



Economic Overview

Columbia County, Florida



Career Source
A: 1112 N Main St • Gainesville • FL • 32601
P: 352-955-2245 Ext.5950

Demographic Profile.....	3
Employment Trends	5
Unemployment Rate	5
Wage Trends	6
Cost of Living Index	7
Industry Snapshot	8
Occupation Snapshot	10
Industry Clusters	12
Education Levels.....	13
Gross Domestic Product.....	14
Columbia County, Florida Regional Map.....	16
FAQ.....	17

Demographic Profile

The population in Columbia County, Florida was 70,755 per American Community Survey data for 2019-2023.

The region has a civilian labor force of 30,031 with a participation rate of 53.1%. Of individuals 25 to 64 in Columbia County, Florida, 15.9% have a bachelor's degree or higher which compares with 36.5% in the nation.

The median household income in Columbia County, Florida is \$55,070 and the median house value is \$186,400.

Summary ¹						
	Percent			Value		
	Columbia County, Florida	Florida	USA	Columbia County, Florida	Florida	USA
Demographics						
Population (ACS)	—	—	—	70,755	21,928,881	332,387,540
Male	51.6%	49.1%	49.5%	36,505	10,773,620	164,545,087
Female	48.4%	50.9%	50.5%	34,250	11,155,261	167,842,453
Median Age ²	—	—	—	40.7	42.6	38.7
Under 18 Years	22.3%	19.6%	22.2%	15,746	4,305,366	73,645,238
18 to 24 Years	8.0%	8.1%	9.1%	5,661	1,773,216	30,307,641
25 to 34 Years	11.7%	12.7%	13.7%	8,259	2,779,896	45,497,632
35 to 44 Years	13.0%	12.5%	13.1%	9,177	2,738,113	43,492,887
45 to 54 Years	11.4%	12.4%	12.3%	8,060	2,725,323	40,847,713
55 to 64 Years	13.7%	13.6%	12.8%	9,709	2,976,234	42,626,382
65 to 74 Years	12.0%	11.7%	10.0%	8,497	2,566,979	33,293,127
75 Years and Over	8.0%	9.4%	6.8%	5,646	2,063,754	22,676,920
Race: White	72.8%	59.9%	63.4%	51,524	13,136,701	210,875,446
Race: Black or African American	16.5%	15.3%	12.4%	11,658	3,363,769	41,070,890
Race: American Indian and Alaska Native	0.2%	0.3%	0.9%	116	66,779	2,924,996
Race: Asian	0.9%	2.9%	5.8%	660	628,137	19,352,659
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.1%	0.2%	29	13,136	629,292
Race: Some Other Race	2.8%	5.6%	6.6%	1,998	1,222,567	21,940,536
Race: Two or More Races	6.7%	16.0%	10.7%	4,770	3,497,792	35,593,721
Hispanic or Latino (of any race)	7.4%	26.7%	19.0%	5,258	5,865,737	63,131,589
Population Growth						
Population (Pop Estimates) ⁴	—	—	—	73,063	22,610,726	334,914,895
Population Annual Average Growth ⁴	0.8%	1.5%	0.6%	562	305,905	1,885,495
People per Square Mile ⁴	—	—	—	91.6	421.4	94.8
Economic						
Labor Force Participation Rate and Size (civilian population 16 years and over)	53.1%	59.4%	63.3%	30,031	10,725,531	168,567,852
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	71.7%	82.5%	83.0%	18,196	6,757,770	107,055,165
Work from Home	7.1%	13.9%	13.5%	1,951	1,406,025	21,267,373
Armed Forces Labor Force	0.3%	0.4%	0.5%	149	78,025	1,287,774
Veterans, Age 18-64	7.0%	5.0%	4.2%	2,843	640,175	8,410,268
Veterans Labor Force Participation Rate and Size, Age 18-64	61.7%	74.4%	77.0%	1,754	475,998	6,478,181
Median Household Income ²	—	—	—	\$55,070	\$71,711	\$78,538
Per Capita Income	—	—	—	\$28,030	\$41,055	\$43,289
Mean Commute Time (minutes)	—	—	—	25.6	28.0	26.6
Commute via Public Transportation	0.1%	1.2%	3.5%	16	125,364	5,528,841
Educational Attainment, Age 25-64						
No High School Diploma	15.4%	9.7%	10.0%	5,433	1,087,436	17,176,172
High School Graduate	35.4%	26.7%	25.0%	12,455	2,994,428	43,057,491

