JOBSEQ

Industry Spotlight

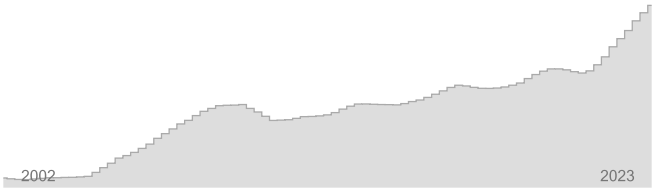
Biotechnology

Fort Bend County, Texas

Spotlight Summary

Biotechnology
Fort Bend County, Texas – 2023Q1

EMPLOYMENT



644

Regional employment / **867,183** in the nation

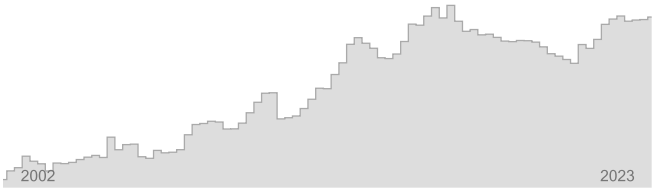
8.3% ↑

Avg Ann % Change Last 10 Years / **+3.6%** in the U.S.

0.2%

% of Total Employment / **0.5%** in the U.S.

WAGES



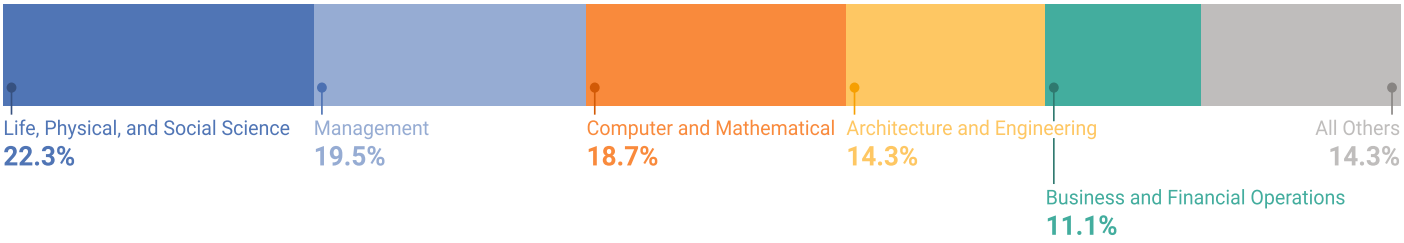
$106,007

Avg Wages per Worker / **$162,305** in the nation

1.4% ↑

Avg Ann % Change Last 10 Years / **+4.1%** in the U.S.

TOP OCCUPATION GROUPS



TOP INDUSTRIES

Avg Ann % Change in Employment, Last 10 Years

29.2 % ↑

Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

-8.0 % ↓

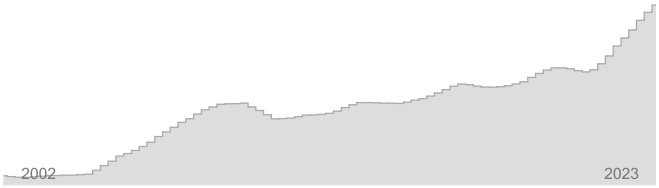
Research and Development in Biotechnology (except Nanobiotechnology)

9.1 % ↑

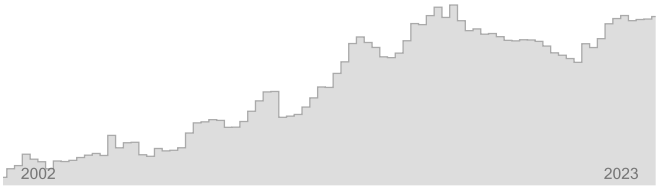
Research and Development in Nanotechnology

