (2023)	(2019 - 2023)	(2019 - 2023)	Jobs in Industry Group (2024)				
51-2098	Miscellaneous Assemblers and Fabricators	49	65	17	34%	25.7%	\$21.82	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	20	25	6	28%	6.1%	\$25.22	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	10	14	4	38%	4.3%	\$31.65	High school diploma or equivalent	Less than 5 years	None
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	<10	<10	4	76%	4.3%	\$26.29	High school diploma or equivalent	None	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	12	11	(0)	(3%)	3.6%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training
11-1011	Chief Executives	<10	<10	0	20%	0.3%	\$50.79	Bachelor's degree	5 years or more	None
11-1021	General and Operations Managers	11	11	(0)	(1%)	2.6%	\$43.51	Bachelor's degree	5 years or more	None
11-2022	Sales Managers	<10	<10	(0)	(30%)	0.3%	\$54.84	Bachelor's degree	Less than 5 years	None
11-3051	Industrial Production Managers	<10	<10	(0)	(0%)	1.0%	\$46.37	Bachelor's degree	5 years or more	None
11-9199	Managers, All Other	<10	<10	0	11%	1.5%	\$33.54	Bachelor's degree	Less than 5 years	None
13-1028	Buyers and Purchasing Agents	<10	<10	3	189%	0.6%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	0	<10	1	Insf. Data	0.3%	\$33.07	Bachelor's degree	None	None
13-1082	Project Management Specialists	<10	<10	1	57%	0.9%	\$42.30	Bachelor's degree	None	None
13-1161	Market Research Analysts and Marketing Specialists	<10	<10	0	6%	0.6%	\$36.53	Bachelor's degree	None	None
13-1199	Business Operations Specialists, All Other	0	<10	1	7436%	0.1%	\$30.68	Bachelor's degree	None	None
13-2011	Accountants and Auditors	<10	<10	0	19%	0.5%	\$39.34	Bachelor's degree	None	None
15-1252	Software Developers	<10	<10	0	26%	0.4%	\$61.04	Bachelor's degree	None	None
17-2112	Industrial Engineers	<10	<10	4	206%	1.1%	\$44.25	Bachelor's degree	None	None
17-2141	Mechanical Engineers	<10	<10	0	20%	0.3%	\$47.36	Bachelor's degree	None	None
27-1011	Art Directors	<10	<10	2	92%	1.2%	\$35.93	Bachelor's degree	5 years or more	None

27-1012	Craft Artists	<10	<10	0	1%	0.7%	\$4.92	No formal educational credential	None	Long-term on-the-job training
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	<10	<10	(0)	(5%)	0.5%	\$8.20	Bachelor's degree	None	Long-term on-the-job training
27-1014	Special Effects Artists and Animators	<10	<10	1	82%	1.0%	\$24.96	Bachelor's degree	None	None
27-1019	Artists and Related Workers, All Other	<10	<10	(1)	(29%)	0.3%	\$21.11	No formal educational credential	None	Long-term on-the-job training
27-1024	Graphic Designers	<10	<10	(2)	(27%)	1.9%	\$25.02	Bachelor's degree	None	None
27-1029	Designers, All Other	<10	<10	0	30%	0.5%	\$31.14	Bachelor's degree	None	None
41-2031	Retail Salespersons	<10	<10	0	37%	0.3%	\$17.84	No formal educational credential	None	Short-term on-the-job training
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	0	0	0	0%	0.3%	\$29.39	High school diploma or equivalent	None	Moderate-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	<10	(0)	(29%)	0.3%	\$32.82	High school diploma or equivalent	Less than 5 years	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	<10	<10	(0)	(9%)	1.1%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training
43-4051	Customer Service Representatives	<10	<10	(1)	(28%)	0.7%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training
43-4151	Order Clerks	0	0	(0)	(100%)	0.3%	\$27.01	Some college, no degree	None	Short-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	<10	<10	(1)	(34%)	0.3%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	<10	<10	3	48%	2.7%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<10	<10	(0)	(21%)	0.5%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-9061	Office Clerks, General	<10	<10	(2)	(40%)	1.1%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
47-2031	Carpenters	<10	0	(1)	(96%)	0.3%	\$28.37	High school diploma or equivalent	None	Apprenticeship
47-2211	Sheet Metal Workers	0	<10	0	32%	0.1%	\$27.77	High school diploma or equivalent	None	Apprenticeship
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	0	<10	1	1738%	0.3%	\$38.09	High school diploma or equivalent	Less than 5 years	None
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	0	<10	3	82157%	0.4%	\$35.93	High school diploma or equivalent	None	Long-term on-the-job training
49-9041	Industrial Machinery Mechanics	<10	<10	0	6%	0.4%	\$31.17	High school diploma or equivalent	None	Long-term on-the-job training
49-9071	Maintenance and Repair Workers, General	<10	<10	2	87%	0.8%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
49-9099	Installation, Maintenance, and Repair Workers, All Other	<10	<10	2	52%	2.2%	\$24.20	High school diploma or equivalent	None	Moderate-term on-the-job training

51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	<10	<10	(0)	(2%)	1.1%	\$21.15	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2031	Engine and Other Machine Assemblers	0	<10	2	Insf. Data	0.4%	\$31.27	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2041	Structural Metal Fabricators and Fitters	<10	12	2	26%	2.0%	\$23.90	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2051	Fiberglass Laminators and Fabricators	0	14	14	305206%	2.4%	\$28.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4041	Machinists	<10	<10	(2)	(44%)	0.4%	\$29.40	High school diploma or equivalent	None	Long-term on-the-job training
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	<10	<10	(1)	(21%)	0.6%	\$17.78	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	<10	<10	1	39%	1.8%	\$21.13	High school diploma or equivalent	None	Moderate-term on-the-job training
51-5112	Printing Press Operators	<10	<10	(1)	(26%)	0.5%	\$22.35	High school diploma or equivalent	None	Moderate-term on-the-job training
51-6031	Sewing Machine Operators	<10	<10	(1)	(26%)	0.5%	\$19.37	No formal educational credential	None	Short-term on-the-job training
51-7011	Cabinetmakers and Bench Carpenters	<10	0	(3)	(99%)	0.4%	\$23.73	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	0	0	(0)	(100%)	0.2%	\$23.11	High school diploma or equivalent	None	Moderate-term on-the-job training
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	<10	<10	(1)	(34%)	0.7%	\$24.11	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	<10	<10	0	22%	0.4%	\$25.17	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	<10	11	6	118%	2.7%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9071	Jewelers and Precious Stone and Metal Workers	<10	<10	(0)	(8%)	0.4%	\$17.40	High school diploma or equivalent	None	Long-term on-the-job training
51-9111	Packaging and Filling Machine Operators and Tenders	<10	<10	(0)	(6%)	0.4%	\$22.68	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	<10	13	7	139%	3.3%	\$23.25	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9161	Computer Numerically Controlled Tool Operators	<10	<10	3	248%	0.9%	\$24.14	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9191	Adhesive Bonding Machine Operators and Tenders	<10	<10	(0)	(16%)	0.4%	\$21.36	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	<10	<10	(0)	(5%)	0.7%	\$25.21	High school diploma or equivalent	None	Long-term on-the-job training
51-9198	Helpers--Production Workers	<10	<10	0	2%	0.3%	\$19.08	High school diploma or equivalent	None	Short-term on-the-job training
51-9199	Production Workers, All Other	14	<10	(10)	(74%)	1.2%	\$21.17	High school diploma or equivalent	None	Moderate-term on-the-job training