Summary¹

	Percent			Value		
	Columbia County, Florida	Florida	USA	Columbia County, Florida	Florida	USA
Some College, No Degree	22.7%	18.6%	19.3%	7,985	2,089,960	33,315,654
Associate's Degree	10.6%	11.0%	9.2%	3,736	1,228,555	15,894,085
Bachelor's Degree	11.3%	22.0%	22.8%	3,985	2,471,584	39,256,774
Postgraduate Degree	4.6%	12.0%	13.8%	1,611	1,347,603	23,764,438
Housing						
Total Housing Units	—	—	—	30,066	10,082,356	142,332,876
Median House Value (of owner-occupied units) ^{2,5}	—	—	—	\$186,400	\$325,000	\$303,400
Homeowner Vacancy	0.7%	1.5%	1.0%	138	89,064	850,724
Rental Vacancy	4.0%	7.6%	5.5%	327	231,428	2,605,688
Renter-Occupied Housing Units (% of Occupied Units)	29.1%	32.7%	35.0%	7,782	2,794,102	44,590,828
Owner-Occupied Housing Units (% of Occupied Units)	70.9%	67.3%	65.0%	18,938	5,756,809	82,892,037
Occupied Housing Units with No Vehicle Available (% of Occupied Units)	5.4%	5.9%	8.3%	1,452	504,857	10,602,826
Social						
Poverty Level (of all people)	17.0%	12.6%	12.4%	11,237	2,707,698	40,390,045
Households Receiving Food Stamps/SNAP	19.8%	12.6%	11.8%	5,286	1,078,978	15,004,950
Enrolled in Grade 12 (% of total population)	1.4%	1.2%	1.3%	1,005	257,645	4,405,676
Disconnected Youth ³	8.9%	2.5%	2.4%	285	25,308	420,352
Children in Single Parent Families (% of all children)	43.1%	38.0%	34.0%	6,134	1,546,515	23,701,745
Uninsured	13.8%	11.9%	8.6%	9,191	2,569,710	28,000,876
With a Disability, Age 18-64	17.6%	10.1%	10.7%	6,558	1,286,547	21,269,700
With a Disability, Age 18-64, Labor Force Participation Rate and Size	38.4%	44.8%	47.0%	2,521	576,771	10,001,264
Foreign Born	4.0%	21.4%	13.9%	2,820	4,694,419	46,108,901
Speak English Less Than Very Well (population 5 yrs and over)	2.4%	12.1%	8.4%	1,626	2,517,985	26,299,012

Source: [JobsEQ®](#)

1. American Community Survey 2019-2023, unless noted otherwise

2. Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties.

3. Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

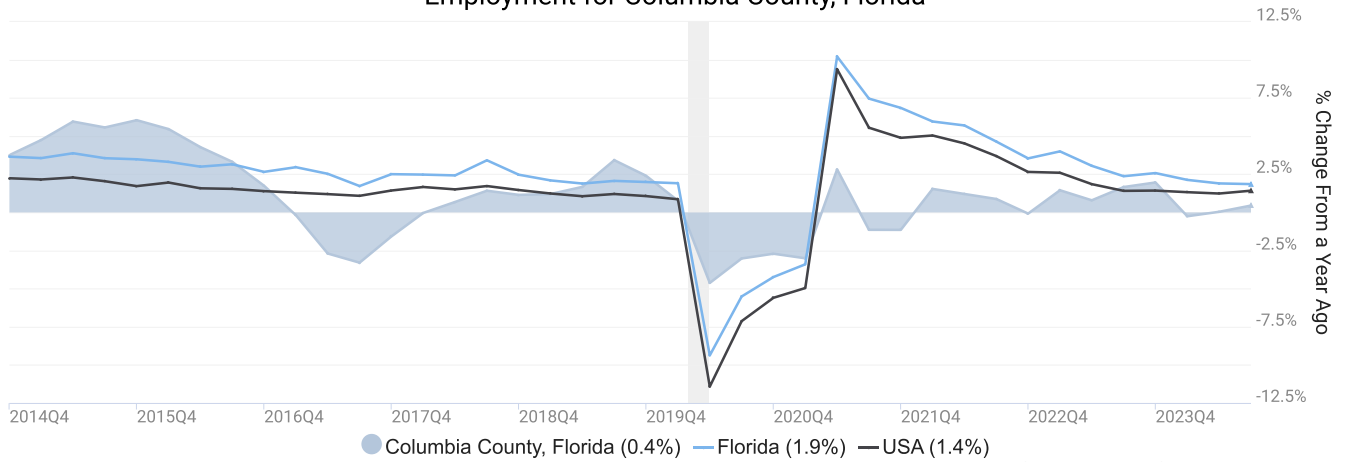
4. Census Population Estimate for 2023, annual average growth rate since 2013.

5. The Census's method for calculating median house values changed with the 2022 data set, so pre-2022 values are not directly comparable with later data.

Employment Trends

As of 2024Q3, total employment for Columbia County, Florida was 26,697 (based on a four-quarter moving average). Over the year ending 2024Q3, employment increased 0.4% in the region.