Industry Snapshot

EMPLOYMENT



WAGES

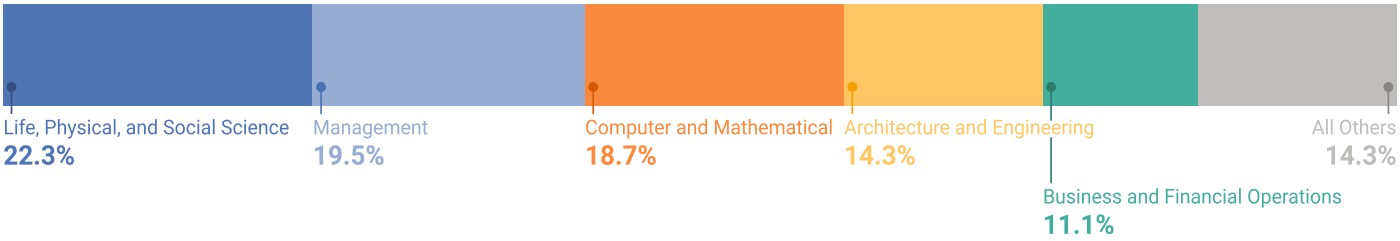


6-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	525	$109,545	0.58		64	3.6%
Research and Development in Biotechnology (except Nanobiotechnology)	106	$90,537	0.22		13	3.5%
Research and Development in Nanotechnology	14	$89,821	0.29		2	3.2%
Biotechnology	**644**	**$106,007**	**0.45**		**78**	**3.6%**

Employment is one of the broadest and most timely measures of a region's economy. Fluctuations in the number of jobs shed light on the health of an industry. A growing employment base creates more opportunities for regional residents and helps a region grow its population.

Since wages and salaries generally compose the majority of a household's income, the annual average wages of a region affect its average household income, housing market, quality of life, and other socioeconomic indicators.

Staffing Pattern



6-digit Occupation	Empl	Avg Ann Wages	Annual Demand
Software Developers	47	$142,600	6
Medical Scientists, Except Epidemiologists	36	$86,900	5
General and Operations Managers	27	$194,900	4
Natural Sciences Managers	23	$128,400	3
Biological Technicians	21	$49,000	4
Biochemists and Biophysicists	15	$69,700	2
Project Management Specialists	15	$115,400	2
Managers, All Other	13	$196,400	2
Business Operations Specialists, All Other	13	$97,700	2
Computer Hardware Engineers	12	$135,800	1
Remaining Component Occupations	392	$104,000	51
Total	**613**		

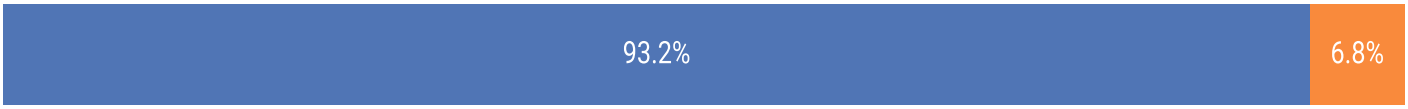
The mix of occupations points to the ability of a region to support an industry and its flexibility to adapt to future demand. Industry wages are a component of the cost of labor for regional employers.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Employment Distribution by Type

The table below shows the employment mix by ownership type for Biotechnology for Fort Bend County, Texas. Four of these ownership types — federal, state, and local government and the private sector — together constitute “Covered Employment” (employment covered by the Unemployment Insurance programs of the United States and reported via the Quarterly Census of Employment and Wages).

“Self-Employment” refers to unincorporated self-employment and represents workers whose primary job is self-employment (that is, these data do not include workers whose primary job is a wage-and-salary position that is supplemented with self-employment).