53-7051	Industrial Truck and Tractor Operators	<10	<10	2	255%	0.9%	\$23.39	No formal educational credential	None	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	<10	<10	2	42%	2.9%	\$19.75	No formal educational credential	None	Short-term on-the-job training
53-7063	Machine Feeders and Offbearers	<10	0	(3)	(100%)	0.3%	\$18.67	No formal educational credential	None	Short-term on-the-job training
53-7064	Packers and Packagers, Hand	<10	<10	(1)	(25%)	0.5%	\$17.78	No formal educational credential	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	<10	<10	0	24%	0.4%	\$21.67	High school diploma or equivalent	None	Short-term on-the-job training

Source: Lightcast, City of Bend

Summary:

The *Recreational Goods and Small Appliances; Trailers, Motor Homes, and Appliances Industry Clusters* accounts for less than 1% of Bend's gross domestic product at \$38 million dollars. The industry cluster is anchored by *NAICS Code Travel Trailer and Campier Manufacturing* which employs 36% of the total industry cluster and accounts for 19% overall clusters' economic impact. The industry cluster sells 77% of its products and services outside the Bend area, but only 44% of the industry's demand is met by local suppliers.

The average education and skills level needed to be employed in this cluster is a high school degree with moderate term on the job training. There are local educational institutions that have the capacity to provide the knowledge and skills required.

The proposed cluster name for is **Outdoor Lifestyle and Products**

Food Processing and Manufacturing

Table 21. Food Processing and Manufacturing Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg. Wage/Year
312120	Breweries	Mature	LQ +++ DS --	614	\$59,768
312113	Ice Manufacturing	Growing Base	LQ +++ DS +++	24	\$41,345
311520	Ice Cream and Frozen Dessert Manufacturing	Growing Base	LQ +++ DS +++	27	\$24,303
312140	Distilleries	Growing Base	LQ ++ DS ++	24	\$43,581
311920	Coffee and Tea Manufacturing	Mature	LQ + DS --	22	\$30,399
312130	Wineries	Growing Base	DS + DS +++	42	\$47,983
311340	Nonchocolate Confectionery Manufacturing	Mature	DS + DS ---	10	\$13,349
	Confectionery Manufacturing from Purchased				
311352	Chocolate	Mature	LQ 1 DS ---	12	\$23,735
311821	Cookie and Cracker Manufacturing	Mature	LQ 1 DS ---	11	\$47,487
311919	Other Snack Food Manufacturing	Emerging	LQ -- DS +++	9	-
311111	Dog and Cat Food Manufacturing	Emerging	LQ -- DS +++	4	-
	Chocolate and Confectionery Manufacturing from				
311351	Cacao Beans	Transforming	LQ -- DS -	1	-
327213	Glass Container Manufacturing	D***	D***	1	-
311423	Dried and Dehydrated Food Manufacturing	Transforming	LQ -- DS ---	1	-
312111	Soft Drink Manufacturing	Emerging	LQ --- DS ++	5	-
311999	All Other Miscellaneous Food Manufacturing	D***	D***	2	-
311119	Other Animal Food Manufacturing	D***	D***	1	-
311421	Fruit and Vegetable Canning	D***	D***	1	-
TOTAL				811	\$54,986

Source: Lightcast, City of Bend

Table 22. Food Processing and Manufacturing Labor Analysis

SOC	Description	Employed	Employed	Change	% Change	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
		in Industry Group (2019)	in Industry Group (2023)							
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	103	115	12	12%	12.7%	\$24.50	High school diploma or equivalent	None	Moderate-term on-the-job training
35-3011	Bartenders	41	84	43	104%	9.7%	\$16.45	No formal educational credential	None	Short-term on-the-job training
51-9111	Packaging and Filling Machine Operators and Tenders	99	84	(15)	(15%)	9.1%	\$22.68	High school diploma or equivalent	None	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	42	42	(0)	(1%)	4.1%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training
35-3031	Waiters and Waitresses	27	30	4	14%	3.1%	\$15.91	No formal educational credential	None	Short-term on-the-job training
53-7051	Industrial Truck and Tractor Operators	17	21	4	24%	2.8%	\$23.39	No formal educational credential	None	Short-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	24	27	3	12%	2.8%	\$31.65	High school diploma or equivalent	Less than 5 years	None
41-9011	Demonstrators and Product Promoters	32	30	(2)	(6%)	2.7%	\$18.37	No formal educational credential	None	Short-term on-the-job training
41-2031	Retail Salespersons	33	29	(4)	(13%)	2.7%	\$17.84	No formal educational credential	None	Short-term on-the-job training
51-3092	Food Batchmakers	35	25	(10)	(28%)	2.7%	\$18.00	High school diploma or equivalent	None	Moderate-term on-the-job training
11-1021	General and Operations Managers	25	24	(1)	(2%)	2.3%	\$43.51	Bachelor's degree	5 years or more	None
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	16	19	3	18%	2.2%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	20	22	1	6%	2.1%	\$19.75	No formal educational credential	None	Short-term on-the-job training
35-2014	Cooks, Restaurant	<10	17	8	88%	1.9%	\$18.74	No formal educational credential	Less than 5 years	Moderate-term on-the-job training
49-9071	Maintenance and Repair Workers, General	12	14	2	16%	1.6%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
27-1026	Merchandise Displayers and Window Trimmers	14	16	2	12%	1.6%	\$19.19	High school diploma or equivalent	None	Short-term on-the-job training