Employment for Columbia County, Florida

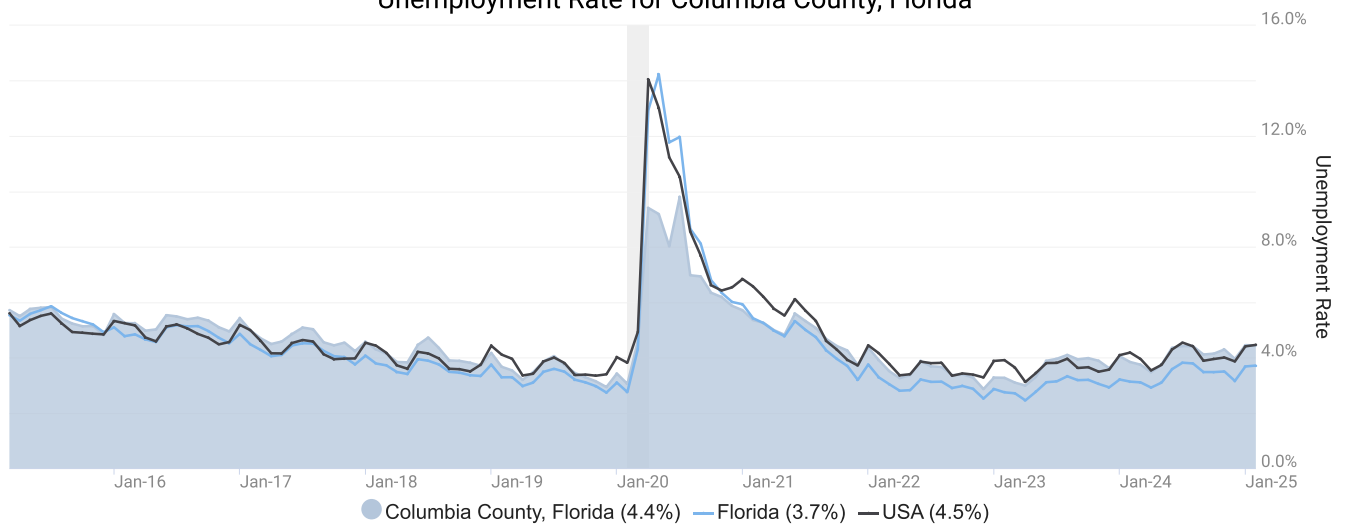


Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2024Q2 with preliminary estimates updated to 2024Q3.

Unemployment Rate

The unemployment rate for Columbia County, Florida was 4.4% as of February 2025. The regional unemployment rate was lower than the national rate of 4.5%. One year earlier, in February 2024, the unemployment rate in Columbia County, Florida was 3.8%.

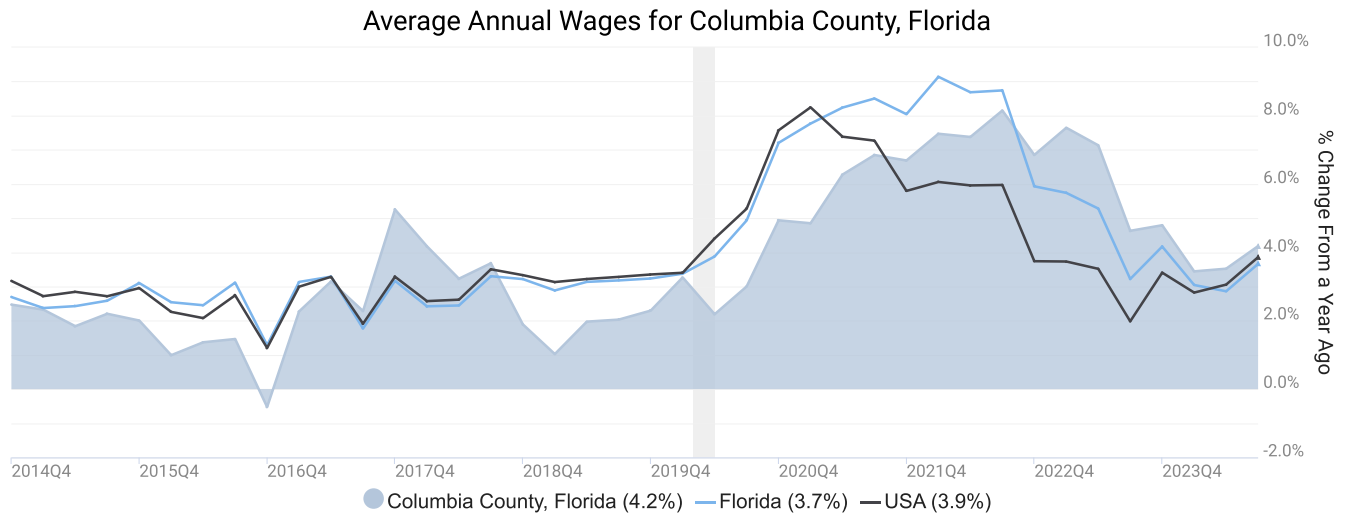
Unemployment Rate for Columbia County, Florida



Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through February 2025.

Wage Trends

The average worker in Columbia County, Florida earned annual wages of \$49,772 as of 2024Q3. Average annual wages per worker increased 4.2% in the region over the preceding four quarters. For comparison purposes, annual average wages were \$72,609 in the nation as of 2024Q3.



Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2024Q2 with preliminary estimates updated to 2024Q3.

Cost of Living Index

The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. The cost of living is 11.9% lower in Columbia County, Florida than the U.S. average.