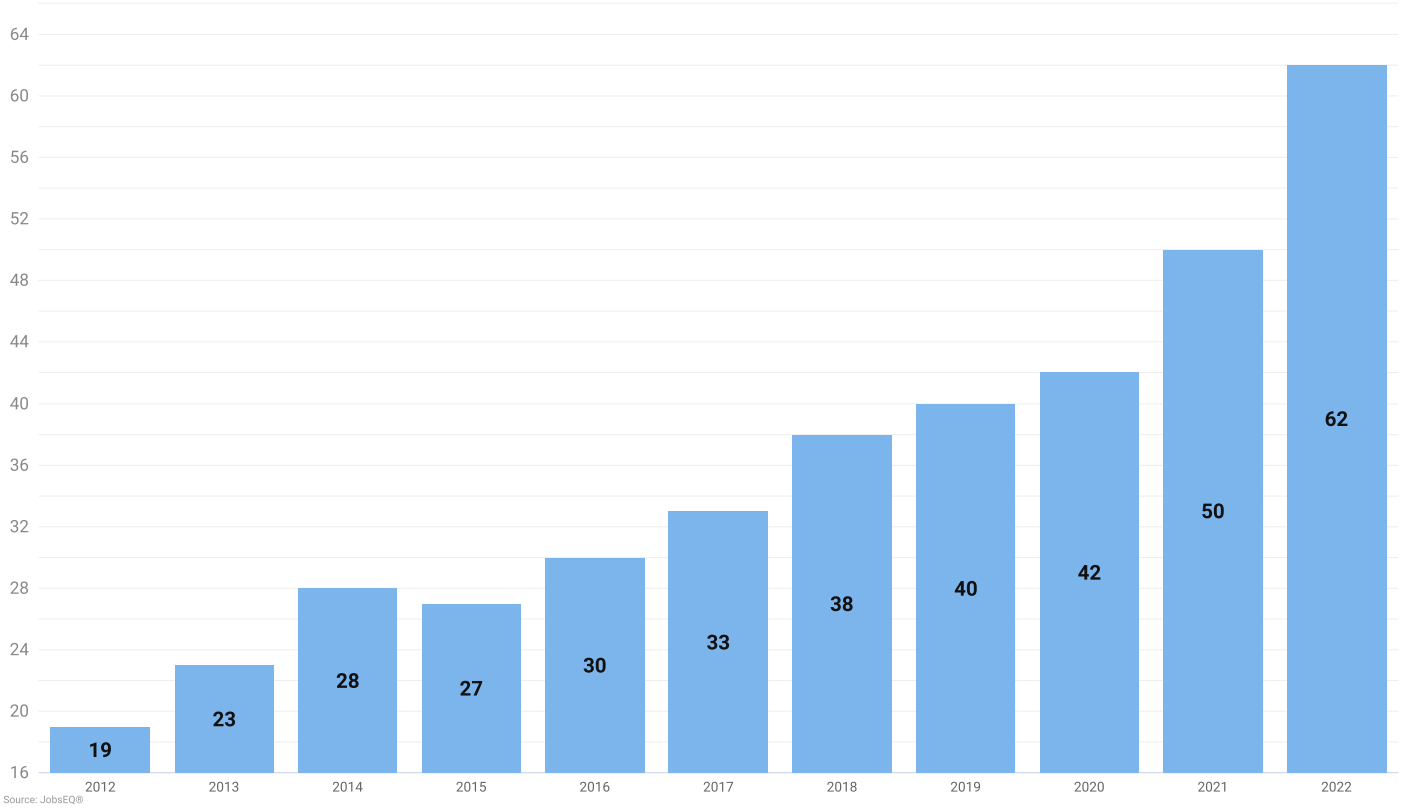
	Empl	%
Private	601	93.2%
Self-Employment	44	6.8%

Source: JobsEQ®

Strong entrepreneurial activity is indicative of growing industries. Using self-employment as a proxy for entrepreneurs, a higher share of self-employed individuals within a regional industry points to future growth.

Establishments

In 2022, there were 62 Biotechnology establishments in Fort Bend County, Texas (per covered employment establishment counts), an increase from 19 establishments ten years earlier in 2012.