53-3031	Driver/Sales Workers	27	13	(14)	(52%)	1.4%	\$17.88	High school diploma or equivalent	None	Short-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	10	12	1	12%	1.4%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	12	14	2	13%	1.4%	\$30.44	Postsecondary nondegree award	None	Short-term on-the-job training
49-9041	Industrial Machinery Mechanics	16	12	(5)	(29%)	1.4%	\$31.17	High school diploma or equivalent	None	Long-term on-the-job training
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	<10	12	5	64%	1.3%	\$21.77	High school diploma or equivalent	Less than 5 years	None
11-3051	Industrial Production Managers	<10	<10	(0)	(3%)	1.1%	\$46.37	Bachelor's degree	5 years or more	None
11-1011	Chief Executives	<10	<10	1	314%	0.2%	\$50.79	Bachelor's degree	5 years or more	None
11-2021	Marketing Managers	<10	<10	0	0%	0.3%	\$54.47	Bachelor's degree	5 years or more	None
11-2022	Sales Managers	<10	<10	(1)	(10%)	0.5%	\$54.84	Bachelor's degree	Less than 5 years	None
11-3013	Facilities Managers	<10	<10	1	55%	0.2%	\$49.25	Bachelor's degree	Less than 5 years	None
11-3031	Financial Managers	<10	<10	(0)	(21%)	0.1%	\$63.64	Bachelor's degree	5 years or more	None
11-3071	Transportation, Storage, and Distribution Managers	<10	<10	1	37%	0.3%	\$39.61	High school diploma or equivalent	5 years or more	None
11-3121	Human Resources Managers	<10	<10	0	15%	0.1%	\$65.46	Bachelor's degree	5 years or more	None
11-9013	Farmers, Ranchers, and Other Agricultural Managers	<10	<10	0	14%	0.0%	\$16.41	High school diploma or equivalent	5 years or more	None
11-9051	Food Service Managers	<10	<10	1	66%	0.2%	\$29.92	High school diploma or equivalent	Less than 5 years	None
11-9199	Managers, All Other	<10	<10	2	29%	0.9%	\$33.54	Bachelor's degree	Less than 5 years	None
13-1028	Buyers and Purchasing Agents	<10	<10	0	17%	0.3%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1051	Cost Estimators	0	0	0	0%	0.1%	\$36.59	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	<10	<10	1	27%	0.3%	\$33.07	Bachelor's degree	None	None
13-1081	Logisticians	<10	<10	0	18%	0.2%	\$40.13	Bachelor's degree	None	None
13-1082	Project Management Specialists	0	<10	1	161197%	0.1%	\$42.30	Bachelor's degree	None	None
13-1121	Meeting, Convention, and Event Planners	<10	<10	0	5%	0.5%	\$27.62	Bachelor's degree	None	None
13-1161	Market Research Analysts and Marketing Specialists	<10	<10	2	32%	1.0%	\$36.53	Bachelor's degree	None	None
13-1199	Business Operations Specialists, All Other	<10	<10	2	151%	0.4%	\$30.68	Bachelor's degree	None	None
13-2011	Accountants and Auditors	<10	<10	1	18%	0.5%	\$39.34	Bachelor's degree	None	None

17-2112	Industrial Engineers	<10	<10	(0)	(6%)	0.3%	\$44.25	Bachelor's degree	None	None
19-1012	Food Scientists and Technologists	<10	<10	(0)	(19%)	0.2%	\$38.57	Bachelor's degree	None	None
19-4012	Agricultural Technicians	<10	<10	(2)	(59%)	0.2%	\$18.52	Associate's degree	None	Moderate-term on-the-job training
19-4013	Food Science Technicians	0	<10	4	30666%	0.4%	\$26.09	Associate's degree	None	Moderate-term on-the-job training
19-4031	Chemical Technicians	0	<10	2	Insf. Data	0.1%	\$24.12	Associate's degree	None	Moderate-term on-the-job training
19-5011	Occupational Health and Safety Specialists	<10	<10	0	20%	0.1%	\$39.99	Bachelor's degree	None	None
27-3031	Public Relations Specialists	<10	<10	0	18%	0.1%	\$30.12	Bachelor's degree	None	None
35-1011	Chefs and Head Cooks	<10	<10	2	94%	0.4%	\$27.86	High school diploma or equivalent	5 years or more	None
35-2012	Cooks, Institution and Cafeteria	0	0	0	767%	0.0%	\$19.76	No formal educational credential	None	Short-term on-the-job training
35-2015	Cooks, Short Order	<10	<10	2	83%	0.4%	\$15.89	No formal educational credential	None	Short-term on-the-job training
35-2021	Food Preparation Workers	<10	<10	2	39%	0.9%	\$17.78	No formal educational credential	None	Short-term on-the-job training
35-3023	Fast Food and Counter Workers	<10	<10	1	14%	0.6%	\$16.84	No formal educational credential	None	Short-term on-the-job training
35-3041	Food Servers, Nonrestaurant	<10	<10	(0)	(21%)	0.1%	\$18.21	No formal educational credential	None	Short-term on-the-job training
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	<10	<10	1	43%	0.5%	\$15.62	No formal educational credential	None	Short-term on-the-job training
35-9021	Dishwashers	<10	<10	0	12%	0.4%	\$17.09	No formal educational credential	None	Short-term on-the-job training
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	<10	<10	1	33%	0.5%	\$15.41	No formal educational credential	None	Short-term on-the-job training
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<10	<10	(1)	(23%)	0.5%	\$19.01	No formal educational credential	None	Short-term on-the-job training
37-3011	Landscaping and Groundskeeping Workers	<10	<10	(0)	(8%)	0.2%	\$20.55	No formal educational credential	None	Short-term on-the-job training
39-7018	Tour and Travel Guides	<10	<10	(2)	(34%)	0.3%	\$18.29	High school diploma or equivalent	None	Moderate-term on-the-job training
41-1011	First-Line Supervisors of Retail Sales Workers	<10	<10	0	12%	0.3%	\$23.27	High school diploma or equivalent	Less than 5 years	None