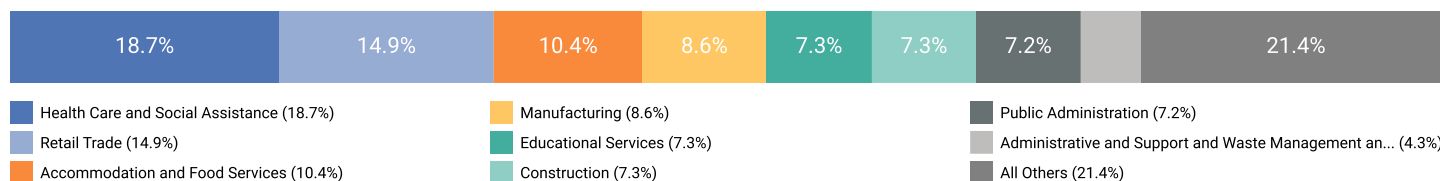
Cost of Living Information			
	Annual Average Salary	Cost of Living Index (Base US)	US Purchasing Power
Columbia County, Florida	\$49,772	88.1	\$56,477
Florida	\$66,213	103.4	\$64,021
USA	\$72,609	100.0	\$72,609

Source: [JobsEQ®](#)
Data as of 2024Q3
Cost of Living per [COLI](#), data as of 2024Q4, imputed by Chmura where necessary.

Industry Snapshot

The largest sector in Columbia County, Florida is Health Care and Social Assistance, employing 4,986 workers. The next-largest sectors in the region are Retail Trade (3,978 workers) and Accommodation and Food Services (2,765). High location quotients (LQs) indicate sectors in which a region has high concentrations of employment compared to the national average. The sectors with the largest LQs in the region are Agriculture, Forestry, Fishing and Hunting (LQ = 2.16), Public Administration (1.54), and Retail Trade (1.52).

Total Workers for Columbia County, Florida by Industry



Source: JobsEQ®
Data as of 2024Q3
Note: Figures may not sum due to rounding.

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2024Q2 with preliminary estimates updated to 2024Q3.

Sectors in Columbia County, Florida with the highest average wages per worker are Utilities (\$118,151), Finance and Insurance (\$83,280), and Management of Companies and Enterprises (\$83,245). Regional sectors with the best job growth (or most moderate job losses) over the last 5 years are Retail Trade (+434 jobs), Health Care and Social Assistance (+369), and Construction (+256).

Over the next 1 year, employment in Columbia County, Florida is projected to expand by 297 jobs. The fastest growing sector in the region is expected to be Utilities with a +1.8% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Health Care and Social Assistance (+76 jobs), Accommodation and Food Services (+34), and Retail Trade (+24).

Columbia County, Florida, 2024Q3¹

NAICS	Industry	Current			5-Year History		1-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
62	Health Care and Social Assistance	4,986	\$59,397	1.24	369	1.5%	564	222	265	76	1.5%
44	Retail Trade	3,978	\$39,213	1.52	434	2.3%	568	229	316	24	0.6%
72	Accommodation and Food Services	2,765	\$24,465	1.19	-262	-1.8%	527	210	283	34	1.2%
31	Manufacturing	2,292	\$63,256	1.09	155	1.4%	253	85	146	21	0.9%
61	Educational Services	1,958	\$43,377	0.91	-25	-0.2%	201	83	101	17	0.9%
23	Construction	1,939	\$56,943	1.21	256	2.9%	191	61	105	24	1.3%
92	Public Administration	1,926	\$57,834	1.54	11	0.1%	196	71	106	19	1.0%
56	Administrative and Support and Waste Management and Remediation Services	1,141	\$38,108	0.70	-1,374	-14.6%	144	52	78	14	1.3%
48	Transportation and Warehousing	1,132	\$54,621	0.85	197	3.9%	137	50	73	14	1.3%
81	Other Services (except Public Administration)	962	\$30,965	0.85	35	0.7%	122	45	65	12	1.3%
54	Professional, Scientific, and Technical Services	830	\$79,161	0.43	71	1.8%	79	25	42	12	1.4%
42	Wholesale Trade	804	\$68,140	0.80	-106	-2.5%	88	30	50	8	1.0%
11	Agriculture, Forestry, Fishing and Hunting	697	\$30,516	2.16	67	2.0%	91	40	45	5	0.7%
52	Finance and Insurance	530	\$83,280	0.50	56	2.3%	49	17	27	5	1.0%
53	Real Estate and Rental and Leasing	297	\$55,127	0.62	38	2.8%	31	13	16	3	1.0%
71	Arts, Entertainment, and Recreation	211	\$26,496	0.38	49	5.5%	34	12	19	3	1.6%
51	Information	97	\$45,282	0.19	-18	-3.3%	9	3	5	1	0.8%
55	Management of Companies and Enterprises	78	\$83,245	0.19	6	1.7%	8	2	4	1	1.5%
22	Utilities	53	\$118,151	0.38	-1	-0.2%	6	2	3	1	1.8%
99	Unclassified	20	\$37,159	0.46	16	33.4%	3	1	1	0	1.1%
21	Mining, Quarrying, and Oil and Gas Extraction	1	\$39,965	0.01	0	n/a	0	0	0	0	1.0%
Total - All Industries		26,697	\$49,772	1.00	-24	0.0%	3,202	1,196	1,709	297	1.1%

Source: [JobsEQ®](#)

Data as of 2024Q3

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2024Q2 with preliminary estimates updated to 2024Q3. Forecast employment growth uses national projections adapted for regional growth patterns.