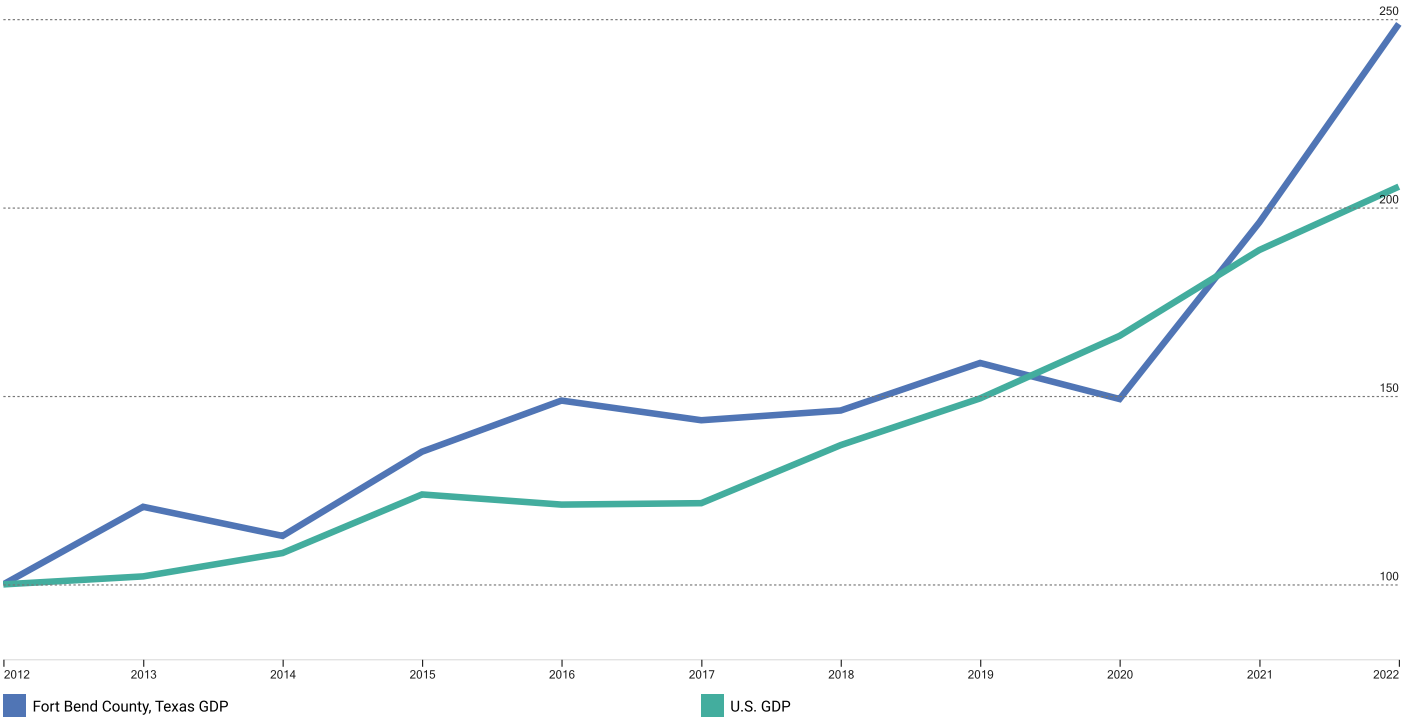


New business formations are an important source of job creation in a regional economy, spurring innovation and competition, and driving productivity growth. Establishment data can provide an indicator of growth in businesses by counting each single location (such as a factory or a store) where business activity takes place, and with at least one employee.

GDP & Productivity

In 2022, Biotechnology produced $93.1 million in GDP for Fort Bend County, Texas.

GDP: Indexed 2012 = 100



0.3 %

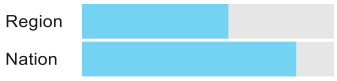
Industry Share of Total GDP / **0.8 %** in the nation

9.5 %

Avg Ann % Change Last 10 Yrs / **7.5 %** in the nation

$251k

Output per Worker / **$367k** in the nation



Gross domestic product (GDP) is the most comprehensive measure of regional economic activity, and an industry's contribution to GDP is an important indicator of regional industry strength. It is a measure of total value-added to a regional economy in the form of labor income, proprietor's income, and business profits, among others. GDP values shown on this page are nominal GDP data.

Growth in productivity (output per worker) leads to increases in wealth and higher average standards of living in a region.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Supply Chain: Top Suppliers

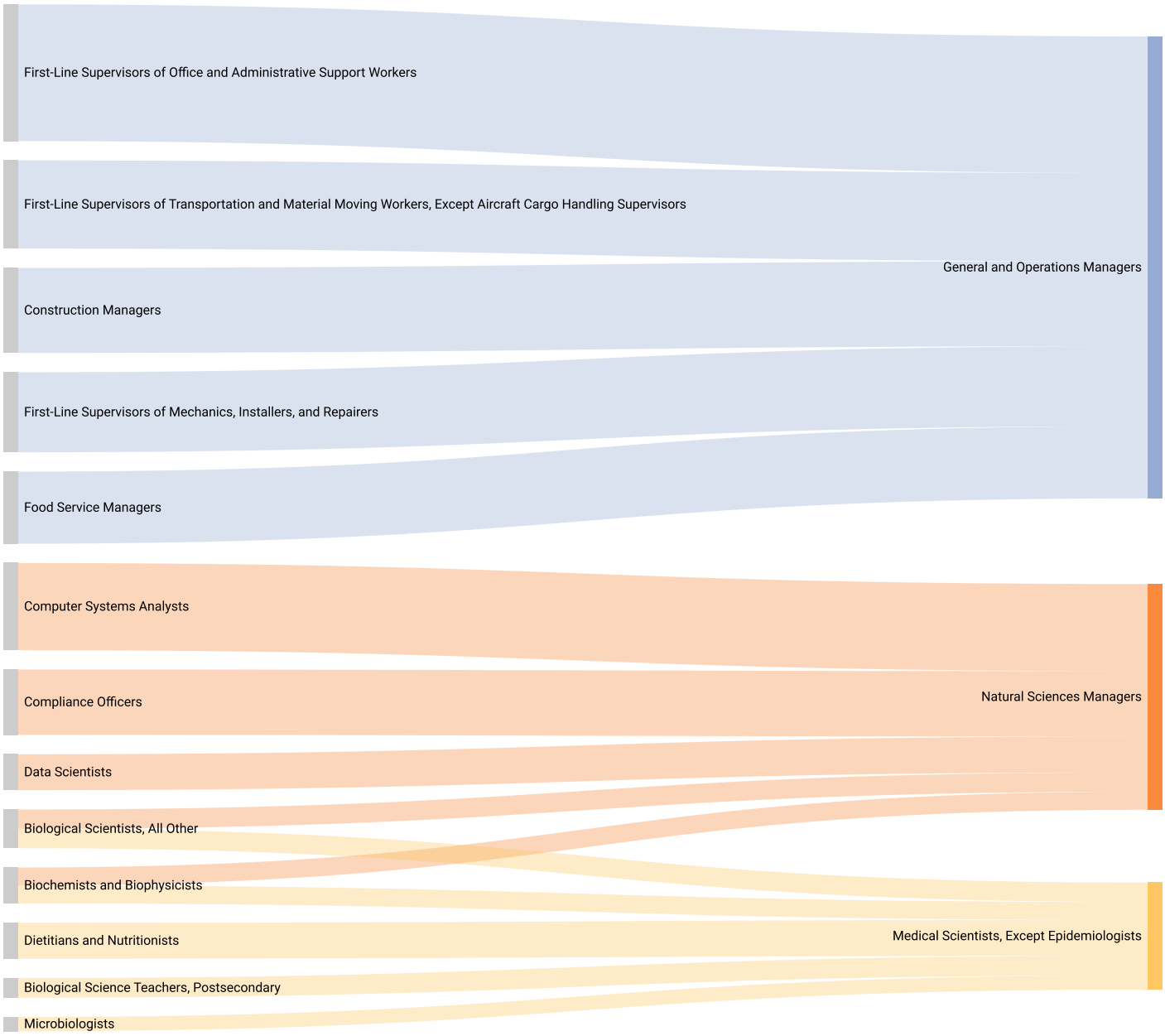
As of 2023Q1, Biotechnology in Fort Bend County, Texas are estimated to make $62.3 million in annual purchases from suppliers in the United States with about 69% or $43.1 million of these purchases being made from businesses located in Fort Bend County, Texas.