41-1012	First-Line Supervisors of Non-Retail Sales Workers	<10	<10	1	28%	0.4%	\$32.92	High school diploma or equivalent	Less than 5 years	None
41-2011	Cashiers	<10	<10	0	11%	0.4%	\$17.40	No formal educational credential	None	Short-term on-the-job training
41-9099	Sales and Related Workers, All Other	<10	<10	(0)	(15%)	0.2%	\$18.66	High school diploma or equivalent	None	None
43-1011	First-Line Supervisors of Office and Administrative Support Workers	<10	<10	(1)	(29%)	0.2%	\$32.82	High school diploma or equivalent	Less than 5 years	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	11	<10	(2)	(16%)	0.8%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training
43-3051	Payroll and Timekeeping Clerks	<10	0	(1)	(100%)	0.1%	\$27.54	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4051	Customer Service Representatives	<10	<10	(0)	(3%)	0.4%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training
43-4151	Order Clerks	0	<10	2	38809%	0.1%	\$27.01	Some college, no degree	None	Short-term on-the-job training
43-5032	Dispatchers, Except Police, Fire, and Ambulance	<10	<10	0	32%	0.1%	\$24.06	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	<10	<10	(3)	(53%)	0.3%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	<10	<10	0	2%	0.2%	\$23.52	High school diploma or equivalent	None	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<10	<10	(1)	(23%)	0.5%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-9061	Office Clerks, General	<10	<10	(4)	(43%)	0.5%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	0	<10	3	Insf. Data	0.4%	\$22.68	High school diploma or equivalent	Less than 5 years	None
45-2091	Agricultural Equipment Operators	0	<10	2	25611%	0.3%	\$17.52	No formal educational credential	None	Moderate-term on-the-job training
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	10	13	3	25%	0.9%	\$16.92	No formal educational credential	None	Short-term on-the-job training
45-3031	Fishing and Hunting Workers	0	<10	0	205%	0.0%	\$22.15	No formal educational credential	None	Moderate-term on-the-job training
47-2111	Electricians	<10	<10	(2)	(53%)	0.2%	\$36.40	High school diploma or equivalent	None	Apprenticeship
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	<10	<10	1	58%	0.4%	\$38.09	High school diploma or equivalent	Less than 5 years	None
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	<10	<10	(1)	(20%)	0.2%	\$30.09	High school diploma or equivalent	None	Long-term on-the-job training
49-9043	Maintenance Workers, Machinery	<10	<10	0	1%	0.7%	\$36.20	High school diploma or equivalent	None	Long-term on-the-job training
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	<10	<10	3	148%	0.5%	\$29.70	High school diploma or equivalent	None	Short-term on-the-job training

49-9099	Installation, Maintenance, and Repair Workers, All Other	<10	<10	(0)	(9%)	0.2%	\$24.20	High school diploma or equivalent No formal educational credential	None	Moderate-term on-the-job training
51-3011	Bakers	<10	<10	2	32%	0.7%	\$17.58	High school diploma or equivalent No formal educational credential	None	Long-term on-the-job training
51-3093	Food Cooking Machine Operators and Tenders	<10	<10	0	0%	0.1%	\$19.22	High school diploma or equivalent No formal educational credential	None	Moderate-term on-the-job training
51-3099	Food Processing Workers, All Other	<10	<10	0	7%	0.3%	\$17.95	High school diploma or equivalent No formal educational credential	None	Moderate-term on-the-job training
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	0	0	0	0%	0.1%	\$20.48	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4041	Machinists	<10	<10	(1)	(54%)	0.1%	\$29.40	High school diploma or equivalent	None	Long-term on-the-job training
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	<10	0	(1)	(100%)	0.1%	\$17.78	High school diploma or equivalent	None	Moderate-term on-the-job training
51-8021	Stationary Engineers and Boiler Operators	<10	0	(2)	(100%)	0.1%	\$30.13	High school diploma or equivalent	None	Long-term on-the-job training
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	<10	<10	(0)	(10%)	0.7%	\$27.80	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	0	0	0	Insf. Data	0.1%	\$23.25	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9198	Helpers--Production Workers	10	<10	(5)	(53%)	0.4%	\$19.08	High school diploma or equivalent	None	Short-term on-the-job training
51-9199	Production Workers, All Other	15	<10	(14)	(96%)	0.2%	\$21.17	High school diploma or equivalent	None	Moderate-term on-the-job training
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	<10	<10	1	18%	0.7%	\$27.72	High school diploma or equivalent	Less than 5 years	None
53-3033	Light Truck Drivers	11	<10	(4)	(36%)	0.7%	\$22.01	High school diploma or equivalent No formal educational credential	None	Short-term on-the-job training
53-7061	Cleaners of Vehicles and Equipment	<10	<10	1	16%	0.6%	\$18.00	No formal educational credential	None	Short-term on-the-job training
53-7063	Machine Feeders and Offbearers	<10	<10	(6)	(58%)	0.4%	\$18.67	No formal educational credential	None	Short-term on-the-job training
53-7064	Packers and Packagers, Hand	<10	<10	1	6%	1.0%	\$17.78	No formal educational credential	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	<10	<10	2	36%	0.9%	\$21.67	High school diploma or equivalent	None	Short-term on-the-job training

Source: Lightcast, City of Bend

Summary:

The *Food and Beverage Manufacturing Cluster* accounts for 2% of Bend's gross domestic product at \$188 million dollars. The industry cluster is anchored by *NAICS 312120 Breweries* which employs 75% of the total industry cluster and accounts for 74% overall clusters economic impact. The industry cluster sells 82% of its products and services outside the Bend area, but only 24% of the industry's demand is met by local suppliers.

The average education and skills level needed to be employed in this cluster is a high school diploma or less with short and moderate term on the job training. There are local educational institutions that have the capacity to provide the knowledge and skills required.

The proposed cluster name for *Food and Beverage Manufacturing* is **Craft Beverages**.

Hospitality and Tourism

Table 23. Hospitality and Tourism Firm Analysis

NAICS Code	Description	Quadrant Location	Quadrant Strength	Employment	Avg.Wage/Year
459920	Art Dealers	Emerging	LQ 1 DS ++	9	
532284	Recreational Goods Rental	Emerging	LQ 1 DS +++	6	\$17,090
561510	Travel Agencies	Transforming	LQ -- DS ++	19	\$113,146
561520	Tour Operators	Growing	LQ +++ DS +++	35	\$79,432
561591	Convention and Visitors Bureaus	Growing	LQ +++ DS +++	13	\$42,843
561599	All Other Travel Arrangement and Reservation Services	Growing	LQ +++ DS +++	89	\$87,924
711211	Sports Teams and Clubs	Emerging	LQ --- DS +++	2	\$39,750
711219	Other Spectator Sports		D***	D***	
712110	Museums	Emerging	LQ --- DS +++	6	\$32,689
712190	Nature Parks and Other Similar Institutions	Growing	LQ +++ DS +++	19	\$66,239
713120	Amusement Arcades	Emerging	LQ --- DS +++	3	\$20,788
713290	Other Gambling Industries	Transforming	LQ --- DS --	9	\$192,556
713990	All Other Amusement and Recreation Industries	Transforming	LQ -- DS ---	249	\$24,860
721110	Hotels (except Casino Hotels) and Motels	Growing	LQ +++ DS 0	868	\$39,459
721191	Bed-and-Breakfast Inns	Transforming	LQ -- DS --	3	\$13,357
721199	All Other Traveler Accommodation	Growing	LQ +++ DS +++	20	\$28,576
	TOTAL			1,350	\$43,170