Occupation Snapshot

The largest major occupation group in Columbia County, Florida is Office and Administrative Support Occupations, employing 2,905 workers. The next-largest occupation groups in the region are Sales and Related Occupations (2,756 workers) and Food Preparation and Serving Related Occupations (2,521). High location quotients (LQs) indicate occupation groups in which a region has high concentrations of employment compared to the national average. The major groups with the largest LQs in the region are Farming, Fishing, and Forestry Occupations (LQ = 1.56), Protective Service Occupations (1.44), and Healthcare Practitioners and Technical Occupations (1.38).

Occupation groups in Columbia County, Florida with the highest average wages per worker are Management Occupations (\$108,300), Legal Occupations (\$98,900), and Healthcare Practitioners and Technical Occupations (\$96,000). The unemployment rate in the region varied among the major groups from 1.0% among Legal Occupations to 6.8% among Farming, Fishing, and Forestry Occupations.

Over the next 1 year, the fastest growing occupation group in Columbia County, Florida is expected to be Healthcare Support Occupations with a +1.9% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Healthcare Practitioners and Technical Occupations (+34 jobs) and Food Preparation and Serving Related Occupations (+30). Over the same period, the highest separation demand (occupation demand due to retirements and workers moving from one occupation to another) is expected in Food Preparation and Serving Related Occupations (501 jobs) and Sales and Related Occupations (388).

Columbia County, Florida, 2024Q3¹

SOC	Occupation	Current						5-Year History		1-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
43-0000	Office and Administrative Support	2,905	\$46,500	0.93	110	2.8%	79	-520	-3.2%	340	143	185	13	0.4%
41-0000	Sales and Related	2,756	\$46,400	1.18	156	4.8%	199	-68	-0.5%	402	169	219	15	0.5%
35-0000	Food Preparation and Serving Related	2,521	\$35,000	1.15	196	5.6%	259	-239	-1.8%	531	216	285	30	1.2%
53-0000	Transportation and Material Moving	2,364	\$44,400	1.02	185	5.4%	104	155	1.4%	345	121	195	29	1.2%
29-0000	Healthcare Practitioners and Technical	2,191	\$96,000	1.38	25	1.2%	274	120	1.1%	160	65	61	34	1.6%
11-0000	Management	1,825	\$108,300	0.89	27	1.4%	98	133	1.5%	179	61	94	24	1.3%
25-0000	Educational Instruction and Library	1,471	\$59,400	1.02	30	2.4%	27	-24	-0.3%	146	61	71	15	1.0%
47-0000	Construction and Extraction	1,448	\$52,000	1.21	108	5.1%	21	111	1.6%	143	46	79	19	1.3%
51-0000	Production	1,294	\$47,000	0.89	80	4.6%	20	80	1.3%	156	53	93	10	0.8%
13-0000	Business and Financial Operations	1,217	\$79,600	0.71	29	2.5%	31	100	1.7%	118	36	66	16	1.3%
31-0000	Healthcare Support	1,203	\$39,500	0.97	49	3.1%	49	173	3.2%	196	75	98	23	1.9%
49-0000	Installation, Maintenance, and Repair	1,136	\$55,700	1.09	43	2.6%	88	101	1.9%	119	42	61	16	1.4%
37-0000	Building and Grounds Cleaning and Maintenance	934	\$38,600	1.07	66	4.6%	21	-138	-2.7%	140	56	73	11	1.2%
33-0000	Protective Service	826	\$47,900	1.44	21	2.2%	24	-69	-1.6%	89	33	50	7	0.8%
39-0000	Personal Care and Service	564	\$39,200	0.82	30	3.9%	14	38	1.4%	105	37	60	7	1.3%
21-0000	Community and Social Service	455	\$52,300	0.92	7	2.4%	49	3	0.1%	48	17	24	6	1.4%
15-0000	Computer and Mathematical	377	\$93,700	0.44	9	2.6%	14	-12	-0.6%	28	9	14	6	1.5%

Columbia County, Florida, 2024Q3¹

SOC	Occupation	Current					5-Year History			1-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
17-0000	Architecture and Engineering	370	\$91,400	0.87	4	1.7%	7	-4	-0.2%	31	10	16	5	1.4%
27-0000	Arts, Design, Entertainment, Sports, and Media	278	\$65,300	0.57	4	3.1%	12	-6	-0.4%	31	11	16	3	1.2%
45-0000	Farming, Fishing, and Forestry	241	\$40,400	1.56	22	6.8%	0	51	4.9%	39	15	22	2	0.7%
19-0000	Life, Physical, and Social Science	171	\$73,900	0.70	2	2.8%	13	6	0.7%	18	3	13	3	1.5%
23-0000	Legal	149	\$98,900	0.67	1	1.0%	7	-16	-2.1%	10	4	5	2	1.2%
Total - All Occupations		26,697	\$57,700	1.00	1,203	3.8%	1,410	-24	0.0%	3,378	1,282	1,800	297	1.1%

Source: [JobsEQ®](#)