6-digit Supplier Industries	Purchases from In-Region ($M)	Purchases from Out-of-Region ($M)
Residential Property Managers	$3.0	<$0.1
Administrative Management and General Management Consulting Services	$2.8	$0.1
Offices of Lawyers	$2.2	$0.8
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	$1.5	$1.3
Offices of Real Estate Agents and Brokers	$2.3	$0.2
Remaining Supplier Industries	$31.4	$16.8
Total	$43.1	$19.2

Supplier-buyer networks can indicate local linkages between industries, regional capacity to support growth in an industry, and potential leakage of sales out of the region.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Sector Strategy Pathways



The graphics on this page illustrate relationships and potential movement (from left to right) between occupations that share similar skill sets. Developing career pathways as a strategy promotes industry employment growth and workforce engagement.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Postsecondary Programs Linked to Biotechnology

Program	Awards
North American University	
Business Administration and Management, General	31
Computer Science	66

Source: JobsEQ®

The number of graduates from postsecondary programs in the region identifies the pipeline of future workers as well as the training capacity to support industry demand.

Among postsecondary programs at schools located in Fort Bend County, Texas, the sampling above identifies those most linked to occupations relevant to Biotechnology. For a complete list see JobsEQ®, http://www.chmuraecon.com/jobseq

Fort Bend County, Texas Regional Map

Source: JobsEQ®, http://www.chmuraecon.com/jobseq

Data Notes

- Industry employment and wages (including total regional employment and wages) are as of 2023Q1 and are based upon BLS QCEW data, imputed by Chmura where necessary, and supplemented by additional sources including Census ZBP data. Employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts.
- Occupation employment is as of 2023Q1 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS OEWS data. Wages by occupation are as of 2023, utilizing BLS OEWS data and imputed by Chmura.
- GDP is derived from BEA data and imputations by Chmura. Productivity (output per worker) is calculated by Chmura using industry employment and wages as well as GDP and BLS output data. Supply chain modeling including purchases by industry are developed by Chmura.
- Postsecondary awards are per the NCES and are for the 2020-2021 academic year.
- Establishment counts are per the BLS QCEW data.
- Figures may not sum due to rounding.

Industry Definition

Biotechnology is defined as the following NAICS industries:

Code	Description
541713	Research and Development in Nanotechnology
541714	Research and Development in Biotechnology (except Nanobiotechnology)
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

FAQ

What is (LQ) location quotient?

Location quotient 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 annual demand?

Annual demand is a of the sum of the annual projected growth demand and 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. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.

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.