Source: Lightcast, City of Bend

Table 24. Hospitality and Tourism Labor Analysis

SOC	Description	Employed in Industry Group (2019)	Employed in Industry Group (2023)	Change (2019 - 2023)	% Change (2019 - 2023)	% of Total Jobs in Industry Group (2024)		Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
						Median Hourly Earnings	Typical Entry Level Education			
37-2012	Maids and Housekeeping Cleaners	406	318	(88)	(22%)	12.9%	\$17.38	No formal educational credential	None	Short-term on-the-job training
43-4081	Hotel, Motel, and Resort Desk Clerks	185	170	(15)	(8%)	7.1%	\$17.62	High school diploma or equivalent	None	Short-term on-the-job training
39-3091	Amusement and Recreation Attendants	190	131	(59)	(31%)	6.0%	\$16.76	No formal educational credential	None	Short-term on-the-job training
35-3031	Waiters and Waitresses	160	97	(63)	(40%)	4.6%	\$15.91	No formal educational credential	None	Short-term on-the-job training
49-9071	Maintenance and Repair Workers, General	77	80	3	4%	3.4%	\$23.92	High school diploma or equivalent	None	Moderate-term on-the-job training
37-3011	Landscaping and Groundskeeping Workers	116	77	(40)	(34%)	3.3%	\$20.55	No formal educational credential	None	Short-term on-the-job training
35-2014	Cooks, Restaurant	86	67	(19)	(22%)	3.1%	\$18.74	No formal educational credential	Less than 5 years	Moderate-term on-the-job training
35-3011	Bartenders	54	52	(2)	(3%)	2.6%	\$16.45	No formal educational credential	None	Short-term on-the-job training
41-3041	Travel Agents	48	59	11	23%	2.4%	\$23.79	High school diploma or equivalent	None	Moderate-term on-the-job training
11-1021	General and Operations Managers	63	62	(1)	(1%)	2.3%	\$43.51	Bachelor's degree	5 years or more	None
39-9031	Exercise Trainers and Group Fitness Instructors	48	50	1	3%	2.3%	\$25.51	High school diploma or equivalent	None	Short-term on-the-job training
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	33	44	11	34%	1.9%	\$25.34	High school diploma or equivalent	Less than 5 years	None
11-9081	Lodging Managers	44	40	(4)	(10%)	1.8%	\$32.26	High school diploma or equivalent	Less than 5 years	None
39-9099	Personal Care and Service Workers, All Other	32	28	(4)	(11%)	1.6%	\$18.18	High school diploma or equivalent	None	Short-term on-the-job training
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	49	31	(18)	(36%)	1.5%	\$15.62	No formal educational credential	None	Short-term on-the-job training
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	39	31	(9)	(22%)	1.4%	\$19.01	No formal educational credential	None	Short-term on-the-job training
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	21	29	9	41%	1.4%	\$18.16	High school diploma or equivalent	None	Short-term on-the-job training
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	38	30	(9)	(23%)	1.3%	\$21.77	High school diploma or equivalent	Less than 5 years	None
43-3031	Bookkeeping, Accounting, and Auditing Clerks	37	36	(1)	(3%)	1.3%	\$23.83	Some college, no degree	None	Moderate-term on-the-job training

35-3023	Fast Food and Counter Workers	59	29	(30)	(51%)	1.3%	\$16.84	No formal educational credential	None	Short-term on-the-job training
35-1011	Chefs and Head Cooks	18	25	8	43%	1.2%	\$27.86	High school diploma or equivalent	5 years or more	None
43-1011	First-Line Supervisors of Office and Administrative Support Workers	26	30	5	18%	1.2%	\$32.82	High school diploma or equivalent	Less than 5 years	None
41-2031	Retail Salespersons	35	29	(6)	(17%)	1.2%	\$17.84	No formal educational credential	None	Short-term on-the-job training
39-7018	Tour and Travel Guides	50	29	(21)	(42%)	1.1%	\$18.29	High school diploma or equivalent	None	Moderate-term on-the-job training
51-6011	Laundry and Dry-Cleaning Workers	31	23	(9)	(27%)	1.1%	\$16.96	No formal educational credential	None	Short-term on-the-job training
35-9021	Dishwashers	37	22	(15)	(41%)	1.0%	\$17.09	No formal educational credential	None	Short-term on-the-job training
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	20	23	3	17%	1.0%	\$29.39	High school diploma or equivalent	None	Moderate-term on-the-job training
27-2022	Coaches and Scouts	42	27	(15)	(35%)	1.0%	\$21.32	Bachelor's degree	None	None
31-9011	Massage Therapists	17	23	6	33%	1.0%	\$39.59	Postsecondary nondegree award	None	None
35-2021	Food Preparation Workers	12	14	2	14%	0.8%	\$17.78	No formal educational credential	None	Short-term on-the-job training
11-9051	Food Service Managers	11	16	5	49%	0.8%	\$29.92	High school diploma or equivalent	Less than 5 years	None
35-3041	Food Servers, Nonrestaurant	29	19	(10)	(35%)	0.7%	\$18.21	No formal educational credential	None	Short-term on-the-job training
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	17	16	(1)	(5%)	0.7%	\$15.41	No formal educational credential	None	Short-term on-the-job training
11-9199	Managers, All Other	13	17	4	30%	0.7%	\$33.54	Bachelor's degree	Less than 5 years	None
11-9072	Entertainment and Recreation Managers, Except Gambling	<10	14	8	123%	0.7%	\$35.34	Bachelor's degree	Less than 5 years	None
41-2011	Cashiers	23	16	(7)	(30%)	0.7%	\$17.40	No formal educational credential	None	Short-term on-the-job training
39-1014	First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services	<10	15	9	143%	0.6%	\$24.32	High school diploma or equivalent	Less than 5 years	None
43-9061	Office Clerks, General	22	14	(9)	(38%)	0.6%	\$22.94	High school diploma or equivalent	None	Short-term on-the-job training
43-4051	Customer Service Representatives	15	16	2	11%	0.6%	\$22.31	High school diploma or equivalent	None	Short-term on-the-job training
13-1121	Meeting, Convention, and Event Planners	14	12	(1)	(11%)	0.6%	\$27.62	Bachelor's degree	None	None
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	17	13	(4)	(24%)	0.6%	\$17.32	No formal educational credential	None	Short-term on-the-job training