Data as of 2024Q3 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

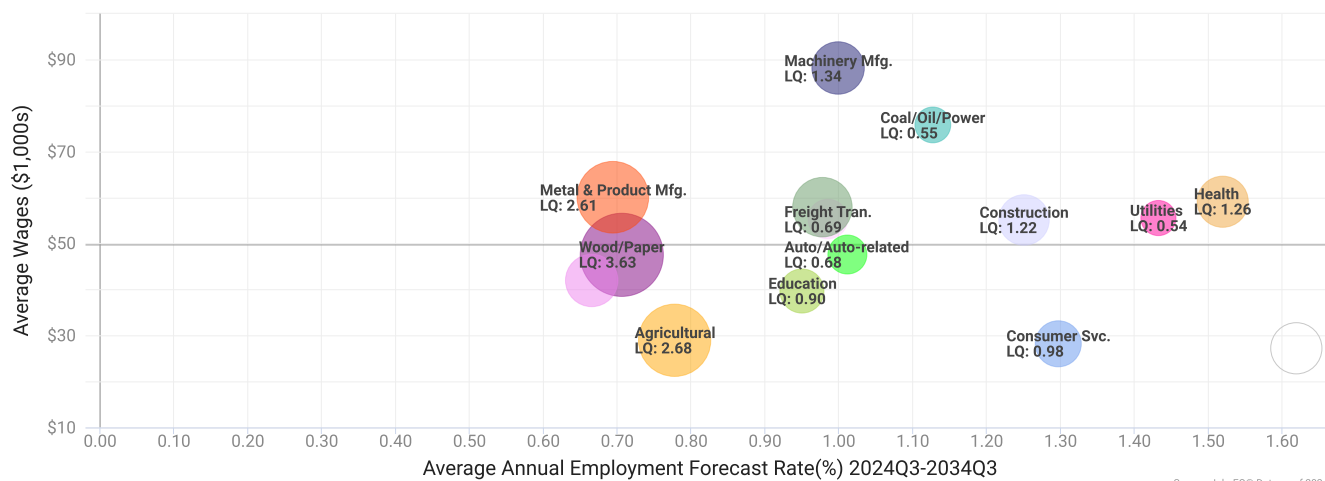
3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

Occupation employment data are estimated via industry employment data and the estimated industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2024Q2, imputed where necessary with preliminary estimates updated to 2024Q3. Wages by occupation are as of 2024 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Industry Clusters

A cluster is a geographic concentration of interrelated industries or occupations. The industry cluster in Columbia County, Florida with the highest relative concentration is Wood/Paper with a location quotient of 3.63. This cluster employs 712 workers in the region with an average wage of \$47,617. Employment in the Wood/Paper cluster is projected to expand in the region about 0.7% per year over the next ten years.

Industry Clusters for Columbia County, Florida as of 2024Q3

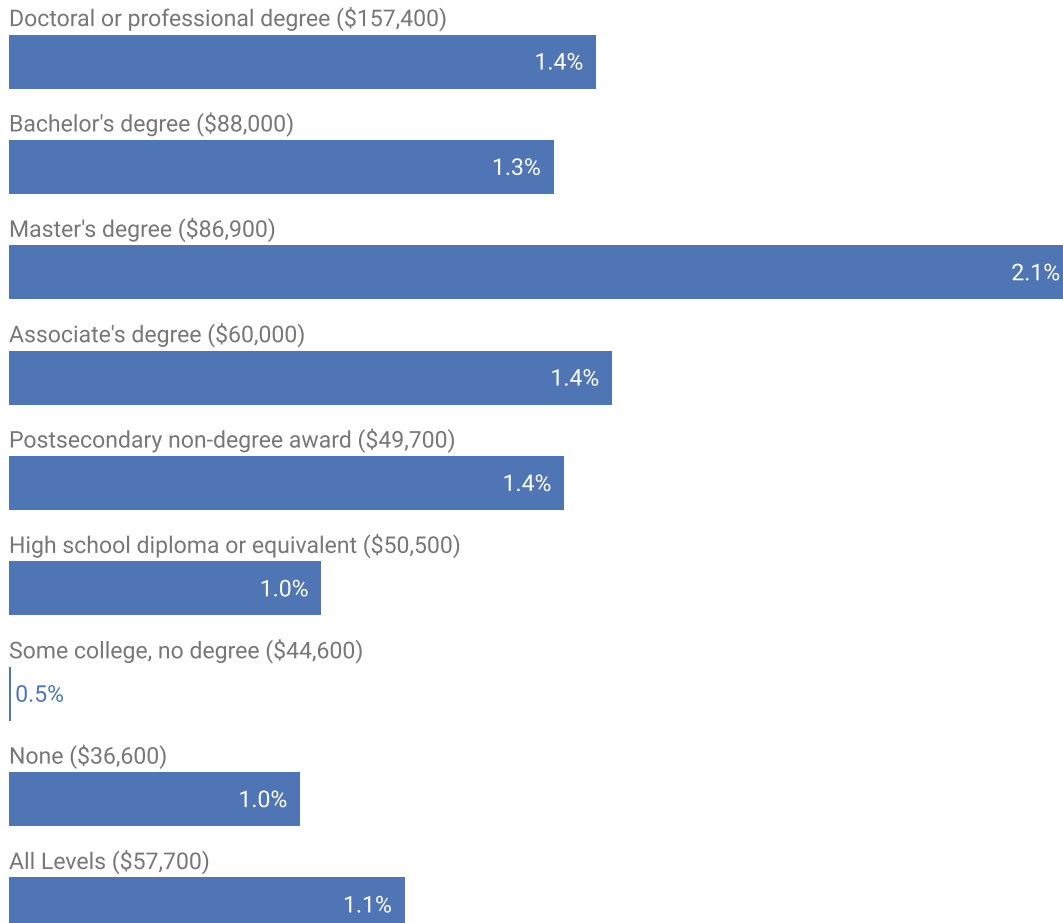


Location quotient and average wage data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics, imputed where necessary, and updated through 2024Q2 with preliminary estimates updated to 2024Q3. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Education Levels

Expected growth rates for occupations vary by the education and training required. While all employment in Columbia County, Florida is projected to grow 1.1% over the next ten years, occupations typically requiring a postgraduate degree are expected to grow 1.4% per year, those requiring a bachelor's degree are forecast to grow 1.3% per year, and occupations typically needing a 2-year degree or certificate are expected to grow 1.4% per year.

Annual Average Projected Job Growth by Education Levels

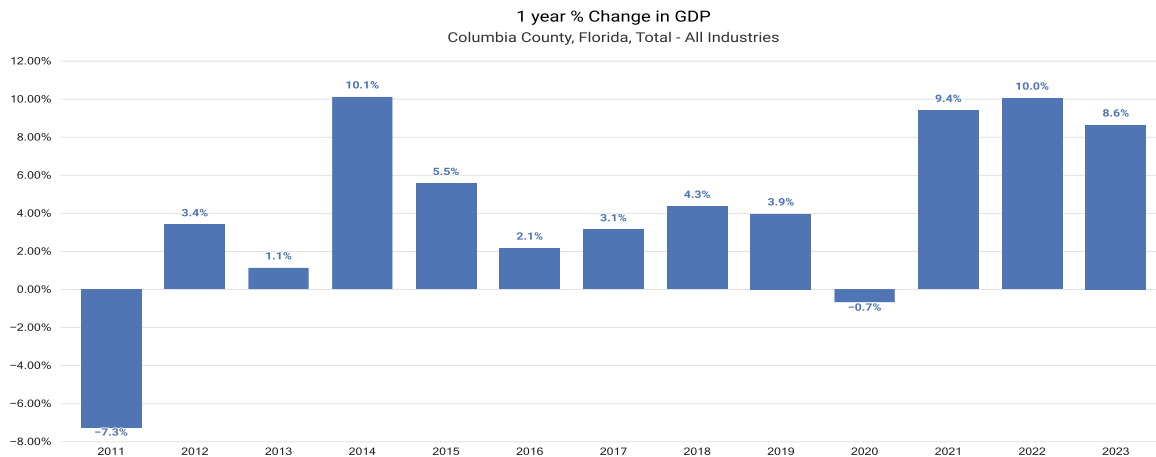


Source: JobsEQ®
Data as of 2024Q3

Employment by occupation data are estimates as of 2024Q3. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Gross Domestic Product

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2023, nominal GDP in Columbia County, Florida expanded 8.6%. This follows growth of 10.0% in 2022. As of 2023, total GDP in Columbia County, Florida was \$2,791,693,000.