43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	16	13	(3)	(16%)	0.6%	\$24.29	High school diploma or equivalent	None	Short-term on-the-job training
43-4171	Receptionists and Information Clerks	13	13	(0)	(3%)	0.6%	\$18.93	High school diploma or equivalent	None	Short-term on-the-job training
13-2011	Accountants and Auditors	<10	13	5	63%	0.5%	\$39.34	Bachelor's degree	None	None
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	<10	12	4	59%	0.5%	\$38.09	High school diploma or equivalent	Less than 5 years	None
35-2012	Cooks, Institution and Cafeteria	<10	<10	(0)	(3%)	0.5%	\$19.76	No formal educational credential	None	Short-term on-the-job training
39-6011	Baggage Porters and Bellhops	<10	13	13	2040%	0.5%	\$20.74	High school diploma or equivalent	None	Short-term on-the-job training
33-9032	Security Guards	<10	<10	2	31%	0.5%	\$19.65	High school diploma or equivalent	None	Short-term on-the-job training
41-2021	Counter and Rental Clerks	19	11	(8)	(42%)	0.5%	\$20.53	No formal educational credential	None	Short-term on-the-job training
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	15	11	(3)	(23%)	0.5%	\$27.48	High school diploma or equivalent	Less than 5 years	None
25-3021	Self-Enrichment Teachers	11	<10	(2)	(20%)	0.5%	\$21.49	High school diploma or equivalent	Less than 5 years	None
13-1161	Market Research Analysts and Marketing Specialists	<10	12	5	75%	0.5%	\$36.53	Bachelor's degree	None	None
39-9032	Recreation Workers	27	12	(15)	(57%)	0.5%	\$18.96	High school diploma or equivalent	None	Short-term on-the-job training
11-1011	Chief Executives	<10	<10	0	25%	0.1%	\$50.79	Bachelor's degree	5 years or more	None
11-2021	Marketing Managers	<10	<10	2	102%	0.2%	\$54.47	Bachelor's degree	5 years or more	None
11-2022	Sales Managers	<10	10	4	52%	0.4%	\$54.84	Bachelor's degree	Less than 5 years	None
11-2032	Public Relations Managers	0	<10	1	4504%	0.0%	\$54.70	Bachelor's degree	5 years or more	None
11-3012	Administrative Services Managers	<10	<10	0	21%	0.1%	\$49.33	Bachelor's degree	Less than 5 years	None
11-3013	Facilities Managers	<10	<10	5	95%	0.4%	\$49.25	Bachelor's degree	Less than 5 years	None
11-3021	Computer and Information Systems Managers	0	<10	2	1325%	0.1%	\$78.94	Bachelor's degree	5 years or more	None
11-3031	Financial Managers	<10	<10	0	13%	0.2%	\$63.64	Bachelor's degree	5 years or more	None
11-3121	Human Resources Managers	<10	<10	1	52%	0.1%	\$65.46	Bachelor's degree	5 years or more	None
11-9071	Gambling Managers	0	<10	0	6%	0.0%	\$20.42	High school diploma or equivalent	Less than 5 years	None
11-9141	Property, Real Estate, and Community Association Managers	<10	<10	0	20%	0.0%	\$35.52	High school diploma or equivalent	Less than 5 years	None
11-9179	Personal Service Managers, All Other	<10	<10	1	63%	0.2%	\$11.41	Bachelor's degree	Less than 5 years	None

13-1028	Buyers and Purchasing Agents	<10	<10	1	64%	0.1%	\$30.34	Bachelor's degree	None	Moderate-term on-the-job training
13-1071	Human Resources Specialists	<10	<10	3	77%	0.4%	\$33.07	Bachelor's degree	None	None
13-1082	Project Management Specialists	0	<10	2	837%	0.1%	\$42.30	Bachelor's degree	None	None
13-1131	Fundraisers	<10	<10	(1)	(55%)	0.0%	\$30.55	Bachelor's degree	None	None
13-1151	Training and Development Specialists	0	<10	1	2238%	0.1%	\$32.32	Bachelor's degree	Less than 5 years	None
13-1199	Business Operations Specialists, All Other	<10	<10	6	194%	0.3%	\$30.68	Bachelor's degree	None	None
13-2051	Financial and Investment Analysts	0	<10	0	3637%	0.0%	\$40.52	Bachelor's degree	None	None
15-1211	Computer Systems Analysts	0	<10	1	5857%	0.0%	\$50.24	Bachelor's degree	None	None
15-1232	Computer User Support Specialists	<10	<10	2	325%	0.1%	\$29.13	Some college, no degree	None	None
15-1244	Network and Computer Systems Administrators	<10	<10	1	207%	0.1%	\$49.20	Bachelor's degree	None	None
15-1252	Software Developers	0	<10	2	1646%	0.1%	\$61.04	Bachelor's degree	None	None
15-1299	Computer Occupations, All Other	0	<10	0	273%	0.0%	\$35.12	Bachelor's degree	None	None
17-2051	Civil Engineers	0	<10	1	3138%	0.0%	\$47.84	Bachelor's degree	None	None
19-4071	Forest and Conservation Technicians	<10	<10	(0)	(11%)	0.0%	\$28.84	Associate's degree	None	None
25-4012	Curators	<10	<10	1	310%	0.1%	\$23.48	Master's degree	None	None
25-4013	Museum Technicians and Conservators	<10	<10	1	333%	0.1%	\$21.95	Bachelor's degree	None	None
25-9099	Educational Instruction and Library Workers, All Other	<10	<10	(1)	(70%)	0.0%	\$15.77	Bachelor's degree	None	None
27-1011	Art Directors	<10	<10	(1)	(67%)	0.0%	\$35.93	Bachelor's degree	5 years or more	None
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	<10	<10	(2)	(83%)	0.0%	\$8.20	Bachelor's degree	None	Long-term on-the-job training
27-1014	Special Effects Artists and Animators	<10	<10	(1)	(52%)	0.0%	\$24.96	Bachelor's degree	None	None
27-1019	Artists and Related Workers, All Other	0	<10	1	2389%	0.0%	\$21.11	No formal educational credential	None	Long-term on-the-job training
27-2011	Actors	<10	0	(1)	(84%)	0.0%	\$25.03	Some college, no degree	None	Long-term on-the-job training
27-2021	Athletes and Sports Competitors	<10	<10	1	25%	0.3%	\$26.17	No formal educational credential	None	Long-term on-the-job training
27-2023	Umpires, Referees, and Other Sports Officials	10	<10	(0)	(4%)	0.4%	\$20.60	High school diploma or equivalent	None	Moderate-term on-the-job training
27-2031	Dancers	<10	<10	(1)	(79%)	0.0%	\$20.60	No formal educational credential	None	Long-term on-the-job training
27-2042	Musicians and Singers	<10	<10	(1)	(53%)	0.0%	\$27.93	No formal educational credential	None	Long-term on-the-job training

27-2091	Disc Jockeys, Except Radio	<10	<10	1	307%	0.0%	\$21.71	No formal educational credential	None	Short-term on-the-job training
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	<10	<10	(0)	(16%)	0.0%	\$18.94	No formal educational credential	None	Short-term on-the-job training
27-3031	Public Relations Specialists	<10	<10	1	61%	0.1%	\$30.12	Bachelor's degree	None	None
27-3043	Writers and Authors	<10	<10	(2)	(79%)	0.0%	\$20.01	Bachelor's degree	None	Long-term on-the-job training
27-4011	Audio and Video Technicians	<10	<10	(1)	(75%)	0.0%	\$25.66	Postsecondary nondegree award	None	Short-term on-the-job training
29-9091	Athletic Trainers	<10	<10	0	8%	0.0%	\$24.05	Bachelor's degree	None	None
33-1091	First-Line Supervisors of Security Workers	<10	<10	1	91%	0.1%	\$32.46	High school diploma or equivalent	Less than 5 years	None
33-1099	First-Line Supervisors of Protective Service Workers, All Other	0	<10	2	Insf. Data	0.1%	\$47.99	High school diploma or equivalent	Less than 5 years	None
33-3051	Police and Sheriff's Patrol Officers	<10	<10	0	28%	0.0%	\$47.51	High school diploma or equivalent	None	Moderate-term on-the-job training
33-9099	Protective Service Workers, All Other	<10	<10	(0)	(25%)	0.0%	\$22.08	High school diploma or equivalent	None	Short-term on-the-job training
35-2011	Cooks, Fast Food	<10	<10	(1)	(62%)	0.0%	\$16.21	No formal educational credential	None	Short-term on-the-job training
35-2015	Cooks, Short Order	24	13	(12)	(48%)	0.4%	\$15.89	No formal educational credential	None	Short-term on-the-job training
35-2019	Cooks, All Other	<10	<10	(3)	(46%)	0.1%	\$20.66	No formal educational credential	None	Moderate-term on-the-job training
35-9099	Food Preparation and Serving Related Workers, All Other	<10	<10	(1)	(43%)	0.1%	\$19.25	No formal educational credential	None	Short-term on-the-job training
37-2019	Building Cleaning Workers, All Other	0	<10	1	Insf. Data	0.0%	\$18.96	No formal educational credential	None	Short-term on-the-job training
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	<10	<10	(0)	(36%)	0.0%	\$26.15	High school diploma or equivalent	None	Moderate-term on-the-job training
37-3019	Grounds Maintenance Workers, All Other	<10	<10	(1)	(14%)	0.2%	\$23.08	No formal educational credential	None	Short-term on-the-job training
39-1022	First-Line Supervisors of Personal Service Workers	<10	<10	0	10%	0.2%	\$23.82	High school diploma or equivalent	Less than 5 years	None
39-2011	Animal Trainers	<10	<10	(2)	(46%)	0.1%	\$18.46	High school diploma or equivalent	None	Moderate-term on-the-job training
39-2021	Animal Caretakers	<10	<10	(2)	(29%)	0.3%	\$17.07	High school diploma or equivalent	None	Short-term on-the-job training
39-3011	Gambling Dealers	<10	<10	(0)	(20%)	0.1%	\$15.62	High school diploma or equivalent	None	Short-term on-the-job training
39-3012	Gambling and Sports Book Writers and Runners	<10	<10	(0)	(17%)	0.0%	\$13.21	High school diploma or equivalent	None	Short-term on-the-job training
39-3019	Gambling Service Workers, All Other	<10	<10	0	9%	0.0%	\$14.86	High school diploma or equivalent	None	Short-term on-the-job training
39-3031	Ushers, Lobby Attendants, and Ticket Takers	<10	<10	(2)	(62%)	0.1%	\$14.66	No formal educational credential	None	Short-term on-the-job training

39-3093	Locker Room, Coatroom, and Dressing Room Attendants	<10	<10	(0)	(2%)	0.2%	\$18.81	High school diploma or equivalent	None	Short-term on-the-job training
39-3099	Entertainment Attendants and Related Workers, All Other	0	<10	1	13797%	0.0%	\$16.20	High school diploma or equivalent	None	Short-term on-the-job training
39-5011	Barbers	0	0	0	Insf. Data	0.0%	\$16.15	Postsecondary nondegree award	None	None
39-5012	Hairdressers, Hairstylists, and Cosmetologists	<10	<10	(0)	(3%)	0.0%	\$16.11	Postsecondary nondegree award	None	None
39-5092	Manicurists and Pedicurists	<10	<10	1	39%	0.1%	\$17.49	Postsecondary nondegree award	None	None
39-5094	Skincare Specialists	<10	<10	0	9%	0.2%	\$26.49	Postsecondary nondegree award	None	None
39-6012	Concierges	14	<10	(9)	(68%)	0.2%	\$22.19	High school diploma or equivalent	None	Moderate-term on-the-job training
39-9011	Childcare Workers	<10	<10	(1)	(49%)	0.0%	\$16.56	High school diploma or equivalent	None	Short-term on-the-job training
41-1011	First-Line Supervisors of Retail Sales Workers	<10	<10	0	0%	0.3%	\$23.27	High school diploma or equivalent	Less than 5 years	None
41-1012	First-Line Supervisors of Non-Retail Sales Workers	<10	<10	1	34%	0.2%	\$32.92	High school diploma or equivalent	Less than 5 years	None
41-2012	Gambling Change Persons and Booth Cashiers	<10	<10	1	222%	0.0%	\$21.33	No formal educational credential	None	Short-term on-the-job training
41-3021	Insurance Sales Agents	0	<10	2	10848%	0.1%	\$19.68	High school diploma or equivalent	None	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	<10	<10	(0)	(22%)	0.0%	\$31.04	High school diploma or equivalent	None	Moderate-term on-the-job training
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	<10	<10	0	14%	0.0%	\$13.93	No formal educational credential	None	Short-term on-the-job training
41-9099	Sales and Related Workers, All Other	<10	<10	(1)	(68%)	0.0%	\$18.66	High school diploma or equivalent	None	None
43-2011	Switchboard Operators, Including Answering Service	<10	<10	(1)	(18%)	0.1%	\$24.18	High school diploma or equivalent	None	Short-term on-the-job training
43-3051	Payroll and Timekeeping Clerks	<10	<10	0	23%	0.1%	\$27.54	High school diploma or equivalent	None	Moderate-term on-the-job training
43-3061	Procurement Clerks	<10	<10	(0)	(33%)	0.0%	\$27.17	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	<10	<10	(0)	(3%)	0.0%	\$25.11	Associate's degree	None	None
43-5032	Dispatchers, Except Police, Fire, and Ambulance	<10	<10	0	11%	0.0%	\$24.06	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	0	<10	0	599%	0.0%	\$25.35	High school diploma or equivalent	None	Moderate-term on-the-job training
43-5071	Shipping, Receiving, and Inventory Clerks	<10	<10	1	60%	0.1%	\$22.46	High school diploma or equivalent	None	Short-term on-the-job training