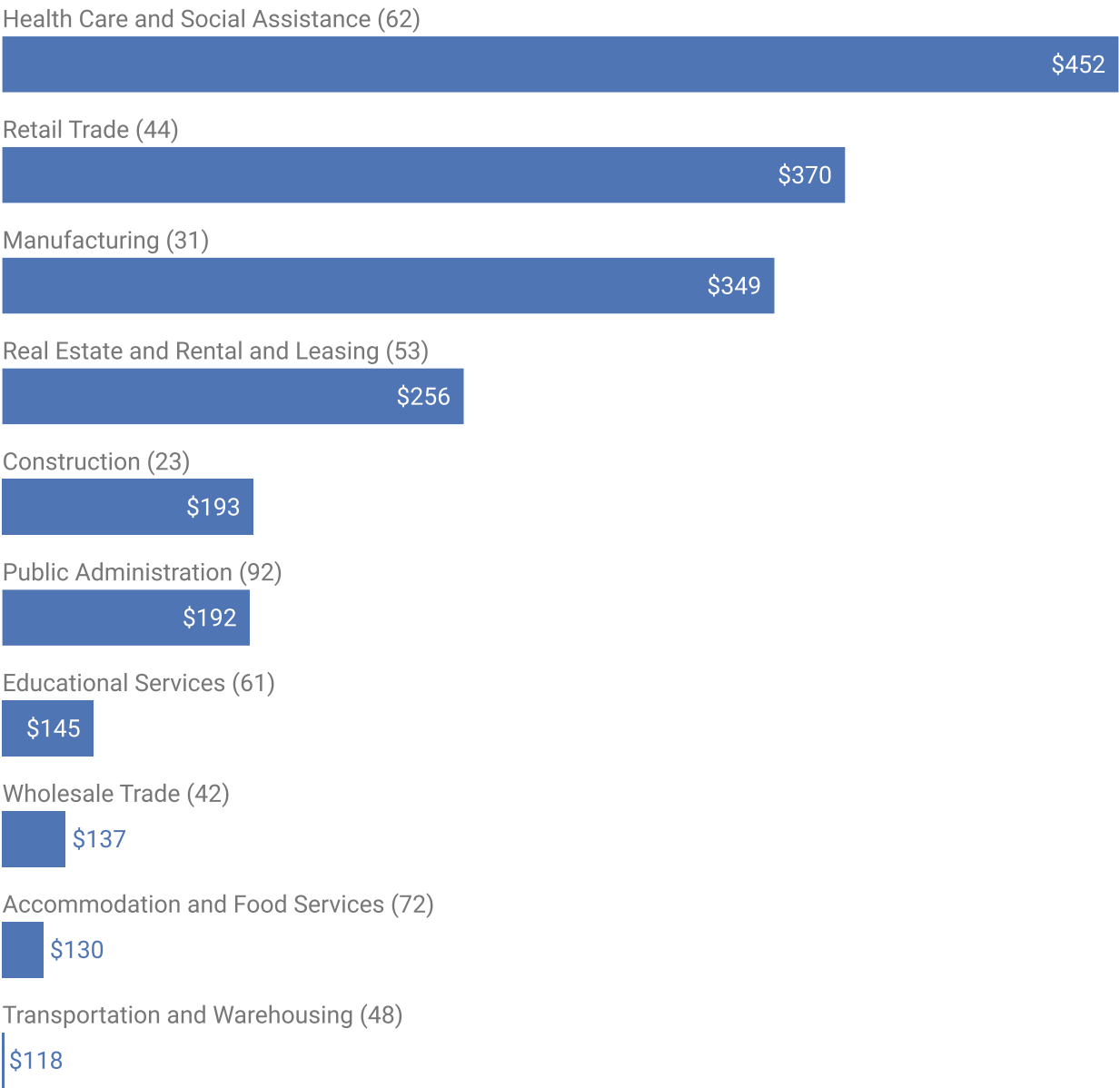


Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023.

Of the sectors in Columbia County, Florida, Health Care and Social Assistance contributed the largest portion of GDP in 2023, \$451,612,000. The next-largest contributions came from Retail Trade (\$369,526,000); Manufacturing (\$348,691,000); and Real Estate and Rental and Leasing (\$255,966,000).

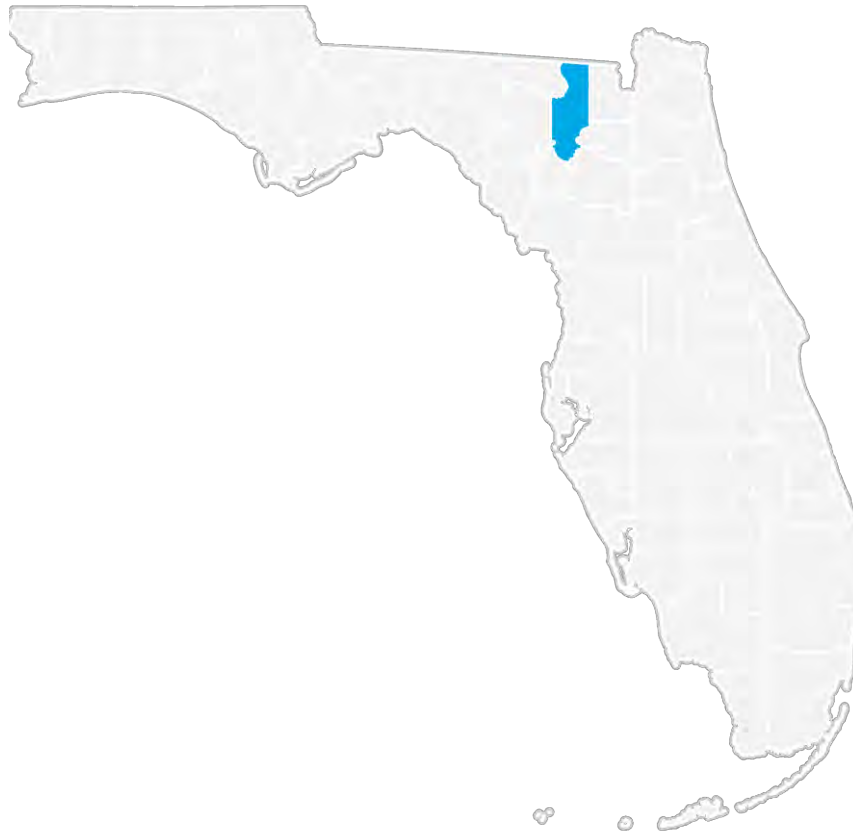
GDP (in \$ millions)

Columbia County, Florida, 2023



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023.

Columbia County, Florida Regional Map



FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the “all industry” level to the 6-digit level. The first two digits define the top level category, known as the “sector,” which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

About This Report

This report and all data herein were produced by JobsEQ®, a product of Chmura Economics & Analytics. The information contained herein was obtained from sources we believe to be reliable. However, we cannot guarantee its accuracy and completeness.