43-6011	Executive Secretaries and Executive Administrative Assistants	<10	<10	(0)	(7%)	0.1%	\$32.27	High school diploma or equivalent	Less than 5 years	None
43-9199	Office and Administrative Support Workers, All Other	<10	<10	0	26%	0.1%	\$22.74	High school diploma or equivalent	None	Short-term on-the-job training
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	0	0	(0)	(76%)	0.0%	\$22.68	High school diploma or equivalent	Less than 5 years	None
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	0	0	(0)	(4%)	0.0%	\$16.93	No formal educational credential	None	Short-term on-the-job training
45-3031	Fishing and Hunting Workers	<10	<10	(1)	(42%)	0.1%	\$22.15	No formal educational credential	None	Moderate-term on-the-job training
47-2031	Carpenters	<10	<10	(0)	(25%)	0.1%	\$28.37	High school diploma or equivalent	None	Apprenticeship
47-2073	Operating Engineers and Other Construction Equipment Operators	<10	<10	(0)	(32%)	0.0%	\$30.70	High school diploma or equivalent	None	Moderate-term on-the-job training
47-2111	Electricians	<10	<10	(0)	(12%)	0.0%	\$36.40	High school diploma or equivalent	None	Apprenticeship
47-2141	Painters, Construction and Maintenance	<10	<10	0	13%	0.1%	\$23.39	No formal educational credential	None	Moderate-term on-the-job training
49-3023	Automotive Service Technicians and Mechanics	<10	<10	1	90%	0.1%	\$25.06	Postsecondary nondegree award	None	Short-term on-the-job training
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	<10	<10	(0)	(32%)	0.0%	\$35.93	High school diploma or equivalent	None	Long-term on-the-job training
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	<10	<10	1	25%	0.3%	\$25.25	High school diploma or equivalent	None	Moderate-term on-the-job training
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	<10	<10	0	12%	0.0%	\$29.93	Postsecondary nondegree award	None	Long-term on-the-job training
49-9062	Medical Equipment Repairers	0	0	0	79%	0.0%	\$28.97	Associate's degree	None	Moderate-term on-the-job training
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	<10	<10	(1)	(47%)	0.1%	\$29.70	High school diploma or equivalent	None	Short-term on-the-job training
49-9098	Helpers—Installation, Maintenance, and Repair Workers	0	<10	1	Insf. Data	0.0%	\$21.56	High school diploma or equivalent	None	Short-term on-the-job training
49-9099	Installation, Maintenance, and Repair Workers, All Other	<10	<10	(1)	(18%)	0.3%	\$24.20	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	<10	<10	1	106%	0.1%	\$31.65	High school diploma or equivalent	Less than 5 years	None
51-3011	Bakers	<10	<10	(0)	(3%)	0.2%	\$17.58	No formal educational credential	None	Long-term on-the-job training
51-6031	Sewing Machine Operators	0	0	(0)	(56%)	0.0%	\$19.37	No formal educational credential	None	Short-term on-the-job training
51-8021	Stationary Engineers and Boiler Operators	0	<10	7	6565%	0.2%	\$30.13	High school diploma or equivalent	None	Long-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	0	<10	1	921%	0.0%	\$23.47	High school diploma or equivalent	None	Moderate-term on-the-job training

51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	0	0	(0)	(72%)	0.0%	\$23.25	High school diploma or equivalent	None	Moderate-term on-the-job training
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	<10	<10	1	63%	0.1%	\$27.72	High school diploma or equivalent	Less than 5 years	None
53-3031	Driver/Sales Workers	<10	0	(0)	(58%)	0.0%	\$17.88	High school diploma or equivalent	None	Short-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	<10	<10	(0)	(24%)	0.0%	\$30.44	Postsecondary nondegree award	None	Short-term on-the-job training
53-3033	Light Truck Drivers	<10	<10	1	66%	0.1%	\$22.01	High school diploma or equivalent	None	Short-term on-the-job training
53-3052	Bus Drivers, Transit and Intercity	0	<10	1	1745%	0.0%	\$25.06	High school diploma or equivalent	None	Moderate-term on-the-job training
53-3053	Shuttle Drivers and Chauffeurs	<10	<10	(0)	(1%)	0.3%	\$18.02	No formal educational credential	None	Short-term on-the-job training
53-3099	Motor Vehicle Operators, All Other	<10	<10	(0)	(34%)	0.0%	\$16.97	No formal educational credential	None	Short-term on-the-job training
53-5021	Captains, Mates, and Pilots of Water Vessels	<10	<10	(0)	(7%)	0.1%	\$35.82	Postsecondary nondegree award	Less than 5 years	None
53-6021	Parking Attendants	<10	<10	(0)	(8%)	0.1%	\$19.33	No formal educational credential	None	Short-term on-the-job training
53-6031	Automotive and Watercraft Service Attendants	24	<10	(17)	(70%)	0.4%	\$16.92	No formal educational credential	None	Short-term on-the-job training
53-7051	Industrial Truck and Tractor Operators	<10	<10	(0)	(22%)	0.0%	\$23.39	No formal educational credential	None	Short-term on-the-job training
53-7061	Cleaners of Vehicles and Equipment	<10	<10	(1)	(17%)	0.1%	\$18.00	No formal educational credential	None	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	<10	<10	(1)	(18%)	0.2%	\$19.75	No formal educational credential	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	<10	<10	1	67%	0.1%	\$21.67	High school diploma or equivalent	None	Short-term on-the-job training

Source: Lightcast

Summary:

The *Hospitality and Tourism Cluster* accounts for 2% of Bend's gross domestic product at \$239 million dollars. The industry cluster is anchored by *NAICS 721110 Hotels and Motels* which employs 64% of the total industry cluster and accounts for 69% overall clusters' economic impact. The industry cluster sells 71% of its products and services outside the Bend area, but only 44% of the industry's demand is met by local suppliers. An economic survey of anchor amenities that support the Hospitality and Tourism Cluster are those located in the outdoor environment - Mt. Bachelor Ski Resort, the Deschutes River, Hayden Homes Amphitheater, High Desert Museum, and Smith Rock State Park.

The average education and skills-level needed to be employed in this cluster is a high school diploma or less with limited on the job training. There are local educational institutions that have the capacity to provide the knowledge and skills required.

The proposed cluster name for *Hospitality and Tourism* is **Outdoor Lifestyle and Products**.